The Economic and Labour Market Impacts of Tier 1 entrepreneur and investor migrants

Report to the Migration Advisory Committee

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The qualitative stage of the research relied on the participation of entrepreneurs and investors who applied to come to the UK through the Tier 1 visa route. Forty nine migrant entrepreneurs and investors participated in the research, 20 through an interview and 26 through providing responses by email. A further three Interviews were carried out with holders of a different type of visa, eg Tier 1 Graduate Entrepreneur. We are grateful for the time and effort given to the research by all participants and also for their trust in disclosing details of their businesses and finances. We would also like to thank the law firms who agreed to contact their clients on our behalf and who told us about their experiences of working with Tier 1 applicants. While these were not used directly in the report, they helped us to understand some of the issues involved.

The report refers to the UK Border Agency which no longer exits. Therefore all references to the Agency refer to its former status.

Executive Summary

This report examines the economic impacts of entrepreneur and investor migrants who come to the UK through the Tier 1 route, introduced in 2008. The research for the report was commissioned by the Migration Advisory Committee (MAC) in February 2013. Tier 1 entrepreneur and investor migrants originate from outside of the European Economic Area (EEA) and the research therefore builds on previous research commissioned by MAC on the impact of migration on the UK.

The research included a review of existing research both in the UK and internationally, an examination of UK datasets, and new qualitative evidence through case study interviews with Tier 1 entrepreneurs and investors. These findings are presented in Sections 1 - 3 of the report and are followed by conclusions and policy implications in Section 4.

The evidence review - key findings

Existing theory and international evidence suggest that the economic impacts of migration, particularly skilled migrants, run well beyond the labour market. Broadly, researchers identify 'production-side' and 'consumption-side' impacts.

Production-side impacts operate on productivity and its drivers, such as entrepreneurship, investment and innovation. For example, in theory skilled migration may pre-select entrepreneurial individuals, who contribute to new business formation and new employment. More broadly, more diverse workforces may help firms generate new ideas, or better access international markets by lowering transaction costs. Conversely, migrant entrepreneurs may face discrimination or institutional constraints, and in theory, more diverse firms might exhibit lower trust within the workforce if some groups discriminate against others.

Consumption-side impacts operate on the level of demand for goods and services, especially in 'non-tradeable' sectors (such as local retail) and in sectors where supply adjusts relatively slowly (such as housing). By adding to local populations, migration may raise the level of demand for these goods and services; changing population composition may also alter the mix of goods and services offered. This may improve consumer choice and lower the costs of some goods where producers can scale, but could raise the costs of others where there are supply constraints. Note that it is harder to distinguish *skilled migrant* effects here, unless these groups' preferences are very different from other migrant groups.

In principle, then, skilled migration may have positive or negative impacts on economic outcomes beyond the labour market. In practice, international evidence typically suggests these impacts are net positive, although their size is often small. The empirical evidence also suggests that the effects of skilled migrants in any given receiving country are likely to be conditioned by a) the size of the inflow, b) the specific sending countries, c) the sectors in which new migrants work, d) wider receiving country institutional and cultural factors, and e) historical, cultural and economic links between sending and receiving countries.

To date we also know little about the distributional consequences of the wider impacts of skilled migrants. These are likely to be complex. For instance, entrepreneurial activity by skilled migrants may make a given sector more competitive. This may stimulate some incumbent firms to innovate, while others may exit the sector. 'Native' consumers should benefit from increased competition and

choice, and the economy benefits from higher innovation (and thus productivity). However, there may be employment losses to workers in exiting incumbent firms. Further research is required to better understand how these distributional impacts play out in practice.

The evidence base on the wider impacts of skilled migration for the UK is notably thin, with only a handful of published research to date. Specifically, these studies on the UK find:

- Evidence of skilled migrant entrepreneurship, as well as suggesting some UK-specific constraints around entrepreneurial culture;
- Suggestive evidence of diaspora effects on trade and investment flows, especially for countries outside the Commonwealth where migration is linked to new trading relationships;
- Evidence of skilled migrants' contribution to innovation, both in patenting and product / process innovation within firms;
- Some evidence of a positive link from skilled migration to labour / total factor productivity, although this is small.

These studies are in line with much of the international empirical literature, which implies that net positive effects of skilled migration are to be expected - especially given the UK's recent migration experience. However, we should stress that substantially more empirical work is needed in all of these areas in order to be confident of actual impacts.

Note also that these findings apply to skilled migrants as a whole, rather than Tier 1 entrants in particular. Tier 1 entrants comprise a much smaller group of people than all skilled migrants in the UK. This implies that economic effect of the *average* Tier 1 entrant may be small; however, specific individuals may have large impacts via (for example) founding a number of new companies in the UK, or making major investments in a series of UK firms.

The statistical review - key findings

The report examines key UK datasets which may help illustrate the economic impacts of skilled migrants and Tier 1 migrants. The UK Labour Force Survey contains several key variables that may provide insight on the employment and wider impacts of skilled migrants. However, it is less straightforward to directly identify Tier 1 arrivals. Company-based datasets such as FAME (Financial Analysis Made Easy) and Companies House provides detailed information on firms' 'top teams' as well as business performance, which in theory could be linked to Tier 1 entrants to explore economic impacts of entrepreneurs and investors. 'Big Data' providers such as Growth Intel and DueDil are now beginning to combine Companies House data and other public, private and machine-learned datasets to provide even richer resources at the firm level. All of these could provide the foundations for future quantitative research.

The qualitative research - key findings

The primary research includes 20 interviews with Tier 1 entrants, plus email responses from a further 26. Case study entrepreneurs were engaged in a wide range of business sectors, including IT, publishing, manufacturing, the leisure industry, retail and consultancy. Many had already achieved success in their country of origin or elsewhere before coming to the UK. Investors were generally also successful business people, often internationally and were continuing to engage in

entrepreneurial and business activity. In practice, the distinction between entrepreneurs and investors is not clear cut, since many investors were interested in entrepreneurial activity in the UK. They had entered as investors partly to avoid the time restrictions of the entrepreneurial visa relating to business set up. The investor visa bought them time to explore business opportunities in the UK.

The UK has a number of features which are attractive to Tier 1 migrants. They include its location within European markets and to other key business and trading centres, language, time zone, ease of set up, business opportunities and support and supply of skills. Personal reasons are also important, particularly for investors. These include good schools, culture and lifestyle, the people, diversity, cosmopolitanism and acceptance, the arts, rule of law and, perhaps surprisingly, the weather. The strong emotional attachment expressed by many to the UK meant they were happy to be here and had settled in well. In terms of consumption, while some had bought properties, many found property prices very high and were reluctant to buy until they were more certain of the market. Therefore, current speculation about the effect of wealthy migrants on property prices may not accurately reflect the circumstances of many newly arrived entrepreneurs of more modest means.

The process of applying for a visa was generally found to be straightforward, but expensive. Some had initially not submitted the required documentation and had their applications rejected, entailing further expense. Where applications had not been successful this appeared to be for financial reasons, for example bank statements which were not satisfactory to the UK Border Agency. Some applicants had not taken up their visas or had returned home, citing a range of business and personal reasons. The economic recession had affected plans of a number of entrepreneurs. Therefore UK Border Agency records of visa holders are likely to over-estimate the number of active Tier 1 entrepreneurs in the UK.

While most respondents had not found difficulty meeting the requirements for the visa, our sample is clearly biased towards successful applicants. However, some entrepreneurs had experienced difficulty raising £200,000. These included young entrepreneurs setting up a business for the first time. Most respondents had not reached the point of visa renewal, but many were anticipating problems, particularly in meeting the requirement to have engaged staff. The chief concern of investors was that they will not have met the 180 day a year residence requirement because their business activities frequently take them outside the UK.

Although some aspects of setting up in business in the UK were found problematic, a number could draw on their previous business experience. The most serious problems encountered by respondents in setting up business in the UK involved banks, including simply opening a personal account. Problems were also reported with borrowing.

Those individuals who did extensive research on the potential for their businesses before coming to the UK appeared to be making more progress than those who did not. Formal business support was not widely accessed, although a number had informal networks which included fellow graduates from masters courses. Those who had received business support and advice found this valuable, with UKTI and Scottish Enterprise both highly praised.

Despite the early stage reached by many entrepreneurs, it was apparent that many were achieving some success. This included generating new products and services, recruiting staff, hiring freelance staff and consultants and contracting out production and service delivery. A number of businesses had hired highly skilled professional staff in areas such as IT and marketing and also administrative employees. A number had recruited local people and others were planning to do so.

Investment performance, which was largely Government bonds, was reported to be poor with many having reduced in value. However, this did not seem to worry the case study investors, whose principal concerns were in meeting other aspects of the renewal criteria, in particular residency requirements.

Respondents future plans largely revolved around their businesses (in the case of entrepreneurs) and wider business activities (in the case of investors). Some expressed concerns about the future business environment in the UK, particularly the prospect of disengagement from the European Union.

Implications for policy

The report identifies a number of implications for policy in relation the Tier 1 visa and for support to entrepreneurs and investors wishing to become established in the UK. These include:

- The need for greater flexibility over the minimum fund requirement of £200,000 for entrepreneurs, in order not to deter younger people setting up in business for the first time.
- The need for review of the difficulties experienced by migrant entrepreneurs with banks, both in opening personal accounts and in borrowing.
- The benefits of having greater flexibility between the entrepreneur and investor categories so as not to discourage entrepreneurial activity by investors and vice-versa.
- Business support to entrepreneurs before and after application, through coordinated working by the UK Border Agency and BIS/UKTI.
- The use of greater discretion by the UK Border Agency (with input from BIS/UKTI) over achievement of milestones during the visa renewal process, in recognition of the difficult current climate for business, relatively slow growth of some types of businesses and impact other than hiring staff.
- Re-consideration of the 180 day residency requirement, given the international business activities of many investors and review of the practice of retaining passports for lengthy periods during renewal.
- The importance of continuing to convey the UK as a place to do business to prospective entrepreneurs and investors, particularly given current uncertainty over future membership of the EU.

Introduction

The research presented in this report was commissioned by the Migration Advisory Committee (MAC) to improve the existing evidence base on the impact of highly-skilled migration on the UK Economy. The specific focus of the research is on migration into the UK of entrepreneurs and investors. It is focused on the impact of migration from outside the European Economic Area (EEA) and builds on work relating to the social, economic and public service impacts of migration previously commissioned by the MAC and outlined in its reports, including by NIESR (George et al, 2012). The report presents quantitative and qualitative evidence on migration to the UK of entrepreneurs and investors, with the qualitative research focusing on migrants who have entered the UK through the Tier 1 visa route, introduced in 2008.

The report is divided into four sections: **Section 1** summarises existing theory and evidence on the economic impacts of high-skilled immigration in receiving countries. It describes the search methodology and some key features of the literature, sets out a simple framework for thinking about the impacts of high-skilled migration on the economy and then fills out this framework, focusing on entrepreneurship and investment channels. It then summarises relevant empirical evidence, both internationally and for the UK where studies exist. **Section 2** briefly reviews pertinent UK datasets and presents some high-level descriptive analysis from the LFS and FAME datasets. **Section 3** presents the findings of case study research with Tier 1 entrepreneurs and investors. Finally, **Section 4** reflects on the findings from the three stages of the research, drawing some conclusions and implications for policy.

Annex 1 of the report summarises the literature surveyed while Annex 2 contains the topic guide used in interviews with entrepreneurs and investors.

Section 1 Evidence review

1.1 Features of the literature

This is a young field, with the vast majority of published material appearing in the last five years (especially from 2011). Our search therefore covered both published material and work in progress, focusing on the economic literature and studies looking at receiving / host country effects. Published material was sourced through search engine enquiries, trawls of relevant research centres, and trawls of Government and international agency-published research. Work in progress was found via 'snowballed' enquiries through the project team's contacts and networks.

Following discussions with the MAC we pay particular attention to entrepreneurship and investment channels. The empirical focus is on 'advanced economies' / the global North. UK studies are highlighted, and we assess other studies' implications for the UK. A complete table of usable results is included in the appendix. We have not included documents written purely from a policy or marketing perspective unless these include research. Relevant research was assessed using four criteria: 1) is there a clear account of the research process? 2) are the methods appropriate and reliable? 3) is the data of good quality? 4) are the findings credible and clearly related to the evidence? In total we covered around 150 papers, books and reports.

The literature reviewed is a mixture of quantitative and qualitative studies, drawing on large-scale data sets, surveys, case studies and in some cases historical analysis. The field focus is on economics, but we have also drawn from other relevant fields (such as geography, urban studies, business and management, entrepreneurship, innovation, and housing studies).

In the past few years, the literature shows a substantial growth in papers using **quantitative research and econometric methods** and a shift towards exploring **host country impacts beyond the labour market**. Specifically,researchers have begun to shift their attention from labour market and fiscal changes, towards exploring the wider effects of migration on productivity and growth - and the role of high-skill migrants in these processes (Chiswick, 2005, Huber et al., 2010b , Kerr and Kerr, 2011, George et al., 2012, Hanson, 2012, Lewis, 2012).

Links between **high-skilled immigration and innovation** have been a major focus of this 'wider impacts' literature to date (Kerr and Kerr, 2011). There is also increasing interest in **high-skilled entrepreneurship**, for example 'transnational entrepreneurs' and start-up founder teams (Acs and Szerb, 2007, Saxenian and Sabel, 2008, Drori et al., 2009, Honig et al., 2010). This is a shift from a long tradition of research on migrant and ethnic entrepreneurship, which has tended to focus on small business formation in non-tradeable sectors such as retail and leisure (Light, 1984, Rath and Kloosterman, 2000, Kloosterman and Rath, 2001, Ram and Jones, 2008).

Similarly, research looking at the connections between **migration, trade and investment flows** is increasingly focused on specific high-skill diasporic communities as enablers of market access (Hanson, 2012). Other research has looked at impacts on the **prices of housing and other local goods/services**, although these studies are rather less common.

Finally, there has also been a growing interest in local level effects, with geographers, economists and others exploring how migration is influencing **city life and urban economies** (Card, 2010, Smallbone et al., 2010, Syrett and Sepulveda, 2011, Nathan, 2012).

1.2 The economic impacts of skilled migration: a simple framework

Analysis of the economic impacts of migration has tended to concentrate on labour market or fiscal impacts (Kerr and Kerr, 2011). These analyses typically feature neoclassical settings, where migrants have single roles (workers or consumers of public services), and modelling is restricted to one-off shocks and adjustment periods (Borjas and Doran, 2012a).

This approach ignores or underplays several wider economic impacts of migration, especially for skilled migrants. We adapt Chiswick (2005) Huber et al (2010a) and Hanson (2012) to contrast a **static, labour demand-and-supply setting** with a **dynamic growth setting**.

First, consider the static **'labour markets' setting**. In a given host country, a set number of firms' productivity is determined by labour costs, plus fixed technological capacity and trade costs. Migrants enter the country solely as workers, and are perfect substitutes with natives. In this model, skilled migration has limited economic impacts. In small open economies (such as the UK) a net migration shock will increase the labour supply, and temporarily bids down the average native wages. If wages are sticky, native employment may also fall. Over time, natives' wages and employment rates should readjust to their pre-shock levels via international capital flows, and the expansion of labour-intensive sectors (Card, 2005, Dustmann et al., 2008). If the migration shock consists of (un)skilled workers, this will depress the relative wages of (un)skilled natives, and raise those of (higher) lower-skilled natives. For firms, migration helps labour productivity by cutting labour costs. But migration has no wider effects, as other productivity shifters are exogenous.

Next, consider a **dynamic 'growth' setting**. Here, firms can change their labour costs, and their innovative capacity and trading environment. Endogenous growth models show how human capital helps generate new ideas, which advance the technological frontier and feed into productivity gains (Lucas, 1988, Romer, 1990). Firms that invest in research and development can thus build innovative capacity and raise productivity, but may face informational / financial constraints in doing so. Trade costs are now partly determined by information asymmetries and co-ordination problems, and firms that can lower these will raise productivity (and subsequently gain market share) (McCann and Acs, 2011, Hanson, 2012). Existing firms also face competition from entrepreneurs, who create businesses around new ideas (Schumpeter, 1962, Aghion et al., 2009).

In this setting, skilled immigration - in particular - has several impacts on both the production and consumption sides of the economy. For example, access to knowledge and ideas may be highly uneven, national entrepreneurial 'capacity' may vary, and features of innovation ecosystems may constrain ideas diffusion (Acs et al., 2004, Agrawal et al., 2008). This opens up space for skilled / entrepreneurial individuals to contribute to knowledge generation, and for international networks to help diffuse innovations across space. Equally, complex global production chains imply high search, transaction and management costs (Mudambi, 2008). Intermediary actors - such as skilled migrants - may help firms access new markets, and co-ordinate complex business activities (Saxenian and

Sabel, 2008). Similarly, production complementarities between skilled migrants and natives may raise the return on capital, and in doing so, generate higher savings and FDI inflows (Chiswick, 2005, Peri and Sparber, 2011). All of these channels will contribute to productivity and/or competitiveness, in the sense of increased market share for firms in the receiving country (Hanson, 2012).

These channels require relaxing some assumptions from the static framework (Huber et al., 2010a). Specifically, migrants can act as entrepreneurs and investors as well as workers; migrants have financial, social and network capital, as well as human capital; and migrants and natives can be imperfect substitutes.[1]

When thinking about these issues it is useful to think of 'production' and 'consumption' side impacts (Nathan, 2012). **Production-side** channels impact productivity and its drivers, and may operate at various levels. First, individual migrant status may pre-select entrepreneurial individuals, who contribute to new business formation and/or uncover new market niches (Bonacich, 1973, Honig et al., 2010); or very high human capital 'stars' who contribute to innovate (Borjas, 1987, Zucker and Darby, 2007). Individual high net worth entrants may also be able to ease domestic firms' capital constraints.

Second, firms hiring a 'star' researcher or scientist may be able to significantly raise their productivity - at the expense of other firms (Hanson, 2012). More broadly, diverse workforces may have an advantage in generating innovative ideas, particularly in high-skill, knowledge-intensive sectors (Fujita and Weber, 2003, Page, 2007, Nathan and Lee, Forthcoming). Firms in high-value sectors may further benefit from skilled migrants' access to co-ethnic networks, which may assist knowledge diffusion, or lower co-ordination costs and thus improve international market access (Kapur and McHale, 2005, Saxenian, 2006, Saxenian and Sabel, 2008, Foley and Kerr, 2011).

Third, we may see indirect / spillover effects at sector or market level. Migrant entrepreneurs may spur competition in domestic markets, forcing incumbents to innovate and raise their productivity (Aghion et al., 2012). Diversity and diaspora externalities within specific firms may also assist *all* firms' innovation, via further knowledge spillovers across sectors (Jacobs, 1969, Jaffe, 1996). Similarly, activities of migrant entrepreneurs and investors, and changes in specific firms' market access, may shift overall patterns of trade and FDI between home and host countries (Docquier and Rapoport, 2012).

On the **consumption side**, impacts of *skilled* migration are harder to distinguish. At a local level, high levels of net migration may raise the level of demand for non-tradeable goods, and/or change patterns of demand in these sectors (Mazzolari and Neumark, 2012). Migration may also increase competition for goods with inelastic supply such as housing, raising local prices. (Saiz, 2003, Ottaviano and Peri, 2006).

[1] There is strong empirical evidence for the last of these, particularly for skilled migrants. See e.g. MANACORDA, M., MANNING, A. & WADSWORTH, J. 2012. The Impact of Immigration on the Structure of Male Wages: Theory and Evidence from Britain. *Journal of the European Economic Association,* 10**,** 120-151. for the UK or for the US, PERI, G. & SPARBER, C. 2011. Highly Educated Immigrants and Native Occupational Choice. *Industrial Relations,* 50**,** 385-411.

1.3 Impacts channels for skilled migration: theory

This section sets out production side and consumption side impact channels of skilled migrants in more detail, focusing on entrepreneurship and investment channels.

Entrepreneurship

There is an established **'ethnic entrepreneurs'** literature linking migrant and minority communities to self-employment, entrepreneurial activity and small business formation. Migrant and minority ethnic communities have a generally higher propensity to be self-employed (Light, 1984, Baycan-Levent and Nijkamp, 2009). Levels of enterprise are influenced by access to opportunities, individual and group characteristics (such as ethnic and class 'resources'), and emergent strategies (Aldrich and Waldinger, 1990). Urban location may help ethnic enterprise because of urban demography (larger downstream markets) and/or greater economic opportunities (greater matching, sharing and learning economies) (Light, 2004, Kloosterman and Rath, 2001).

Ethnic entrepreneurship may be **reactive**: exclusion from mainstream economic life may force groups into developing new businesses, products and services (Kloosterman and Rath, 2001). Conversely, community characteristics and attitudes may drive **proactive** entrepreneurship. For example, 'middleman minority' [sic] status may help individuals create business opportunities between social groups (Bonacich, 1973). Alternatively, entrepreneurs may benefit from externalities of migrant enclaves, such as better access to information or finance (Edin et al., 2003).

This literature is not concerned with human capital per se: individual migrant entrepreneurs may be highly skilled individuals, or low-skilled actors entering sectors with low entry barriers (Sepulveda et al., 2011). A more recent set of studies focus more closely on skilled migrants, and identifies two further channels. The migration decision involves balancing risks against expected future returns, so **migration may positively select highly skilled and/or highly entrepreneurial individuals** (Borjas, 1987). Migrants also face a lower opportunity cost of investing in new skills or ways of working, so migrants may be more flexible economic actors - for example, more willing to engage in disruptive business models (Duleep et al., 2012). Skill-biased migration policies will then help to bring in highly skilled and/or entrepreneurial 'stars' into host economies.

In closed economies, externalities from co-ethnic enclaves or groups may be limited by group size or external constraints (see below). However, under globalisation, **transnational diasporic groups** may provide an important source of social and cultural capital (Docquier and Rapoport, 2012). Equally, highly skilled and motivated transnational entrepreneurs can set up new enterprises in a number of locations, or act as go-betweens between domestic firms and those in 'home' countries (Kloosterman and Rath, 2003, Saxenian, 2006, Zhou, 2004, Drori et al., 2009, Honig et al., 2010).

In theory, all four of these channels may be **constrained**. First, apparent effects of skilled migrant / minority status may simply collapse to individual human capital endowments, or wider structural conditions (Hunt and Gauthier-Loiselle, 2010). Second, discrimination may limit opportunities for business creation, even in reactive contexts; and may limit opportunities for middleman-type arbitrage. Third, in closed economy settings, enclave externalities may also be limited by size (the smaller the group, the smaller the set of within-group matches (Zenou, 2011)). Finally,

disapora/enclave affordances may be weaker than other factors (such as class or family ties); and some trans-national communities may be more organised and effective than others.

The main effect of migration-entrepreneurship channels will be on levels of business creation. There may also be **wider impacts**. First, new firm entry increases market competition, and may stimulate incumbent firms to innovate in response (Aghion et al., 2005). Second, net firm entry itself accounts for a large share of national productivity growth, so higher levels of entrepreneurship may be short-term productivity-enhancing (Lewis, 2012).

The literature does not discuss **distributional impacts** of skilled migrant entrepreneurship, but we can sketch out some issues here. One key point is whether new migrant businesses add to or displace existing firms. To the extent that (skilled) migrants identify new opportunities, the net effect is likely to be additional; however, to the extent that new opportunities are also disruptive, additionality is limited. More broadly, the *process* of firm entry may be welfare-enhancing for consumers, if entrants stimulate stronger incumbents to innovate and weaker firms to exit (Aghion et al., 2005). However, this incurs welfare losses for owners and staff in lagging domestic firms.

Investment

Skilled migrants may play a number of investment-related roles, both at the level of individual firms and in terms of higher-level patterns of trade and FDI. However, while trade and FDI mechanisms are relatively well covered in the literature, individual-level channels are much less discussed.

Migrants who are high net-worth individuals, and who enter a host economy as investors should be able to **ease capital constraints** for domestic firms. Related to this, **investment may trigger knowledge spillovers between investors and recipients**: skilled investors who have sector-specific expertise may also have impacts on recipient firms' innovation and productivity (Markusen and Venables, 1999, Markusen and Trofimenko, 2009, Malchow-Møller et al., 2011, Giannetti et al., 2012).[2]

Over time, migration may alter the **level and pattern of trade and foreign direct investment (FDI) flows** between host and home countries. Incomplete information creates trade frictions: migrants bring improved international market knowledge, leading to better matching of buyers and sellers (Rauch and Trindade, 2002, Rauch and Casella, 2003, Peri and Requena, 2010). Diasporic /co-ethnic networks also raise trust, providing effective means of contract management and enforcement (Javorcik et al., 2011). Alongside these **'information channels'**, migrants also create a **'preference channel'**, by demanding goods from the home country (Combes et al., 2005).

The size of trade effects with a given sending country will partly depend on the size of migrant community in the receiving country. Skilled migrants may also play particularly important roles in these channels: skilled migrants are likely to have both better information on business opportunities, better social capital and professional networks (Kugler and Rapoport, 2007, Saxenian and Sabel, 2008, Docquier and Lodigiani, 2010, Mundra, 2012).

[2] By contrast, low-skill migration may act as a substitute for investment in physical capital (see 4.5).

As with trade flows and FDI inflows, skilled migrants can also provide domestic investors with additional information on 'home' market investment opportunities, reducing transaction costs (LeBlang, 2011, Pandya and Leblang, 2012). Skilled migration may thus help reduce **equity home bias** (Foad, 2011). Similarly, skilled migrants may provide matching and brokering functions that help **multinational firms** develop and manage overseas investments (Foley and Kerr, 2011).

As with the entrepreneurship channel, there are a number of potential **constraints** on these channels, sothat skilled migration is *a priori* ambiguous in its effects on investment. First, discrimination from majority groups may limit migrant investor entry, or investment opportunities in host markets. Second, it is important to disentangle co-ethnic networks from other socio-cultural resources that skilled / well-off individuals may possess. Third, some migrants may more valuable than others - those from countries where strong trade links already exist may bring little or no additional advantage (Girma and Yu, 2002). Finally, theoretical frameworks are often silent about *how* domestic firms interact with migrant investors, or access the diasporic communities that may influence trade and investment flows.

Innovation

Innovation is 'the successful exploitation of new ideas' (Department of Innovation Universities and Skills, 2008), and involves both ideas generation and commercialisation (Fagerberg, 2005). In turn, this suggests a number of ways in which skilled migrants might influence innovative activity.

First, as in the entrepreneurship channel, the **migration decision might positively select high-skilled 'stars'** (Borjas, 1987). Entry may be via skilled migration policies or via higher education, especially into postgraduate courses (Chellaraj et al., 2008, Stuen et al., 2012) and faculty research positions (Hunt, 2011). Research-intensive fields such as science and engineering are particularly relevant for these star-innovation channels (Stephan and Levin, 2001). Star scientists have a disproportionate impact on knowledge creation, by raising research grants and engaging in multiple collaborations, especially with other stars (Zucker and Darby, 2007).

Second, at firm level, the **ethnic / cultural diversity of teams may generate externalities** that contribute to knowledge creation. Specifically, diverse teams may be more effective than homogenous teams in problem-solving or generating new ideas, as they leverage a wider pool of perspectives and skills (Berliant and Fujita, 2009, Page, 2007). These dynamics may be particularly important in research-based or knowledge-intensive activities (Fujita and Weber, 2003).

Third, **diasporic networks may contribute to knowledge diffusion**, in similar ways to their potential effects on entrepreneurship, trade and FDI flows. Networks reduce information and communication costs as knowledge is exchanged through groups with greater mutual understanding and trust; they may also aid knowledge spillovers by stimulating citations and ideas recombination through the network structure (Jaffe and Trajtenberg, 2002, Kerr, 2008, Docquier and Rapoport, 2012).

Skilled migration may also have **wider, indirect effects** on innovation. As above, if migrant entrepreneurship leads to significant new firm entry, this may lead incumbents to innovate. . Within-sector spillovers may also trigger wider spillovers *between* sectors, particularly in urban

environments (Jacobs, 1969, Duranton and Puga, 2001). Knowledge spillovers tend to be highly localised (Jaffe et al., 1993, Audretsch and Feldman, 1996). This suggests that at least some immigration-innovation effects may be **spatially clustered**, and largest in urban areas or research-rich locales (such as university towns). But diaspora channels will be much less distance-sensitive.

Against this, there are reasons why migration-innovation channels may be **limited**. A diverse team may find it harder to communicate, and levels of trust may also be lower (Alesina and Ferrara, 2005). Diverse organisations may also face discrimination from other market actors. As a result, organisations may find it harder to make decisions or allocate resources, and the quality of those decisions may be lower than in more homogenous organisations. Similarly, if knowledge flows only within diasporic communities, this will limit the scope of knowledge spillovers.

Borjas and Doran (2012a, 2012b) also suggest that **innovation-related externalities can co-exist with distributional losses** for some groups. For example, if research jobs and lab space is limited, migrant inventors may compete with native inventors for these resources. Even if there are gains from individual stars, networks or group-level diversity, some 'losers' may need to shift field ('cognitive mobility') or exit into less-skilled activity ('bumping down').[3]

Other production-side channels

Two other production-side channels are less well covered, but are worth mentioning briefly here.

First, if firms' production functions are endogenous to changes in the labour supply, then employers may react to immigration by making **changes to production technology**. Lewis (2011) sets out a model in which low-skilled migrants are substitutes for capital investment. Migration-induced labour supply shocks then induce firms to develop more labour-intensive production techniques. This smoothes any negative wage impacts of low skill migrants, but may constrain longer-term gains in firms' TFP via capital upgrading. Conversely, high-skilled labour may be complementary to capital investment - for example, skilled researchers may complement lab equipment for scientific research. This suggests an additional channel for high-skill migration may induce TFP gains on top of those already discussed above (Paserman, 2008, Kangasniemi et al., 2012, Peri, 2012).

A second source of TFP gains is production complementarities via increased **task specialisation**. If migrants and natives are imperfect substitutes, then high-skill migration may induce both skill groups to shift tasks in a team or workforce setting (Peri and Sparber, 2011, Lewis, 2012). In this case, skilled migration may lead to 'cognitive mobility' by individual native workers (see section 4.4) but human capital spillovers and TFP gains at the firm level.

Consumption side

Impacts of migration on the consumption side largely focus on fiscal impacts, (see Card (2010) and Kerr and Kerr (2011) for reviews). Here, we briefly review how skilled migration might influence prices, the variety of goods and services, and public service usage.

[3] Note that while cognitive mobility may be welfare bad for movers in the short term, movers may gain long term (in the case of Borjas and Doran's study, many movers leave academia to work in hedge funds).

Prices

In theory, migration has an ambiguous effect on the prices of goods and services (Frattini, 2008). Migration might lower production costs through cheaper labour and/or production externalities, particularly in labour-intensive sectors (Cortes, 2008, Baghdadi and Jansen, 2010). In turn, this should lower the prices of goods and services in those sectors. However, migration also increases population size and so raises the level of consumer demand. These 'scale effects' are likely to be biggest for non-tradeable sectors (Mazzolari and Neumark, 2012). If inflows are large enough to facilitate economies of scale in production, prices may fall. Alternatively, if goods are inelastically supplied, such as housing, migration may lead to higher prices (Saiz, 2003, Saiz, 2007).

The supply-side effect of *skilled* migrants on prices is harder to determine. The general migrant population may cluster in labour-intensive sectors - predominantly non-tradeables - helping to lower production costs, wages and prices in those sectors (Cortes, 2008). However, skilled migrant entrepreneurs and investors likely operate mainly in higher-value, tradeable sectors where local conditions matter less. This suggests that supply-side impacts on prices are likely to be limited.

Demand-side impacts of migrants on goods such as housing will depend on a) the size of the inflow b) migrant preferences and behaviour c) producer response d) native response. In the short term, migrants and natives compete for a fixed stock of housing, increasing costs. In the longer term, developers respond by building more, offsetting these price movements (Saiz, 2007, Card, 2010). Migrant/native preferences may also differ. Migrants may be most likely to rent, at least in the short term, so impacts on house prices may be limited for these reasons. Within cities, house prices and rents may also be affected by native response - for example, if natives leave areas where migrants live, so that net population falls, this will likely put downward pressure on prices and rents in those areas (Saiz, 2011, Saiz and Wachter, 2011). Higher overall demand at area level may then be combined with by greater price variation and increased segregation within that area. Again, it is not straightforward to identify specific impacts of skilled migrants: poorer /less-skilled migrants are more likely to share properties, and so consume less housing than natives. Higher-skilled migrants might then consume similar quantities of housing to natives.

Mix / variety

If migrants have different preferences to natives, this will generate 'composition effects' on the set of goods and services provided (Mazzolari and Neumark, 2012). Mazzolari and Neumark also suggest that migrants may have comparative advantage in production on 'ethnic' goods, through specific knowledge and/or entrepreneurial skills. In this scenario, migration leads to both greater variety and higher migrant business entry: we would expect skilled migrant entrepreneurs to play an important role in these channels. A native population with a taste for diversity may also support these composition effects (Florida, 2002, Gordon et al., 2007). Conversely, if migrant inflows are large and lead to substantial increases in demand, this may trigger production-side economies of scale which lead to producer consolidation (Mazzolari and Neumark, 2012). In this case, the variety of goods and services may rise but the variety of *producers* shrinks (for example, if small shops are replaced by supermarkets).

Public services

Public service impacts of migration can be framed similarly to private goods and services, with the critical difference that production cost shifts and resource competition will not be reflected in user prices, but forms of non-price rationing. Migration 'shocks' which change population composition may also lead to short term mismatches between user demand and services offered, while in the longer term producers respond by switching the service mix (e.g. in schools, greater support for ESOL provision). Again, the key issue is whether skilled migrants have distinctive preferences and patterns of use. We speculate that some high-skilled (and better-off) migrants might be *less* likely than natives to use public services. But ultimately this is an empirical question.

1.4 Empirics

Entrepreneurship

The international evidence – mainly from the US – highlights the importance of large and skilled diasporic communities in influencing firm formation in host countries.

First, a number of case studies trace links between US-based diasporas and transnational entrepreneurs and 'home' countries such as India, China, Taiwan, Ireland and Israel (Kapur and McHale, 2005, Saxenian, 2006, Saxenian and Sabel, 2008). These studies typically find positive links between diaspora presence, US firm formation, and a range of wider benefits to US firms (discussed further in sections 5.2 and 5.3).

Second, structured surveys examine high-skill communities in the US. Saxenian (2002) finds that that skilled migrants make up 1/3 of the Bay Area's engineers, with two-thirds born in Asia and three quarters of these from China and India. In 1998, Chinese and Indian engineers were senior executives at one quarter of Silicon Valley's technology businesses; these immigrant-run companies collectively accounted for more than $26.8 billion in sales and 58,282 jobs. Anderson and Platzer (2007) find that migrants have started 25% of US VC-backed public companies, and 40% of VC-backed technology firms. Wadhwa et al (2008) find that both immigrant firm founders tend to have both advanced STEM education and 'high rates of entrepreneurship and innovation' – although the same is also true of US-born founders. Working with a sample of 1300 'high-impact' technology firms and 2000 founders across the US, Hart and Acs (2011) find around 16% of firms have at least one immigrant founder; over three quarters of these are now US citizens.

Third, some US econometric studies try to identify a 'skilled migrant' effect at individual or firm level. Hunt (2011, 2013) performs a number of individual-level analyses on skilled migrants. Looking at the 2003 US National College Survey, she finds that immigrants are more likely to start companies than similar natives, and those who entered on a student/trainee or a temporary work visa have a large advantage over natives in wages, patenting, and publishing. Much of this is explained by immigrants' higher education and field of study. Analysis of the 2009 and 2010 American Community Surveys suggests that 'immigrants from the highest income countries are the best and brightest workers.' Hart and Acs (2011) perform ANOVA on their 'high-impact' firms sample, finding similar levels of economic and technological performance between firms with migrant founders and those without. Immigrant-founded firms are more likely to report that they have a strategic relationship with a foreign firm. Kerr (2008) develops this idea in more detail, finding causal links from high-tech ethnic

entrepreneurs to higher manufacturing output in foreign countries, especially China. In calibration exercises, Duleep et al (2012) find positive links from skilled migrants to job creation, business entry and immigration across US sectors and the US workforce.

Other relevant studies suggest salient differences between migrant groups and national contexts. Schuetze and Antecol (2007) use a Borjas-type model to look at self-employment among new migrants in Australia and Canada. They find self-employment rates for a given cohort typically catch natives within 10-20 years of arrival. Institutional and market structure factors are the most substantial determinants, although policy differences play a role at the margin. Georgarakos and Tatsirimos (2009) suggest that Mexican and other Hispanic immigrants to the US tend to move into entrepreneurship from unemployment or inactivity. Guerra and Patuelli (2011) find significant spatial network externalities between migrant entrepreneurs in Swiss municipalities, and some urban-rural differences. For Denmark, Marino et al (2012) find that workforce ethnic diversity leads to entrepreneurship in financial and business services.

Implications and evidence for the UK

What do these results imply for the UK? They suggest that the presence of large, skilled diasporas is likely to have positive effects on levels of entrepreneurship (and on other economic outcomes we care about). Non-EEA migrant communities – such as entrants from India, China and other south/east Asian countries – may be particularly important players as they are in the US, with other sending countries much less prominent contributors of skilled people. Notably, migrant entrepreneurs enter through the migration system but also through higher education.

However, there are specific features of the US experience that may not transfer to the UK: in particular, the importance of Cold War defence funding in generating a critical mass of science and engineering activity, US global leadership in a large number of technology/research fields, and the perception of an enterprise-friendly culture in the States. In skilled sectors where the UK has some comparative advantage – for instance, parts of the creative and digital economy, as well as some parts of science and engineering – there may be more of a gravitational pull for skilled migrants. We might also expect to see spatially concentrated inflows to centres of research excellence, and to cities with the biggest market opportunities. (Given current economic conditions in some southern European countries, we might expect similar skilled inflows from within the EEA.)

The available UK evidence bears out some of these points. Levie (2007) uses data from the GEM survey to look at individual-level determinants of entrepreneurship in the UK. OLS regressions show migrant status increases the odds of entrepreneurial activity, but that minority ethnic status only has a marginal effect. Working with a repeat cross-section of London firms, Nathan and Lee (Forthcoming) find suggestive evidence linking migrant status to proactive entrepreneurship.

Other studies suggest that UK-specific cultural factors may constrain the impact of migrant entrepreneurs. Godley (2001) is a historical analysis comparing Jewish immigrants in London and New York. He finds that the latter group were more likely to move into entrepreneurial occupations, a fact he ascribes to differences in the two cities' cultures – and specifically a 'relatively anti-entrepreneurial culture' in London. Along similar lines, Fairlie et al (2012) compare economic outcomes for skilled Indian-origin communities in latter-day UK, Canada and the US, using OLS

regressions on Census data. They find that Indian entrepreneurs in the US have above-average business incomes; around 50% of the difference is explained by education, and around 10% by differences in industry choice. By contrast, Indian-origin entrepreneurs in the UK and Canada are less well-educated, have lower than average incomes but are more likely to hire employees.

There is also a long-standing UK empirical literature on 'ethnic entrepreneurship', largely small-scale / explorative case studies (Basu, 1998, Basu and Goswami, 1999, Clark and Drinkwater, 2000, Basu, 2002, Ruef et al., 2003, Basu, 2004, Jamal, 2005, Altinay and Altinay, 2008, McEvoy and Hafeez, 2009, Clark and Drinkwater, 2010 , Crick and Chaudhry, 2010, Wang, 2010, Wang and Altinay, 2012). The most relevant points emerging from this literature are: migrant status / ethnicity is important to entrepreneurial outcomes; it is hard to disentangle from intervening factors, such as class, education, financial resources, strengths of networks; and there are substantial differences between migrant communities / co-ethnic groups' resources, and thus in their levels of entrepreneurial activity.

Investment

There is now a substantial empirical literature on skilled migrants, investment and trade. These tend to focus on cross-country analyses of aggregate trade and FDI flows. There are fewer studies looking at the individual/group level, and nothing that we are aware of on individuals' investment decisions.

Three main findings emerge from the international empirics. First, several studies suggest that international investors pass on knowledge and expertise to firms they are involved with. For instance, Markusen and Trofimenko (2009) use plant-level data from Colombia to show significant learning externalities from foreign trainers to local workers, which raise native wages and value-added. Similarly, Malchow-Møller (2011) et al use a diff-in-diff strategy to show that Danish firms which hired foreign experts became more productive and increased their exports of goods and services. Giannetti et al (2012) look at firms in China who hire directors with foreign experience (returning migrants). They show that firms with such directors have higher valuation, productivity and profitability; better corporate governance; and higher levels of international market activity. Nielsen (2010) looks at demographic diversity in founding teams for US technology start-ups, showing a correlation between diversity and subsequent foreign market entry (and after that, higher levels of business performance). Many technology sector investors, especially in the US are former serial entrepreneurs who bring both financial and human capital to their portfolios (Kerr et al., 2010).

These knowledge spillovers may also operate inside large firms. Foley and Kerr (2011) suggest that skilled migrants working in multinationals help those firms expand and co-ordinate investment activity in their native countries. Using data for 645 US MNEs in 45 countries, they show that increases in 'ethnic patenting' are linked to rising shares of affiliate activity in the relevant sending countries, helping those firms become more competitive.

Second, skilled migrant presence changes the balance of VC funding and equity holdings, much of which will be driven by individual investor decisions. Leblang (2011) and Pandya and Leblang (2012) focus on venture capital investments. Using cross-sectional data, they show significant associations between diaspora network presence and the level of VC flows from US investors. They suggest these

results derive both from US-based migrants, and from diaspora members advising US VC firms about opportunities in sending countries. Similarly Foad (2011) looks at equity holdings data for 28 countries between 1997 and 2004. Using a gravity model and instruments, he shows that immigration helps increase foreign equity holdings and reduced home bias. The effects are strongest within the Eurozone, and disappear for less developed countries. Foad argues that reduced home bias in equity positions represents a substantial welfare gain, reducing risk and improving matching.

Third, and, building on the seminal paper by Rauch and Trindade (2002), a number of studies show positive effects of skilled migrants on trade and FDI flows, especially for differentiated goods. For instance, Egger et al (2012) use a quasi-experimental approach for 100 countries between 1991 and 2000, showing that highly concentrated skilled (or unskilled) migrants induce higher trade flows – particularly for differentiated goods. Mundra (2012) focuses on immigrant occupational structure, finding that higher shares of migrants in professional occupations significantly increases trade flows between the US and trading partner countries – particularly for differentiated goods. Peri and Requena (2010) focus on trade for Spanish provinces, 1995-2008, finding that immigration significantly raises trade – particularly for differentiated goods and for countries culturally distant from Spain. A related cluster of empirical studies look at FDI flows: Kugler and Rapoport (2007) show that skilled migration from a country helps raise future FDI inflows to that country, and suggest that skilled migrants and FDI flows are complementary trade components (while unskilled migrants are substitutes for FDI). Docquier and Lodigiani (2010) and Javorcik et al (2011) also show strong network externalities from large skilled diasporas on FDI inflows to sending countries.

Implications and evidence for the UK

The size and scope of the international evidence suggests that we should expect similar impacts on both individual investment decisions and wider trade/FDI flows from skilled migrant presence in the UK. In the first case, policies such as the Tier 1 (investor) programme could be expected to trigger knowledge spillovers a) from investors to portfolio firms, and b) from investors to investors, the latter showing up in patterns of VC finance and equity holdings.

The available evidence also implies that *aggregate* effects will be strongest for skilled migrant communities from countries where few or no trade relationships exist (and where information gaps are greatest), and weakest for sending countries where there are strong existing connections (and thus fewer gains to trade). In this sense, investment channels differ from entrepreneurship / innovation channels, where *existing* diasporic / co-ethnic connections generate the effects.

Three UK studies provide some evidence for this. Parsons (2005) projects the impact of A8 migration on EU-15 trade flows, suggesting that accession will increase imports from accession countries by 1.4% and exports by 1.5%. Di Simone and Machin (2012) find some evidence of diaspora externalities, with a significant correlation between migrant stocks and trade activities in respective sending countries. Girma and Yu (2002) compare trade effects of migration to the UK from Commonwealth and non-Commonwealth countries. They find that non-Commonwealth migration has a significant export-enhancing effect in the UK, but there is no effect from Commonwealth country migrants. They suggest that this is because non-Commonwealth migrants bring new information to UK economic actors, reducing the costs of trade, whereas UK-Commonwealth trade patterns are already well established.

Innovation

There are now a number of empirical studies linking skilled migrants, migrant/minority communities and innovation, particularly from the US. European and UK studies are thinner on the ground.

First, a number of studies link high-skill migrants – including students – to knowledge creation. Stephan and Levin (2001), Chelleraj et al (2008) and Wadhwa et al (2008) highlight the contributions of Indo and Chinese-American scientists to US science, particularly foreign graduate students; Kerr and Lincoln (2010) identify links from skilled migrant entry to patenting by ethnic Indian and Chinese inventors; Stuen et al (2012) identify causal links between foreign PHD presence and subsequent highly-cited publications. However, Hunt (2011) and Hunt and Gauthier-Loiselle (2010) find that individual 'migrant effects' are largely explained by education and industry hiring patterns.

More broadly, some area-level studies find links between skilled migrant presence and innovation, for example Peri (2007) and Hunt and Gauthier-Loiselle (2010) in the US, Ozgen et al (2012) for EU regions, or Niebuhr (2010) for German regions, the latter two using patent data.

Second, there are strong empirical links from co-ethnic communities to knowledge diffusion (see Docquier and Rappoport (2012) for a recent review of the empirical literature). Many of the entrepreneurship case studies discussed previously also trace links between US-based diasporas and innovation 'home' countries such as India, China, Taiwan, Ireland and Israel (Kapur and McHale, 2005, Saxenian, 2006, Saxenian and Sabel, 2008). Quantitative studies also identify links between co-ethnic communities and industrial performance in home countries (Kerr, 2008), as well as the spread of 'breakthrough technologies' in US cities (Kerr, 2010). Scellato et al (2012) find strong associations between the presence of internationally mobile researchers and the quality and scope of networks across the US and Europe. By contrast, Agrawal et al (2008) find that physical location is up to four times more important for knowledge diffusion than co-ethnic connections.

Third, there is some tentative evidence of diversity-innovation links. There is a large management literature testing small-sample correlations between aspects of diversity and business performance (see Page (2007) for a review). A handful of quantitative studies link ethnic diversity and innovation at group or workforce level. Some of these find correlations (Ostergaard et al., 2011) or causal links between team composition and product or process innovation (Ozgen et al., 2011, Parrotta et al., 2011). Others find no such connections (Maré et al., 2011). A related study is Hoogendoorn and Van Praag (2012), which uses experimental evidence from Dutch students to show a positive effect of ethnic diversity on team performance. A couple of area-level studies also identify links between skilled migrant diversity and innovation, for example Ozgen et al (2012) for EU regions.

<u>Implications and evidence for the UK</u>

Again, the scope of the international evidence suggests that skilled migration should induce some of these innovation effects in the UK. As with the entrepreneurship literature, the US experience implies that HE is an important entry point for skilled migrants who go on to innovate, both for faculty and the much larger numbers of research / postgraduates. Resulting diasporic communities are likely to help knowledge diffusion into and out of the UK; more diverse workforces and communities – particularly research communities – may also accelerate knowledge generation.

There is now some suggestive UK evidence for all three channels. Gagliardi (2011) looks at connections between the migrant workforce and firm-level innovation in UK TTWAs, using a shift-share instrument to identify causal effects. She finds significant positive effects from the share of skilled migrants to firm-level innovation, although the exact transmission mechanisms from area-level workforce characteristics to firm-level outcomes are not clear.

Three other studies look at co-ethnicity and diversity channels, although neither is able to precisely identify skilled migrant effects. Nathan (2011a) looks at minority ethnic inventors in the UK, using a name-classification system to identify ethnicity from patents microdata. Building a panel of inventor activity between 1993 and 2004, and controlling for inventor-level characteristics, he finds that the diversity of inventor communities helps raise the level of individual patenting activity. He also finds suggestive evidence that high-patenting minority ethnic inventors, particularly East Asian 'stars', drive up overall patenting rates. He finds no hard evidence that ethnic inventors crowd out patenting by majority groups.

Nathan and Lee (Forthcoming) look at migrant entrepreneurs and top-team diversity in London firms, using a repeat cross-sectional dataset and a series of robustness checks. They find that companies with diverse management are more likely to introduce new product innovations than those that are not. Top team diversity also influences sales orientation, and is particularly important for reaching international markets and serving London's cosmopolitan population. Nathan (2013) extends the analysis across England and Wales, finding positive links between top team diversity and process innovation.

Other productivity studies

A number of international empirical studies directly test links between migration and productivity at firm, city and country-level, without identifying specific channels. These studies typically suggest externalities from high-skilled migrants to firm-level productivity, especially in skill-intensive environments. For example, Paserman (2008) looks at Israeli manufacturing firms in the 1990s, a period of high immigration from the former Soviet Union. He finds negative associations between immigrant share and productivity in low-tech sectors, but positive links for high-technology industries suggestive of production complementarities. For New Zealand, Maré (2011) finds positive links between local area migrant share and productivity in firms, but does not establish a causal relationship. Parotta et al (2010) and Trax et al (2012) both identify causal effects, using instruments and GMM estimation respectively. The former find that ethnic diversity helps raise TFP in Danish firms operating in trade-intensive sectors, suggesting that diaspora externalities may explain the link. The latter find strong spillover effects from workforce diversity (measured by nationality) to firm-level productivity. They also find spillovers from diverse firms to other firms in the area, raising area-level productivity.

At the area level, Ottaviano and Peri (2006) and Peri (2012) look at links between migration and productivity for US cities and states. Using an area-level panel with a shift-share IV, Ottaviano and Peri find that skilled migrants help raise urban-level productivity. Peri finds a strong positive association between immigration and state-level TFP, and explains one third to one half of this link

through increased task specialisation by native workers.[4] Working at cross-country level, Ortega and Peri (2012) use a panel of 147 countries to show that openness to immigration increases long-run income per head, with the main effect operating through a rise in receiving country TFP.

Implications and evidence for the UK

These studies provide further evidence for the productivity-enhancing effects of skilled migration, and add to the likelihood that these effects are operating in the UK. However, they are limited to the extent that they do not identify specific channels of impact. They also say little about subsequent effects on employment: although if productivity gains allow firms to expand outputs, this should also raise firms' headcounts.

Parallel UK evidence emphasises the importance of migrant human capital. Nathan (2011b) finds weak positive links between skilled migration and urban-level productivity, as proxied by wage changes in a panel of TTWAs between 1994 and 2008. Migration is instrumented with a shift-share. Kangasniemi et al (2012) compare labour productivity growth in Spain and the UK, using growth accounting techniques and a production function estimated via GMM. Growth accounting results suggest that migration has made a negative contribution to labour productivity in Spain and a 'negligible' contribution in the UK, with the difference explained by the UK's higher share of skilled migrants. Production function estimates suggest a positive long-term effect of migrants on TFP in the UK and a negative effect in Spain, explained by human capital differences and more successful assimilation policies in the UK.

Consumption side studies

International evidence tends to focus on migrant communities as a whole (rather than skilled migrants), with a particular interest in prices (especially housing). For instance, Cortes (2008) and Baghdadi and Jensen (2010) use instruments to explore the impact of US migration on prices. Cortes finds a 10% increase in the share of low-skilled migrants decreases the price of labour-intensive services by 2%, largely through lowering the cost of labour. Baghdadi and Jensen find similar reductions in prices for non-tradeable services, although the costs of transport and healthcare go up.

For the US, Saiz (2007, 2011) and Saiz and Wachter (2011) find that immigration raises rents and housing values in destination cities, with population and rents rising in proportion. Within cities, the most immigrant-dense neighbourhoods have seen relatively slower prices increases, an effect attributed to native exits and increased urban-level segregation. For Spain, Gonzales and Ortega (2009) find that migrant inflows raised house prices by about 52% and is responsible for 37% of the total construction of new housing units between 1998 and 2008. For Switzerland, Degen and Fischer (2009) also find a large short term link, with a 1% migrant inflow associated with a 2.7% increase in the price of a single-family home. By contrast, two studies using Census data find much smaller long term effects. For Canada, Akbari and Aydede (2012) show a small but significant effect of

[4] By contrast, sector-level analysis by Quispe-Agnoli and Zavodny (QUISPE-AGNOLI, M. & ZAVODNY, M. 2002. The effect of immigration on output mix, capital, and productivity. *Economic Review-Federal Reserve Bank of Atlanta,* 87**,** 17-28.) for US manufacturing, and a cross-country study by Llull (LLULL, J. 2008. The Impact of Immigration on Productivity. *CEMFI Working Paper 0802.* Madrid: CEMFI.) both find negative links between immigration as a whole and productivity.

immigration on house prices between 1996 and 2006; for New Zealand, Stillman and Maré (2008) find no significant connection on prices or rents between 1986 and 2006.

The only robust studies we have found on migration and the mix of goods and services are Mazzolari and Neumark (2012), which focuses on California, and Bo and Jacks (2012) for Canada. Mazzolari and Neumark find suggestive evidence of both scale and composition effects: immigration is associated with fewer stand-alone retail stores, but a greater variety of 'ethnic' restaurants. Bo and Jacks find that immigration is linked to 25% of the rise in import variety to Canada between 1988-2007, and argue this represents a substantial welfare gain to native-born Canadians.

Implications and evidence for the UK

As discussed, in theory skilled migrants are unlikely to have strong effects on the consumption side of the economy unless a) they make up the majority of migrants and b) their preferences and attitudes are very different from those of natives.

The international evidence suggests that very large migration shocks are linked to short term price rises (for example, house prices in Spain), although longer term impacts are much smaller (as supplier respond). UK evidence on migration and prices is inconclusive. Frattini (2008) explores the causal effect of immigration on regional prices, using a shift-share instrument. He finds that migration contributed to reduced price growth in labour-intensive service sectors, but may have increased some grocery prices through demand-side effects. Sá (2011) finds a negative association between immigration and house prices at the local authority level between 2003-2010, which she suggests is driven by native outflows, but no links at the regional level. Working with a panel of urban TTWAs, Nathan (2011b) also finds no association between immigration and city house prices between 1994 and 2006.

Whitehead et al (2011) focus specifically on skilled (Tier 2) migrants, and is the most directly relevant house prices study for this review. (They are unable to carry out any analysis for migrants as residential addresses were unavailable.) Tier 2 analysis is based on analysis of LFS and other public datasets for areas where Tier 2 migrants are known to cluster. They find that Tier 2 residents mostly live in private rented accommodation, with about 20% of a given cohort eventually becoming owner-occupiers. Tenure mix changes slowly, with owner-occupation rising to 45% after five years. They suggest that 'Tier 2 type' migrants are likely to raise house prices by under 1% over five years.

More broadly, we might expect to see skilled migrants shaping the local mix of goods and services, through demand channels but mainly via migrant entrepreneurship and advantages in market knowledge. There is plenty of anecdotal and case study evidence of this in the UK, but we have found no systematic studies.

Section 2 Datasets review

2.1 Introduction

A number of different datasets were reviewed for the project. The aims of the review are to 1) identify the most useful data sources for exploring economic impacts of Tier 1 entrants, and 2) set out some initial answers to the MAC's questions from a preliminary review of these sources.

The dataset review has three components. First, it includes an analysis of the **Labour Force Survey**, which contains several key variables that may provide insights on the employment and wider impacts of Tier 1 entrepreneurs. Second, it includes some preliminary analysis of the **Financial Analysis Made Easy (Fame)** dataset, plus an illustration of how FAME could be used to further analyse the impact of Tier 1 investor and entrepreneur migrants using additional data from UK Border Agency(not available for the current analysis). Third, it provides a **list of other datasets** that provide information on the racial or ethnic background of the owners which could be used to place the impact of Tier 1 migrants in the broader context of historical migration to the UK.

2.2 Labour Force Survey

The Labour Force Survey contains no information on the visa status of respondents. In order, to analyse the potential impact of Tier 1 investor and entrepreneur migrants the analysis is limited to non-EU nationals who are self-employed at the time of the survey. Given the recent nature of the Tier 1 investor and Tier 1 entrepreneur routes, the analysis is conducted using the quarterly Labour Force Survey for the years 2011 and 2012.

Number of employees

LFS figures suggest that 13% of non-EU migrants in employment are self-employed, compared to 14% for the working-age population as a whole.[5] Table 1 provides further information.

Table 1 – Characteristics of self-employed non-EU nationals

Characteristic	*All non-EU nationals*	*Non-EU nationals who arrive since 2008*	*British nationals*
Share of self-employed with employees*	21%	6%	18%
Average number of employees working for self-employed **	4.80	N/A	4.98
Average age	40.4	33.3	47.20
Share homeowners	49%	23%	82%
Share renters	41%	70%	12%
Share in social housing	8%	5%	6%

Notes: * Self-employed people who use only other self-employed people in the business they run (e.g. builders) are coded 0, as well as those with partners, but no employees. ** Applies to respondents who work with between 1 and 10 other employees. The sample for recent migrants is very small and the estimate is not reported. Source: Quarters 1 to 4 of the Labour Force Survey for the years 2011 and 2012.

[5] For non-EU migrants who are active (employed, self-employed or ILO unemployed) the figure drops to 12%.

About 21% of non-EU migrants reporting their status as self-employed, also report having employees. This is higher than for British nationals (18%). For self-employed non-EU nationals who work with between 1 and 10 other employees, **an average of 4.8 staff are employed.**

One way to better capture migrants who are part of the Tier 1 investor and entrepreneur routes is to limit the analysis to those migrants who arrived to the UK during the last five years (i.e. since 2008). While this is useful, it has an important adverse effect on the number of observations available for each measure and, therefore, estimates need to be interpreted with caution. Limiting the analysis to post-2008 non-EU self-employed nationals decreases the share of entrants who employ staff to about 6% of all entrants. Hence, the **majority of post-2008 non-EU nationals who identify as self-employed do not have employees**. We also have no evidence from the LFS on whether employees are migrants or UK-born, or whether this employment is net additional.

Other demographic and social characteristics

Table 1 also reports on other characteristics of self-employed non-EU nationals. They tend to be relatively young (40.4 years of age on average), about half are home owners and less than 10% are in social housing. If the analysis is limited to those who arrive in the UK during the last five years, the share of homeowners decreases to about 23%, while the share in social housing decreases slightly to 5%. For all non-EU nationals in self-employment it is possible to conclude **the share of homeownership is higher than that of all foreign nationals in the UK, while the share in social housing is lower**. Note that these numbers are qualitatively different from findings on the housing market behaviour of other migrant groups, which are dominated by renting.

2.3 Financial Analysis Made Easy (FAME)

FAME is a database that provides financial and descriptive information on companies in the UK and Ireland.[6] Published by Bureau van Dijk Electronic Publishing (BvDEP), FAME includes a range of company data such as information on profits and number of employees. FAME also provides information on directors of the companies, which may help to identify both entrepreneurs and investors (who may have taken a management / oversight role in companies they invest in).

There are two inherent limitations of FAME for its use in research on high-skilled migrant entrepreneurs and investors. First, there is missing data on nationality of the directors for many companies. Hence, the analysis will be picking up information from just some companies, most likely the largest companies, which limits the extent to which we can observe *new* firms. Second, companies may have more than one director and could therefore have directors from different nationalities or in different age groups.

Full analysis of FAME database using additional UK Border Agency information

The best use of the FAME database would be to **match UK Border Agency information on individual visa applicants with information on the directors of the companies**. The Companies Act 2006 requires a private company in the UK to have at least one director. Public companies are required to have at least two directors. In either case, at least one of the company's directors must be an

[6] Further information regarding FAME is available at http://www.bvdep.com/en/fame.html.

individual (i.e. not a company or other form of legal entity). By cleaning the UK Border Agencyand FAME data and matching on full names, it would be possible to **identify those companies with directors which are in Tier 1 visas and to explore the characteristics of such companies**. Among many other variables, it would be possible to explore company characteristics such as number of employees and operating revenue. In a small number of cases, name matching might not be definitive (for example, common English-language names). In these cases, researchers would need to follow up manually with individual entrants/directors to confirm identity.

Note that the matching procedure is not feasible given the time/budget constraints of this project, but would be a productive avenue for follow-up research.

Preliminary analysis from Fame: nationality of company directors

In the absence of full data matching, we provide some general discussion of the **characteristics of companies with directors from those nationalities which are more common for Tier 1 entrepreneur and Tier 1 investor migrants**. We also **separate the directors across nationalities and age groups** as done in the MAC Tier 1 visa data analysis.

According to the MAC Tier 1 visa data analysis, the top nationalities in terms of applications for Tier 1 applications investor visas (out-of-country) for the period 5 June 2008 to 31 July 2012 were: Russia (276), China (197) and USA (58). The top nationalities in terms of applications for Tier 1 applications entrepreneur visas (out-of-country) for the same period were: USA (222), Pakistan (145) and India (101). The MAC analysis of Tier 1 visa data further divides these applications by age groups. The first group includes those who are less than 25 years of age. Subsequent groups are set at five year intervals up to 65 years of age. The last category includes those 65 years of age and over. We use these same age categories to explore the FAME data. In the UK the minimum age for a director is 16 years of age and there is no maximum age.

Table 2 reports information from FAME for companies which report having directors from the top 3 nationalities for each Tier 1 category mentioned above (USA is repeated in both visa categories). The information in Table 1 is also split across the same age categories used by the MAC. The first column reports on the nationality of the director, the second column reports on the age of the director, the third column lists the number of companies with at least one director from a given nationality in a specific age group, the fourth column reports the average number of employees for companies with at least one director from a given nationality and in an specific age group and finally column 5 reports the average operating revenue (i.e. turnover) for companies with at least one director from a given nationality and in an specific age group. As explained above, there is missing data for many companies across all categories (i.e. age and nationality of directors, revenues and number of employees of the company). Those companies with complete information tend to be the largest companies. Therefore, while the information in Table 1 is useful it must be interpreted with caution.

Table 1 shows that **the USA and India are the leading source nations for company directors in FAME**. There are 42,747 companies which reported having at least one director who is a USA national and 33,201 companies which reported having at least one Indian national as director. A relatively small number of companies reported having a Russian national as a director (4,416).

Table 1 also gives employment figures for these firms. **Companies who have Chinese or Indian nationals as directors tend to be larger than average** (1,341 and 1,165 employees respectively, versus 988 for the whole sample), while those with **a Pakistani, Russian or US director tend to be smaller** than average in employment terms (respectively, 191, 884 and 966 employees on average).

Table 2 – Characteristics of directors and characteristics of the companies

Nationality	Age	Number of companies	Average number of employees	Average operating revenue (turnover) £ ,000's
(1)	(2)	(3)	(4)	(5)
Russia	All	4,416	884	185,039
Russia	Under 25	156	N/A	53
Russia	25-29	533	36	166,031
Russia	30-34	840	737	70,498
Russia	35-39	738	437	46,802
Russia	40-44	908	1,919	584,862
Russia	45-49	602	3,258	191,220
Russia	50-54	463	3,303	249,026
Russia	55-59	313	706	128,722
Russia	60-64	174	104	19,083
Russia	65 and over	126	11	97,089
China	All	20,940	1,341	246,509
China	Under 25	862	138	17,537
China	25-29	3,664	848	44,684
China	30-34	5,544	701	76,178
China	35-39	3,993	90	136,303
China	40-44	3,461	357	236,836
China	45-49	2,245	179	192,132
China	50-54	1,213	840	259,091
China	55-59	888	218	220,747
China	60-64	494	7,646	1,473,928
China	65 and over	474	8,740	1,281,351
USA	All	42,747	966	230,695
USA	Under 25	180	16	373
USA	25-29	764	64	6,283
USA	30-34	1,980	164	21,186
USA	35-39	3,351	519	78,140
USA	40-44	6,505	697	97,948
USA	45-49	9,392	418	104,877
USA	50-54	10,338	813	201,072
USA	55-59	9,070	993	424,778
USA	60-64	6,445	1,718	352,305
USA	65 and over	7,699	1,868	475,054
Pakistan	All	15,673	191	9,026
Pakistan	Under 25	746	289	5,168
Pakistan	25-29	3,589	32	370

Pakistan	30-34	5,341	26	1,019
Pakistan	35-39	3,271	10	2,307
Pakistan	40-44	1,604	155	24,525
Pakistan	45-49	891	31	2,055
Pakistan	50-54	564	32	5,502
Pakistan	55-59	408	31	2,970
Pakistan	60-64	229	875	71,608
Pakistan	65 and over	244	215	17,463
India	All	33,201	1,165	144,034
India	Under 25	1,008	28	1,229
India	25-29	6,329	196	5,501
India	30-34	10,437	90	4,329
India	35-39	7,217	88	8,595
India	40-44	3,999	563	122,276
India	45-49	2,569	308	55,417
India	50-54	2,004	1,192	175,608
India	55-59	1,668	2,230	360,175
India	60-64	1,117	1,554	340,789
India	65 and over	1,254	3,266	502,218

Source: FAME. Notes: Retrieved on 15 February 2013. The information is for the last year available. The "All" category includes those with missing data for age of the director. There is missing information on all variables (i.e. age and nationality of directors, number of employees and turnover of the company) for a substantial number of companies. Values need to be interpreted with caution.

The MAC Tier 1 visa data analysis suggests that the most popular age category for Tier 1 investors is the 40-44 years of age category, while the most popular age category for the Tier 1 entrepreneurs was the 35-40 years of age category.

Table 3 – Aggregate statistics for companies with directors, five selected nationalities / age ranges

Age Group	Number of companies	Average number of employees	Average operating revenue (£ ,000's)	Total number of employees	Total operating revenue (£ ,000's)
All	116,157	988	212,299	10,040,392	3,326,299,236
Under 25	2,952	74	3,702	890	148,096
25-29	14,879	211	22,553	19,234	7,104,227
30-34	24,142	228	20,072	77,600	18,425,888
35-39	*18,570*	*390*	*56,227*	*288,329*	*78,548,596*
40-44	*16,477*	*702*	*124,355*	*1,302,178*	*320,462,032*
45-49	15,699	435	103,786	1,217,898	386,915,333
50-54	14,582	866	199,918	2,723,331	829,259,300
55-59	12,347	1,053	406,931	2,911,366	1,534,537,040
60-64	8,459	1,848	379,307	3,276,509	994,921,495
65 ≥	9,797	2,138	489,720	3,555,384	1,385,908,395

Source: FAME. Notes: Retrieved on 15 February 2013. The information is for the last year available which in most cases is 2011. The "All" category includes those with missing data for age of the director. There is missing

information on all variables (i.e. age and nationality of directors, number of employees and turnover of the company) for a substantial number of companies. Values need to be interpreted with caution.

Table 3 gives employment and revenue figures for these directors' firms. The numbers suggest that **companies with directors in the 35-40 years of age category have on average 390 employees** while **companies with directors in the 40-44 years of age category have on average 702 employees**. Both groups' firms are smaller than the average (988 employees), and have a **lower-than-average operating revenue (£56.3m and £124.4m respectively, versus an average of £212.3m).** Again, given the limited information available in the MAC Tier 1 visa data analysis it is not possible to separate those directors who hold a Tier 1 visa from other directors. A matching analysis, such as the one explained above would address this problem.

2.4 Other datasets with information on the racial or ethnic background of the owners

Five additional datasets were reviewed for the project. These datasets provide information on the racial or ethnic background of the owners. Ethnicity/racial background provide no information on migration status. Therefore, the information provided by these datasets for the analysis of Tier 1 entrepreneur and investor visas is very limited.

SME Finance Monitor survey (SMEFM)

The SMEFM has been commissioned by the Business Finance Taskforce to report into the small- and medium-sized enterprise (SME) finance. The survey began in 2011 and is taken each quarter with about 5,000 interviews of different SMEs. The SMEFM is undertaken by BDRC consultancy. The survey is available for download from the UK Data Archive at www.esds.ac.uk (SN 6888).

In the fifth wave of the survey, based on quarter 2 of 2012, there was information collected on the ethnic background of the owner (if relevant the survey collects information on the background of the partners, majority of the partners or principal owner). One potential use of the survey is to estimate the number of employees and other company characteristics by ethnicity of the owner. However, this would be a limited analysis for two reasons. First, ethnicity provides no information on migration status. Second, the survey is limited to businesses with 250 employees or less. Therefore, it is likely that variation across businesses is very limited. There is also a short analysis of the SMEFM in the second section of the data review.

United Kingdom Survey of Small and Medium Sized Enterprises' Finances (UKSMEF)

The UKSMEF is the first comprehensive survey of SMEs finances and financial relationships in the UK. There are three "rounds" of this survey. The first (2004) and third (2008) rounds were conducted by the Warwick Business School and allow for direct comparison. The second round (2007) conducted by the Centre for Business Research based at Cambridge use a different questionnaire which limits comparison with the other two rounds. The 2007 round is described as a "separate cross-sectional survey". The UKSMEF data and survey instrument are available for download from the UK Data Archive at www.esds.ac.uk (2004 = SN 5326, 2007 = SN 6049, 2008 = SN 6314).

There is no information on country of birth or migration status of the owner in UKSMEF. One of the questions in the survey is about "racial background" of the owner (if relevant the survey collects information on the "racial background" of the partners, majority of the partners or principal owner).

The UKSMEF has the same limitations as the SMEFM with the additional disadvantage that the data is relatively old and may not be particularly informative about Tier 1 migrants.

Ethnic Minority Business Finance Survey (EMBFS)

The EMBFS is a follow up booster survey to UKSMEF, which uses the same methodology and survey instrument as the original (i.e. 2004) survey but focused on Ethnic Minority Business (EMB). An EMB is defined as a business in which the owner or the majority of partners or shareholders in the business are from a particular (non-White) ethnic minority group (e.g. Indian, Pakistani, Bangladeshi, Black Caribbean and Black African). This survey could provide additional information on business owners from Indian and Pakistani background, two groups that are among the main users of Tier 1 investor and Tier 1 entrepreneur visas according to the MAC analysis of Tier 1 visa data. However, the data from the EMBFS is relatively old to provide much insight on Tier 1 migrants.

Small Business Survey (SBS)

The SBS was commissioned by the Department for Business, Innovation and Skills (BIS) as a 2010 follow up to the Annual Survey of Small Businesses 2007/8. The data and survey instrument are available for download from the UK Data Archive at www.esds.ac.uk (SN 6856). Access to these data is through the Secure Data Service. Access requires accreditation by the UK Statistics Authority as an Approved Researcher and completion of face-to-face training. This survey could also be used to do a comparison of company characteristics based on ethnicity. Again, this would be a limited analysis and provide no information on nationality or migration status.

Workplace Employment Relations Survey (WERS)

WERS is a 2004 survey of workplaces and their employees. It follows earlier surveys conducted in 1980, 1984, 1990 and 1998 (originally known as the Workplace Industrial Relations Survey). The survey collects information from: managers with responsibility for employment relations or personnel matters; trade union or employee representatives; and employees themselves. The survey includes a 1998-2004 panel component. The data and survey instrument are available for download from the UK Data Archive at www.esds.ac.uk (SN 5294).

The survey collects no information on migration status of the respondent or the employees of the company. There are two questions about ethnicity, one about the respondent and the other one about the employees of the company in general.

The questions in the WERS could be used to explore the interactions between employees in companies with different ethnic workforce compositions. However, this question is not as relevant for the evaluation of the Tier 1 investor and Tier 1 entrepreneur routes. Another limitation is that the data are relatively old. The fieldwork for the next WERS (WERS6) was completed in June 2012 and the data should be released in the near future.

Section 3 Tier 1 entrepreneur and investor migrants: evidence from case study research

3.1 Introduction

The research included qualitative, case study, interviews with Tier 1 migrant entrepreneurs and investors. The purpose of the case study research was to inform and explain findings from quantitative, survey and administrative data and to shed light on findings from existing research. Beyond this, the case studies were also intended to gather new evidence about the decisions made by entrepreneurs and investors, particularly in relation to the decision to come to the UK and business decisions. Further, they were intended to provide further insights into the impact of migrant entrepreneurs and investors and how their activities and experiences are affected by current economic, political and social circumstances.

A number of issues discussed in the evidence review were not covered in the qualitative research. In relation to entrepreneurs, these include the roles of disaporas and co-ethnic communities in enabling entrepreneurs to set up and develop businesses; in relation to investors they include the role of investors in advising other investors and the firms in which they have a financial stake. These limitations arose largely from the relatively early stage which many respondents had reached in terms of developing their businesses and their investments. In turn, individuals' lack of progress is explained in part by the UK's currently-depressed economic climate, delays in entering the UK and hurdles encountered once in the country. The qualitative research was also not able to identify variations in practices and experiences according to country of origin, for the same reasons and because of the relatively small sample size.

We interviewed 20 Tier 1 migrant entrepreneurs and investors. These included seven investors and 13 entrepreneurs. Four were women (three entrepreneurs and one investor) while the rest were men. We also interviewed two graduate Tier 1 entrepreneurs and a holder of the former Tier 1 visa. They provided additional information about enterprise activity and development in the UK but were not included in the sample. Case study interviews were carried out by telephone using a semi-structured topic guide (see Appendix 2) and were recorded, with the permission of respondents. All interviews were carried out during April 2013.

Tier 1 visa applicants were invited to take part in the research through an email to addresses provided by the MAC. This resulted in a high level of interest, with nearly 80 individuals willing to be interviewed. Therefore, to benefit from the opportunity to extend participation in the research, we asked interested individuals who could not be interviewed to email us about their experiences of applying for and having a Tier 1 visa via email. A total of 26 people sent us their responses in this way. Their experiences were treated as additional data, adding strength to some of the key messages identified from the analysis of case study interviews.

We analysed the case study data using a qualitative 'framework' approach, in which some themes were mapped in advance, and others identified from participants' accounts. In presenting the data in the report, some minor details of the circumstances of some respondents, eg profession or location, have been changed where these might identify individuals.

3.2 Background: personal and professional

Of the case study individuals, 13 were entrepreneurs and seven were investors, 16 were men and four were women (three entrepreneurs and one investor). Most had been granted the visa relatively recently. Only one of the entrepreneur interviewees had been refused a Tier 1 visa.

Respondents originated from a wide range of countries, including the USA, Australia, Canada, New Zealand, South Africa, Egypt, Russia, South America and China and India. However, many did not apply from their country of origin because they had previously migrated at some stage and, in some cases, several times. In terms of age, two (both entrepreneurs) were in their twenties, six were in their thirties, (five of them entrepreneurs) five in their forties and seven were 50 or older. The investors were generally older than the entrepreneurs, with five out of the eight aged over 50. Most were highly educated, with many having masters degrees. Overall, this high human capital, globally mobile, group fits with the findings from the wider literature (see Section 1). As noted below, a few interviewees are not *currently* living in the UK either, in part due to the international nature of their activities.

Many of the case study sample had obtained a Tier 1 visa fairly recently: ten had acquired a visa in 2012 and one in 2013. Investors had generally been in possession of a Tier 1 visa for longer, with four dating back more than three years. A few entrepreneurs were starting out in business for the first time. However, many had extensive business experience, having already set up successful businesses, in some cases multiple successful businesses and investments. A number had a net worth amounting to many £ millions. Most Tier 1 migrants, both entrepreneurs and investors, had moved to the UK with their families.

Entrepreneurs were engaged in a wide range of business sectors including IT, (websites, apps and software, publishing) business consultancy, manufacturing, hotels and spas, restaurants, drinks industry and retail. Many businesses had a strong IT-based element. Most respondents had already established successful businesses in these sectors in their country of origin or elsewhere.

Investors were generally business people who had achieved success in particular sectors, for example mining, finance and IT. They were generally still involved in their businesses, to a greater or lesser degree of activity, although some were largely living off their investments. The interview data suggests that, in practice, the distinction between investors and entrepreneurs is not clear cut. A number of investors were interested in entrepreneurial activity in the UK but were waiting to see how the economy fares over the coming months and years. They did not wish to be constrained by the terms of the Tier 1 entrepreneur visa, which would require them to set up a business, begin trading and recruit staff in a relatively short period of time (see later). They had made their initial investments for their visa application in Government bonds. Reasons for this were principally that this investment clearly meets the terms of the Tier 1 visa. Most had either made further investments in the UK, largely in securities listed on London Stock Exchange again to meet visa requirements. Many were planning further investments once they had gained a better feel for UK markets.

Living arrangements

Of those who had settled in the UK, many were living in London, although they were widely dispersed, with some living in areas including South West England and Scotland. Many were currently renting a residential property but were planning to buy, or had bought a property and were renovating while renting. Some were holding back on buying a property because of they found prices too high or because of uncertainties in the housing market and, in a few cases, uncertainty around the profitability of their business in the UK. For example one young entrepreneur thought the market for his yachting product might be stronger in the US, and that he might re-locate there if the business takes off. Therefore, for the time-being, he was continuing to rent a flat.

Some had children who were settled in to schools, or were at University, in the UK. These were mainly entrepreneurs, with the investors being older and less likely to have dependent children.

A few respondents were not living in the UK at the time of interview, for variety of reasons: they were involved in other business activities, as entrepreneurs or investors outside of the UK and therefore came and went; their business had not been successful and they had returned to their country of origin to focus on other business activities.

3.3 Reasons for applying for a Tier 1 visa

As we noted earlier, most respondents had applied for a Tier 1 visa relatively recently, particularly the entrepreneurs who had held their visas for no more than two years. The advantage of this for the research was that they had good recall of their reasons for applying and of the application process.

Entrepreneurs had applied because they wished to set up a business in the UK. This either consisted of starting a new business altogether or developing a business which they had already operated in their country of origin or elsewhere. Most respondents were not first-time entrepreneurs but had achieved considerable success in their businesses and with their investments. While the terms of the Tier 1 visa make a distinction between entrepreneurs and investors, and apply different conditions, some respondents saw themselves as both entrepreneurs and investors, in terms of their plans for activity within the UK. These individuals came through the investor route because they had the necessary finances, and because they wanted time to identify business opportunities and to become established. They chose not to come via the entrepreneur visa because they saw it as overly prescriptive in its requirements for a business to be established and trading within six months, and to have recruited staff within two years. They felt that, particularly in the current climate, it might not be wise to act so quickly. This suggests that the current requirements attached to the Tier 1 visa may be deterring potential entrepreneurial activity.

Most respondents had come to the UK either as sole traders or with one business partner, who was sometimes their spouse. One of the case study interviewees had not come to the UK as an individual entrepreneur but had been approached by a recruitment company, working on behalf of an investor who wanted to set up a software company in the UK (T11).

Most respondents said they knew little about the visa options before looking into the options. Therefore it was typical for an individual to have the idea of moving the UK as an entrepreneur or investor first and then look into the visa options. The internet, and the UK Border Agency website in particular, was the main source of information. The UK Border Agency website was generally felt to explain the terms of the visa very clearly.

When looking into visa possibilities, some respondents had expected to find a Highly Skilled Migrant Programme and were surprised that the previous Tier 1 had been discontinued. One entrepreneur in his early twenties had obtained a Tier 5 youth mobility visa, but had found it too restrictive in its limits on capital outlay and had not started trading. Many respondents saw the Tier 1 entrepreneur visa as a good option for them (with some caveats, explained below). A few respondents, who frequently travel to and from the UK, were concerned about their current arrangements. These included an artist living alternatively in the UK and Australia and an investor who had obtained a diplomatic passport from a country where he had strong business links. They felt that the Tier 1 visa would make it easier to travel to and from the UK.

Why the UK?

One of the key attractions of the UK to entrepreneurs was the location of the UK within European markets, language and time zone. Many entrepreneurs, and investors engaged in business activities, viewed the UK as an ideal base from which to tap into European markets either in general, or segments such as Northern European countries. This was particularly attractive to entrepreneurs from countries where English is the first or second main language, for example the US, Australia, Canada and India. As one case study entrepreneur from New Zealand explained:

> *'We knew that Europe was really accessible. We can launch into France, Germany, Spain from here, which we can really do and the fact that it's only a one hour different timeframe means you've got a whole set of other markets right on the doorstep here'* (T22).

This respondent had been able to raise capital from other European countries and Japan since setting up business in the UK. Other entrepreneurs commented on the ease at which they could travel between the UK and other European destinations for business. The UK's location in relation to other key business and trading centres was also a factor, with entrepreneurs and investors with connections with the Middle East and the US also referring to the UK's location between the two as a factor in their decision-making.

A number of respondents said they had a wide choice of locations from which they could conduct their business. These were principally IT based companies. Therefore, they chose the UK for a range of business and personal reasons. Business reasons included the availability of business support and supply of potential highly skilled recruits. They also included the strong technological infrastructure of the UK, including access to and take up of broadband.

Some entrepreneurs had accessed advice specifically on business opportunities in the UK before applying, largely through business contacts or consultants. For one entrepreneur, a business consultant the advice of UKTI in New York had been pivotal in the decision to set up in the UK:

'We were looking at starting a company either in New York or in London, but we're very interested in the European (IT) design scene. A fellow entrepreneur told me about the activities of UKTI in New York. I met with them and they were very helpful. After having discussions and understanding what the implications are, we did decide to choose London over New York'. (T21)

A number of the case study migrants had lived in the UK previously, most often as employees or masters students, and others had visited on several occasions. Those who had studied as masters students seemed to have some advantage in setting up businesses, in their knowledge of markets, opportunities and contacts from their courses. In some cases, the attachment to the UK was expressed in emotional terms, and particularly the area in which they had decided to settle, which as we described earlier, included south east and south west England and Scotland, as well as London.

For investors, reasons for applying for a Tier 1 visa were more personal. For many, the main motivation was to live in the UK. In some cases this was because of long-standing connections with the country, which meant they were frequent visitors. Some entrepreneurs also chose the UK partly for personal reasons, particularly those with young children. A number of respondents commented on the quality of the education system in the UK and access to good schools.

The investors generally saw themselves as having a wide range of options from which to choose, which typically included the US, Canada and Australia. One case study investor from Russia described his family's decision:

'We were thinking about the future of our children and we knew the UK very well because we used to live here [as employees in investment banking]. We decided to go here for children actually, for education and such, because it doesn't matter for us, from where to work, because we are investing around the world. This Tier 1 visa was perfect for us'. (T14)

Another investor had decided between living in the UK and Singapore, and had chosen the UK despite the financial advantages of Singapore:

'In Singapore you've got the climate, you've got very simple entry there and you can get in there and start doing stuff really quickly and income that you earn outside of Singapore can be kept outside and not taxed there, which you don't have that option here in the UK' (T8).

He had also considered Australia on the grounds that 'they don't have austerity' but had settled on the UK because of 'quality of life and institutions'.

A small number of investors, and entrepreneurs had little previous contact with the UK but wanted to make it their home. Factors making the UK attractive included its culture and lifestyle, the people, diversity and acceptance, the arts and, perhaps surprisingly, the weather. One entrepreneur from New Zealand expressed the importance of cultural factors:

'We're a mixed race family and [London] is a fantastic place to live for that. We don't experience any racism, we've been totally welcomed….. and we don't know that would have been true everywhere in the US' (T22).

Political stability, the legal system, rule of law, cosmopolitanism and tolerance were also factors for some migrants from Egypt, Russia, China, Pakistan and the Middle East.

Not living in the UK or meeting visa terms

As we explained earlier, a few respondents, largely those who emailed their responses were not living in the UK at the time of interview. Reasons for this included having been refused a Tier 1 visa (see below), lack of success with the business; or not being willing to meet the terms of the visa or not taking it up. Reasons why visa applications had not been successful appeared to be predominantly financial, for example bank statements which were not satisfactory to the UK Border Agency. Some visa holders had left the UK because their new ventures had not been successful and they wanted to focus on their other businesses. Reasons for not having taken up the visa were highly individual: in one case, the entrepreneur had been given wrong advice about the potential market for their product in the UK which prevented it from getting off the ground; in another case, the applicant's partner had a serious medical condition and plans were on-hold until his condition stabilised; while another respondent had not taken up his visa because, shortly after obtaining it, his office and house in New Zealand were badly damaged in an earthquake. If the degree of fall-out in the take-up of Tier 1 visas occurs more widely, it suggests that UK Border Agency records of visa holders are likely to over-estimate the number of active Tier 1 entrepreneurs in the UK.

A small number of respondents said they were not meeting the terms of their visa. Several respondents, including two via email, said that before obtaining the visa, they had not realised that its terms include a residency requirement of 180 days a year. There was a perception that the rules on residency had changed, although they were not sure of this. Another respondent who had obtained a Tier 1 investor visa said he had not been able to open a bank account in the UK. Another, an artist who applied for the visa to prevent entry problems on his numerous trips between London and Australia, said he will not be able to recruit any employees within the required time (see later).

3.4 The process of applying for entry via Tier 1

In most cases, the process of application had been quick. Some said it had taken several weeks, while others several days, possibly reflecting the type of service they opted for. Some respondents had made the application themselves, while others had used the services of a law firm or an immigration consultant. This was seen as costly, amounting to several thousands of pounds. A number had consulted a lawyer for some initial advice and then made the application themselves. Those who applied themselves generally found it straightforward, and largely a matter of having the right documents to submit with the application. Most applicants felt the UK Border Agency site was written in plain English and was easy to follow, however the sample may be biased in this respect since most respondents were successful applicants.

One interviewee had applied for a Tier 1 entrepreneur visa and had been refused, although would not say why. He believed that had the application included an interview, and the opportunity to

explain his business plans, the visa would have been granted (T4). Three individuals responding by email had been refused a visa, with proof of funds being the apparent reason. A number of case study individuals had initially had their applications refused because they had not submitted sufficient information or the full set of documents required for their application. Missing information was often financial, including bank statements and letters from the applicant's bank. In some cases the fault appeared to lie with the respondent's bank, which had failed to provide current statements. Other requests for documentation included documentation for spouses and children, including marriage certificates and custody agreements. Where difficulties were experienced, these were often with visas for dependents. In one case, UK Border Agency made a mistake with a spouse's visa, which, while being resolved, involved having to suspend use of her passport for several weeks (T21). One investor had wanted to migrate with his family, including his 19 year-old son who he felt should count as a dependent because he was supporting him financially. After looking into the options, his son enrolled in university access course and he entered the UK on a student visa (T19).

Respondents also complained at the cost of the visa, at more than £800 and particularly that the cost of the visa for dependents is the same. Rejections proved costly for some applicants, since re-applications involved having to repeat bio-metric scans, sometimes involving long journeys within their country of application, and loss of interest where the £200,000 entrepreneurial funding had to sit in an account in readiness for transfer to the UK. Some respondents were in the UK at the time they were applying, yet were required to submit their applications from their country of residence. This was an inconvenience for some, who would have like to apply from within the UK.

Experiences of using consultants and lawyers were mixed. Some were happy to have handed over the process to a legal expert for the reassurance this gave them that their application would not be rejected over minor technicalities. However, some respondents felt that their lawyer lacked expertise and said they had made mistakes in the application. It was unclear in some cases whether the difficulties experienced by respondents were with their adviser or with lack of clear guidance from the UK Border Agency. Some individuals had spent considerable sums on legal advice, both during and after their application. One respondent whose questions included whether his company could pay him a salary to meet his living expenses, had paid more than £5,000 in legal fees which he felt was excessive to obtain an answer to a relatively simple question (T6).

Some respondents had held a UK visa previously, for example a Working Holiday visa, or the Tier 1 Highly Skilled Migrant Programme (HSMP), which has expired. Some of these made comparisons between their experiences of applying for a Tier 1 entrepreneur visa and HSMP, commenting that their previous applications had been more simple and straightforward.

Meeting the criteria for Tier 1 entry

Respondents generally said they found it easy to meet the requirements for the Tier 1 visa, but our sample is clearly biased towards individuals in this position, since all but one of those interviewed had successfully applied. Those who emailed us about their experiences included some unsuccessful applicants. However, while the reasons for rejection sometimes included proof of funds, they were not sufficiently clear for us to draw conclusions on why conditions are not met.

Most entrepreneurs had not experienced difficulty meeting the requirement to register their business within six months, since they were almost all very clear about their intentions. Most were able to meet the financial requirements for Tier 1, of £200,000, generally because they already had successful businesses outside of the UK. However, a small number had experienced some difficulty. They included the following examples:

- A software engineer, who had been recruited by a head-hunter with backing from an investor who then pulled out. The visa process ground to halt until a new investor was found (T11).
- A young entrepreneur from Australia, who had only been able to raise the necessary funds through a wealthy school friend, but in fact did not need the level of investment required to get the business off the ground (T18). He therefore felt that the requirement was too high.
- An American entrepreneur setting up a tourist guide business, who had raised the funds through a combination of her own savings and loans from her parents and Grandmother. She also did not need this level of investment to get her business of the ground (E25).
- An American entrepreneur in his forties who raised the funds through selling his house. His new business in the UK had taken off very quickly and he was planning to buy a property in the UK (T20).

Investors generally found little difficulty raising the minimum level of investment, £1million, and did so from a range of sources, usually their own business, and in one case a spouse's. However, some respondents, both entrepreneurs and investors, experienced difficulty in transferring money into the UK. Investors felt that the classes of investment required in order to meet the Tier 1 visa requirements are clearly laid out and did not see them as problematic.

A few respondents said they had been affected by restrictions on their right to work as an employee while holding a Tier 1 visa. These included a young entrepreneur, new to the UK, who would have like to have taken a part-time job to meet people and to help with his living costs. An investor also said she had been restricted from working during her first two years in the UK and had a 'very sad and miserable experience' (T1).

Meeting the terms of renewal

Few respondents had reached the renewal stage. However, one investor who had done so had found the process quite unsatisfactory. This was principally because he was asked to part with his passport for six weeks, which would have affected his travel plans. After consulting with a lawyer, he paid around £7,500 for his application to be fast-tracked and received the renewed visa the same day. Similarly, an entrepreneur responding by email had his business disrupted by having no passport for five months during renewal. He explained that:

> *'I have a consulting business, catering to other European countries, Asia and the USA for client presentations for marketing and consulting, with no travel it has been extremely difficult to provide uninterrupted service to our customers'* (E17).

Other respondents were concerned that this would happen to them; that during the renewal process, they would not be able to travel and that this could affect their business plans (eg T21).

Some respondents expressed concern at whether they would be seen to have met the terms of the visa for it to be extended, and to be given Indefinite Leave to Remain in due course. Many of these concerns were centered on the requirement for businesses to have reached particular milestones, including having recruited at least two members of staff. This included an entrepreneur in his early twenties who had raised the £200,000 from a former school friend for a business in the yachting sector. He was outsourcing manufacturing of his products and, although he would like to employ administration and accounting staff, this was dependent on business income and he was not certain that he could afford to recruit these within the required period of time (T18). Another young entrepreneur had taken 18 months to get his business off the ground and was concerned that he had only six months in which to hire staff (T16).

Some interesting insights were gained from investors who had considered entering the UK via the entrepreneur route, but had decided not to. This was principally because they wanted to investigate opportunities in the UK first, and felt that this might take some time. Therefore, the requirement to have reached a certain level of business activity within a specified period was seen as too restrictive. A number emphasised that this would take time, as one explained:

> *'There's a lead time, and you're not going to put up your hard earned capital unless you actually understand the business, and trying to get that understanding just takes time….. If I was under the clock because I'd come in under the entrepreneur one I would have really been panicking now. Well, I wouldn't have been able to stay because I wouldn't have committed the cash'* (T8).

Therefore, a number of Tier 1 visa holders had come to the UK through the investor route, when they would more accurately be described as entrepreneurs. Another anomaly was apparent from the case of an artist, who had taken the Tier 1 entrepreneur route principally to make it easier to come and go between the UK and Australia, having experienced lengthy questioning at the UK border on a number of occasions. He was certain his visa will not be renewed because he was not generating an income, and felt his only option was to marry his British partner (T13). The investor route would have been more appropriate for this individual, although this would clearly be dependent on his ability to access funds.

The chief concern of investors in meeting the visa requirements concerned the residency requirement. This was a particular concern of investors with business commitments outside of the UK. One respondent, who had not applied until the residency requirement was reduced from nine months to six, described the longer requirement as a 'golden cage' which would adversely affect his overseas business activities (T10).

Concerns were expressed not just around meeting the current terms of their visa, but whether these terms might be altered as a result of changes in UK immigration policy. Finally, it seemed that some concerns about renewal were non-specific but arose from general anxiety that they would be forced to abandon their plans. A 26 year-old entrepreneur articulated such concerns:

> *'I am thinking about after three years I will have my family, I will have my life here, I will have my home and I will have friends. I will have good stuff and I can't imagine if the Border*

Agency say "Oh sorry, you missed to do this stuff" or "It is not complete". So that's me, I go back to Egypt' (T6).

Another entrepreneur said he was expecting a 'really bad experience' of renewal because of unsatisfactory interactions with UK Border Agency over his original visa (T21). These types of fears meant that a number of respondents were concerned to take the greatest possible care to ensure they were meeting the terms of their visa.

Settling into life in the UK

Aspects of settling into life in the UK were discussed with respondents. Issues raised included finding schools and finding somewhere to live. Most reported very positive experiences. For a number, the UK had already felt like a second home since they had either lived here in the past or made frequent visits. Some had become involved in their local communities, for example through involvement with their Parish council and children's schools. One entrepreneur, who had previously worked in the UK as a highly skilled migrant, described his family's experience as:

'Fantastic - we are settled here, we have made friends very quickly. My daughter is going to a private school in Edinburgh and my son is going to nursery when he turns three, so it's been fantastic, very easy, it's been great' (T20).

One investor had become involved in a leading policy institute.

3.5 Establishing economic activity in the UK

Setting up the business

As we noted in Section 1, there is a gap in knowledge about the factors which support and encourage the development of migrant businesses in the UK, including access to finance, and how these compare with experiences elsewhere. The case study research aimed to improve understanding of such issues, by investigating the experiences of entrepreneurs in setting up their businesses, the factors that facilitated this process and the barriers they encountered.

Most of the entrepreneurs were at a relatively early stage of setting up their business. In terms of their experiences of setting up their business, they divided these into the process of business registration and early operation, and financial aspects, particularly banking. The first of these processes was reported as quite straightforward, the second as problematic. In terms of business set up, the processes involved included registering with HM Revenue and Customs, registering for VAT, for a National Insurance Number and registering the business. Where difficulties were experienced, this seemed to arise from language skills. However, many respondents were surprised at the length of time which some of these processes took, for example obtaining a National Insurance number.

A number of respondents said that setting up their business had been relatively easy because of their previous business experiences gained overseas which had equipped them with knowledge of the sector in which they were setting up in the UK. One entrepreneur who was establishing a health spa had encountered difficulties with his local planning authority over his application of change of use (T6). Some respondents had encountered delays because of industry regulations that had to be

met. These included an investor in the boat business where various types of certification are required. While he regarded these as appropriate, they were numerous, took time and effort to research and to obtain (T8). One entrepreneur said he would advise prospective applicants for a Tier 1 visa to spend time researching regulations, since they are both easily accessed and clearly described (T15).

Some respondents had found business premises and, although property prices were found to be high, had found accommodation to suit their business needs. One entrepreneur had obtained several offices dotted over London to locate aspects of her burgeoning internet based business. A number of entrepreneurs setting up in London had made contact with London and Partners, a not-for-profit public/private partnership which promotes enterprise in London. The help they had received included access to reasonably priced shared business space.

Banks

The most serious difficulties encountered by respondents in setting up their businesses involved banks. A number of respondents encountered difficulty opening a bank account. This had caused them considerable problems, both in term of their business and personally. The application process was found to be long and drawn out and, in some cases, led to refusal on the grounds of lack of UK credit history or a stable residence in the UK. Some respondents had been able to set up an account with the UK branch of their bank in their country of origin, but in some cases even this had not been possible. One entrepreneur remarked that it is as well that Tier 1 applications have to be made from outside of the UK since, if applicants were required to have set up a UK bank account, few could apply. This individual had not set up a UK account, explaining that:

> *'At the moment, we just run it from offshore, because we just haven't had any more time to deal with it and it's just ridiculous, completely ridiculous, so it's easier for us to, at the moment, run it all out of Jersey'* (T22).

In some cases, discussions with banks had become heated. One entrepreneur, from the US, complained that 'bank customers are treated as suspects' (T21) and described an unsatisfactory meeting with a High Street bank:

> *'Finally I told her "listen, I feel like I'm at my dentist after not brushing for a month"… She got to the point of yelling at us, for no reason actually, so it was really bad, a very very bad experience'* (T21).

Problems were also reported with borrowing. Difficulties seemed to arise from having no credit history in the UK but may result from wider risk-aversion on the part of banks, as found in recent research by NIESR for the Department for Business Innovation and Skills on bank lending to small and medium sized enterprises (SMEs). The research found that banks restrict lending by constraining credit supply, rather than on decisions about riskiness of borrowers and that rejection rates for bank loans have increased in recent years (Armstrong et al, 2013). One case study entrepreneur described her experience of trying to buy business space:

'I found a building that I wanted to buy that would have been a multi-purpose building. We could have had one floor for our initial offices and our first team members and I would have an income from the top two floors. It was 1.2 million and I had half a million pounds for deposit with a couple of million Canadian as collateral for the balance if they were insecure. I could not, under any circumstances get a mortgage from any of the banks because I did not have two year's income taxes, proof of income tax from the UK' (T9).

The only option for this respondent was to liquidate her business assets in Canada, which she was reluctant to do since they were performing well. This difficulty was a key factor in her final decision not to set up her business in the UK.

Some respondents said that the difficulties and delays they had experienced in setting up a bank account had slowed down the process of establishing their business in the UK, in one case by as long as four weeks.

Sources of support

Entrepreneurs had accessed various forms of support, informal and formal. Some had studied in the UK to masters level and had developed business contacts through their course. Some were making use of these contacts, for example to sub-contract work such as marketing (T15). Otherwise, few respondents had established social networks which they were drawing on to develop their businesses, but were in the process of developing these.

Some respondents had received support from Government bodies, particularly UKTI and Scottish Enterprise. This support had been very welcome and the advice invaluable. Scottish Enterprise had introduced one respondent, a Russian entrepreneur, to a company running tests for the type of technology he was developing. The personal introduction made by the Enterprise Agency was particularly valuable to this respondent. He reflected that 'having someone British speaking their language, it just helps, you know' (T15). The agency had also suggested he file a patent application in the UK and had helped him to do this. They were also helping him to source further investment through matched funding. One entrepreneur from Canada had been disappointed to learn that most of the Regional Development Agencies had been closed and that regional funding was only available to set up in places of little interest to her. She felt that the locations, which included Manchester and Liverpool, were 'too removed for a head office' (T9).

One investor had received valuable support from the Springboard Accelerator Programme at Cambridge University, which she had attended on a visit to the UK in 2011. The programme organisers had introduced her to UKTI who had assigned her a deal manager. This individual had been of considerable help, advising on matters including the credentials of prospective investors in the business and arranging access to business space (T22). Another respondent had also been offered business space through contact with UKTI but had not taken it up (T21).

Entrepreneurs who indicated that they did not have the support they would have liked tended to have quite complex needs, for example the tax rates applying to customers in offshore tax havens (T18). However, it was common for some individuals to have to contact numerous help-lines to access advice and for this to be sometimes conflicting. Therefore a number of respondents

suggested a 'one-stop-shop' service for newly arrived entrepreneurs, offering advice and guidance over such matters as tax, opening bank accounts, buying and renting property and paying bills.

One investor who was buying out a business in the UK had experienced what he felt was unfair competition from a competitor who had obtained funding from the European Union. Although he recognized that this had taken them some years, he still felt that access to advice on such sources of funding, and the 'red tape' involved were problematic (T8).

Setting up in the UK compared to elsewhere

Some respondents made comparisons between setting up business in the UK and elsewhere. Observations included the following:

- It is easy to register a business in the UK
- Other aspects associated with registering a business in the UK, including tax and national insurance are straightforward but slower than in some other countries
- The single legal system in the UK, compared with interstate laws in the UK means that some aspects of business regulation and set up are more simple in the UK
- It is considerably easier to set up a bank account in the US, with a simple requirement for ID rather than full credit history as in the UK
- The UK tax system is more simple than in the US
- Regulations are more complex and require applications to more authorities than, for example, Singapore
- Registering business premises from which to employ people involves a more lengthy process of regulation than, for example, New Zealand

3.6 Impacts of businesses and investments

Many respondents were highly positive about their move to the UK. The view that the UK is a good place to do business was frequently expressed. Reasons for this included London as a business hub, the UK's position within Europe and access to European markets, ease of set up and the availability of highly skilled professional input, either as staff or contractors. Further factors, mentioned by individuals include access to foreign language expertise to translate products and services, and access to business support, for example UKTI and Scottish Enterprise.

Many respondents had obtained their visa relatively recently and their businesses were at an early stage of development. Therefore, when asked what their successes had been to date, respondents referred largely to set up and establishing their product, services or markets. Therefore, areas of success included having got their business off the ground to the point where they were trading and were building a strong customer base. As we explain below, a number were employing staff, hiring sub-contractors, or felt they had generated employment. This extended beyond businesses to personal expenditure. For example, an investor who had spent almost £1 million renovating his new home, pointed out he had kept five builders in employment for a year (T8).

Slow growth and the effect of the recession

A number of entrepreneurs described the start-up process as slow, and some felt they had not made the progress they would have liked. While some of the delays were attributed to red-tape and bureaucracy described earlier, slow progress was also explained with reference to the poor economic climate in the UK, particularly in consumer demand. A number of respondents said this had been one of their key challenges. Entrepreneurs were also wary about rapid growth, feeling that they needed to be sure of their market and get the 'right' initial clients. Some businesses had gone past the initial stages and were trading well. One software entrepreneur described how the, in its first year, the business had focused on setting up and recruiting freelance software design staff. He described this period as one of 'delayed revenue', since when the product had gone on the market and was doing very well (T16).

As we described earlier, a number of investors were keen to start businesses in the UK and these were at various stages of development. One factor limiting their ability to do is the requirement to keep £1million in equities. Therefore, some had put their businesses on hold. A further factor was the recession and difficulties in identifying sectors with business potential. However, a number were actively looking for opportunities.

Some businesses had not got off the ground, or had not fared well. These included a business which had failed at the first hurdle, when background research the respondent had commissioned on the profile of small businesses in the UK was found to be misleading, having included corner shops which were not the target market for the entrepreneur's product (T9). Another entrepreneur, from South Africa, had aimed to take over a restaurant franchise but, shortly after taking over two branches of the business in 2009, recession hit the High Street. One of the locations reduced to a row of boarded up shops and trade plummeted. This respondent then left a local manager in charge of the other branch, which was barely profitable, and returned to his business activities in his home country (T12).

Connecting with businesses and professionals

Many entrepreneurs had the advantage of having previous experience of setting up and running businesses. However, a number felt that their business idea was really taking off in the UK, because of access to markets and to skilled professional input. For example, a web-based business established in New Zealand had grown rapidly in the UK and was developing spin-off products, including games and toys (T22). A small number of entrepreneurs were setting up in business for the first time. These included a 25 year old Australian who was developing products for the yachting industry. He described the experience as a steep learning curve, in which his only external advice had been from a friend with her own small business. After a somewhat rocky start, which included splitting from his business partner, orders were flooding in: he had recently won orders amounting to £8,000 through attending a boat show and through word of mouth. (T18)

For many entrepreneurs, it was too soon to have made strong links with other businesses in the UK. However, in some cases these had been developed. These were largely for provision of services such as accountancy, PR and marketing. There was no evidence that migrants were targeting other migrant businesses for these services, but had developed these contacts through word of mouth in the business community, often sector focused, and through advertising. Some respondents said they

had been assisted in making such links by business support organizations, particularly UKTI and Scottish Enterprise.

Recruiting and employing staff

As we noted in Section 1, there is a gap in knowledge about the recruitment activity of migrant entrepreneurs, their hiring patterns and extent of recruitment of native workers. We were able to explore this to some extent although were limited by the fact that only a minority of entrepreneur respondents had recruited staff. A small number had recruited teams of staff, for example a web-based company offering extended warrantees had hired a staff of 10, including a Managing Director (E15). Another entrepreneur had taken over two fast food outlets and, although one had folded, the other continued to keep 14 staff employed (T12). Many respondents did not expect to employ large numbers within a short period of time although planned to do so in the longer term. Recruitment activity was generally focused around highly skilled individuals who could add value to the business and help it develop. A number of respondents had also recruited staff who could deal with administrative and financial aspects.

Some entrepreneurs were meeting their staffing needs through sub-contracting services rather than through direct employment. This included contracting with self-employed software specialists and product manufacturers. One respondent had recruited two senior staff, and had contracted out services to a PR firm, a marketing firm, accountants, games designers and numerous consultants to develop new spin-off products from her web-site. She estimated that she had spent £200 thousand on contractors in the last year (T22). A range of sources were used to find employees and freelancers, including personal and existing business contacts and social media. The website Linked-In had been used by some entrepreneurs to source staff and freelancers, and some were planning to use it in future (eg T23). Migrant entrepreneurs did not appear to be targeting other migrants as potential staff or contractors, but were aiming to draw from the widest range of talent and expertise available to them. Those needing to fill unskilled posts were recruiting from local labour markets. Some respondents had chosen their location in the UK partly because of the availability of labour (E20).

Many respondents planned to recruit staff once their business had become established. In some cases they planned to recruit a sizeable workforce. For example, one entrepreneur, who was setting up a health spa, had recruited only one employee, an administrator, but planned to recruit up to 30 staff and was exploring the possibility of recruiting from a local college (T6). Another was currently advertising for staff through the local Jobcentre Plus (T15). Another entrepreneur, setting up a brewery, planned to have three employees in place within a year, including a brewmaster, sourced nationally, and local staff (E22).

Those who had recruited staff had found this a relatively straightforward process. They were very satisfied with the quality of staff they had been able to recruit. However, in some cases, it had been difficult to recruit staff at highly skilled levels. For example, a mechanical engineering business setting up in Scotland had failed to find design engineers in mechanical engineering and had contracted this work to experts in the entrepreneur's home country of Russia (T15). Some respondents had used recruitment companies or head-hunters for this purpose. Some respondents

felt that their business will, in time, have wider, dynamic, impacts on employment, for example, an entrepreneur, in the business consultancy sector believed that:

> *'[Software designers] are highly sought after jobs developing the intellectual property and innovation spaces of the UK. They will generate, in very fast multiples, additional jobs, because these things actually grow very fast if they're done well'* (T21).

This respondent felt that, when considering visa renewal, credit should be given for the quality of jobs created, rather than the number alone.

Performance of investments

As well as asking respondents how their businesses were performing, we asked investors about their returns. Investment performance, which was largely Government bonds, was reported to poor, with many having reduced in value. However, this was not a matter of concern to investors. As one respondent with a very high net worth remarked:

> *'How the investment is performing is not necessarily going to change what I eat or drink each day, so let me put it to you that way'* (T17).

Investors generally had sufficient other resources for any loss on their investment to be a minor concern. One respondent had bought two residential properties and was renting one out and living from the income. Moreover, relatively small financial losses were not a concern to investors because they had, by and large, chosen to come to the UK for social, personal and family reasons. A number were also very wealthy indeed and were not concerned about short-term loss of investments.

3.7 Reflections and future plans

Views and reflections on the Tier 1 visa application process

In reflecting on the application process, respondents said they felt it might have been better in a number of ways: these included the cost of the visa, particularly for families. As described earlier, a number said they would have preferred to have applied for the visa from within the UK.

Terms of the Tier 1 visas

A number of respondents commented on the terms of the visa. We have already referred to the residency requirement of 180 days a year as an issue for some investors who had active business interests which led them to regularly work outside the UK. Some investors said they would like the UK Border Agency to exercise some discretion around this requirement in making decisions over visa renewals and in granting Indefinite Leave to Remain.

A number of entrepreneurs and investors commented on the minimum funds requirements. Their comments principally concerned the entrepreneur requirement of £200,000. It was thought that this requirement prevents some budding entrepreneurs with sound business ideas from coming to the UK. This was seen to apply particularly to software developers who do not necessarily need to have a physical presence in local markets and therefore have a wide choice of work locations. One respondent believed that Germany does not have a minimum funds requirement for migrant

entrepreneurs. One view was that the previous Highly Skilled Migrant Programme was better at enabling these individuals to come to the UK.

Investors generally felt that the £1million minimum was appropriate, but it is important to recognise that our sample is biased in excluding those who could not meet this. One investor from Australia had been involved in assisting Asian investors wanting to move to the UK. He felt it is important that the minimum requirement is not raised since, while individuals might have the necessary finance, many are not prepared to bring in large portions of their assets immediately. One reason for this is the exchange risk, which can lead to heavy financial losses even before the money is banked.

As we described earlier, respondents commented on the entrepreneur visa requirement to have registered a company within 6 months and to have employed two people within two years. This requirement was seen as particularly problematic for individuals who are not able to spend time in the UK on pre-setup activities. A number of respondents commented on the length of time it can take for some businesses to have reached the point at which they employ people and become profitable. One respondent, who had £1.2million ready to set up a business, had come through the investor route rather than face time-pressure to achieve results. His message to policy makers was:

> *'Don't expect people to walk in and to be able to turn business on straight away, there's going to be a lead time always'* (T8).

He expected his prospective business to be successful within five years, rather than four. Another respondent, an entrepreneur from Canada, had experienced a number of set-backs and decided not to continue with the visa, explained:

> *'It would have taken us almost two and a half years to set up and I doubt we would have been generating enough income to get our visa renewed, even if we went in full blast, because every business has a start up cycle and, in our industry [business software] it's getting enough of a client base for a momentum….. the five year window would have done that'* (T9).

Some respondents suggested that some discretion should be used when making visa extension decisions in cases where businesses had not reached the required milestones.

Other terms of both the entrepreneur and investor visas that were viewed as problematic by small numbers of individuals included restrictions on the right to work as an employee.

Future plans

Finally, respondents talked about their future plans. These largely concerned the development of their businesses since, as we have explained, some of these were at quite an early stage. Factors that might affect the decisions they make and their longer-term plans were largely business-related and centered on establishing a customer base and becoming profitable.

Some concerns were political. One of these was uncertainty over the UK's continued membership of the European Union. Many of the entrepreneurs had moved to the UK to have a base in Europe,

either in general or Northern Europe in particular. Therefore, they felt that it would be highly detrimental to their business if the UK should withdraw or even if this became a possibility, through the scheduling of a referendum. One respondent, who had obtained a Tier 1 visa but had not been able to set up the business, was re-considering his plans to move to the UK, which were principally personal:

> *'With the Tories' [sic] general stance on immigration and, more importantly, on the EU referendum, all things being equal I would rather my kids have an Irish passport than a British because there is a slight chance that, if there is a referendum, the UK will be out..... London is the largest English-speaking capital in the EU. If it is not that any more, the picture in the medium term will look somewhat bleaker'.* (E4)

However, in most cases, the concern was focused on business and markets. Therefore, one young entrepreneur explained that 'the main value to me [of a British passport] would be to have access to other European countries' which he was concerned might be in some way restricted if the UK left the EU.

Respondents also talked about their personal plans. Investors in particular were keen to settle in the UK, build friendships and connections and, in some cases, bring family members to join them in the UK. Therefore they were looking forward to gaining Indefinite Leave to Remain. However, they did not necessarily intend to remain in the UK forever and were keeping their options open. Having a UK passport would give them the flexibility over where to live to pursue their plans for their financial, business and personal lives.

Section 4 Conclusions and implications for policy

This section summarises the existing theory and evidence on the economic impacts of skilled migrants, from existing research and datasets and from our new, case study, research with Tier 1 migrants. We draw some conclusions from our combined analysis and set out some high-level implications for policy in relation to highly skilled migration.

4.1 Skilled migration: findings from the evidence and data reviews

Framing the wider impacts of skilled migration

Theory and evidence suggest that the economic impacts of migration – particularly skilled migrants – run well beyond the labour market. A **'wider impacts framework'** is thus important for policymakers. This review sets out such a framework, organised around a series of 'production side' and 'consumption side' channels.

Skilled migration may have effects on levels and patterns of entrepreneurship, investment, innovation – and thus productivity and employment – in receiving countries. We may also see some effects on the consumption side, especially in the interaction of production side comparative advantage and new (migrant-driven) sources of consumer demand. Theory also suggests these channels may have positive or negative outcomes, and distributional consequences are complex. In practice, the global evidence base suggests impacts are typically net positive on welfare, although we know very little about distributional effects. Critically, the empirical evidence also suggests that impacts of skilled migrants in any given receiving country are influenced by a) the size of the inflow b) the specific sending country / community c) industry sector and d) wider receiving country institutional and cultural factors. In turn, these four factors are likely to interact, especially via e) historical, cultural and economic links between sending and receiving communities.

The evidence, and its implications for the UK

In a country such as the UK, which has experienced repeated waves of migration rather than a single 'shock', and where migrants' average skill profile is close to that of natives, there are **good reasons to expect some wider impacts of skilled migrants**, beyond the labour market (Nathan, 2012).

<u>Entrepreneurship</u>

International evidence suggests that migrants are typically more likely to be self-employed than natives, for a number of reasons. Large, skilled diasporic communities seem particularly important for predicting entrepreneurial activity, with subsequent positive links to employment and innovation. Skilled migrants enter through higher education as well through the migration system. In the UK, skilled migrant entrepreneurs are likely to be clustered in sectors where the UK has some comparative production advantage, and spatially clustered in large urban areas. However, migrants' entrepreneurial activities are also driven by a number of other factors, including financial resources, class, and host country attitudes and institutions. Existing UK evidence suggests some positive links between migrant status and entrepreneurship, both nationally and in major cities such as London. 2011-12 LFS analysis for this report finds that around 1/5 of self-employed non-EU migrants employ staff, with 3.2 employees on average.

The international evidence suggests non-EEA countries, notably India, China and Taiwan, are important for generating migrant entrepreneurs. However, this evidence largely draws from the USA, and may not transfer to the UK. Exploratory work for this report using FAME and UK Border Agency analysis suggests that for companies with Directors from the largest Tier 1 sending countries and age groups, India and the USA are the leading source nations for company directors; overall, these target companies tend to be smaller than average in employment and revenue terms; but companies with Chinese, Indian-origin directors are larger than average. **Note that this analysis is preliminary and should be treated with great caution.** Further analysis that directly matches Tier 1 entrants and firm-level information could provide more definitive answers.

Investment

As with the entrepreneurship channel, the international evidence suggests that the presence of large, skilled migrant communities is linked to higher aggregate bilateral trade and investment flows. Diasporas play important roles in plugging information gaps and lowering transaction costs. Existing evidence concentrates on return flows (to sending countries) and there are relatively few studies looking at the effects for host countries. However, it is reasonable to expect net positive effects on investment and trade for the UK for skilled migrants, especially for those entering through programmes like Tier 1.

The literature raises important questions about which sending countries matter: the evidence suggests that aggregate effects are highest for sending countries where there is no / little previous trade, so that gains to trade are biggest. There is some suggestive UK evidence for this: A8 accession has been predicted to be overall trade-enhancing for the UK; export gains from non-Commonwealth migrants are greater than those from Commonwealth countries.

At the individual level, there is now good international evidence that experienced investors (or experts) play important knowledge transfer roles for recipient firms. Again, it is reasonable to expect such channels to operate for (at least some) Tier 1 investor entrants, especially in sectors such as ICT/digital economy where many investors have a deep industry background. However, there are no extant UK studies on this, and existing data sets are of limited use.

Innovation

Theory and evidence suggests skilled migrants may directly affect innovative outcomes via selection of individual stars, co-ethnic / diasporic group externalities, and team / firm-level diversity effects. As with entrepreneurship, the evidence points to the importance of higher education entry points as well as entry via skilled migrant routes. Much of the empirical evidence is for the USA, but there is a developing UK and European evidence base. A number of European studies suggest positive links from team / workforce diversity to innovation, although few of these directly explore skilled migrants. UK evidence suggests positive area-level links from skilled migrants to innovation by firms, especially in export-intensive sectors; this may be explained by other work which finds connections between top team diversity and firms' innovation. Other UK research with patents data finds positive links from diverse inventor communities to individual patenting.

Migrant entrepreneurship may also indirectly spur innovation by incumbent firms in sectors where migrant-businesses enter (weaker firms may exit, with welfare-negative employment effects). Again, it is reasonable to expect this process to be operating in the UK, although we have no UK evidence either way as yet.

Consumption

The review of evidence suggests that skilled migrants are unlikely to have strong direct effects on the consumption side of the UK economy - especially Tier 1 migrants, where inflows are small. Support for this is found in existing analysis for the much larger group of Tier 2 migrants, which found no evidence of housing market effects. However, it is reasonable to expect some impacts of the mix of goods and services, especially via production-side entrepreneurial activity. This channel is hugely under-explored in the international literature, with this review only locating one study.

Skilled migrants, especially high net worth individuals, may also have different preferences from other migrants (and much of the native population). LFS analysis for this report finds notably high levels of home ownership for self-employed non-EU migrants, which may be indicative of other consumption differences. Again, though, small group sizes imply aggregate impacts will be small.

4.2 Tier 1 entrants: findings from the case study research

Given the wider evidence base on skilled migration, what impacts are we likely to find in the UK *now* for *Tier 1 entrants* specifically?

The specific impacts of Tier 1 entrepreneurs and investors are rather harder to identify than those for skilled migrants in general. We might expect to see production-side impacts at individual and firm level, which may also affect market-level outcomes in some sectors. For investor and entrepreneur sub-groups, we might feel individual production-side effects are most plausible. It is harder to see *a priori* that substantial consumption-side effects might occur, and the available UK evidence (e.g. on housing market impacts) tends to back this up.

One key point is that **Tier 1 group sizes are fairly small**: in 2011, the most recent year for which we have data, 11,700 Tier 1 entrants made up 12.5% of the overall inflow through the Points Based System, of which 315 Entrepreneurs and 185 Investors comprised 2.7% and 1.6% of the Tier 1 inflow respectively. Overall numbers at the present time will be affected by grants of stay and/or exits from previous years. The MAC's internal analysis also highlights the great **diversity of sending countries**, even within the small Tier 1 set. This is reflected in the diversity of our case study sample.

This implies that economic effect of the *average* Tier 1 entrant may be small; however, specific individuals may have large impacts via (for example) founding a number of new companies in the UK, or making major investments in a series of UK firms. The evidence also suggests that a number of other opportunities and constraints influence skilled migrants' economic outcomes.

The review suggested a number of issues to explore in the primary research both for **Tier 1 entrepreneurs and investors.** We were able to cover a number of these in the case study research, including factors assisting and hindering business development, hiring practices, investment activity and consumption. A second key point is that, given current economic conditions in the UK, and the relatively short life of Tier 1 policies to date, it is challenging to explore all the potential issues and channels identified for skilled migrants in general, for the Tier 1 group in particular. Specifically, investigation of some issues identified in the evidence review was limited by the relatively short time that many of the entrepreneurs had been in the UK. For example, we were not able to fully assess the roles of disaporas and co-ethnic communities in enabling entrepreneurs to set up and develop businesses; neither were we able to examine the role of investors in advising other investors and the firms in which they have a financial stake. However, there were clear indications that many businesses were beginning to make an economic impact through recruitment, sub-contracting and deployment of professional skills.

The sample of case study individuals matches well with what is currently known about the profile of migrant entrepreneurs and investors: the former are relatively young, many aged in their thirties and highly educated. Investors tend to be somewhat older and to been highly successful in business, sometimes globally. Many entrepreneurs had also successfully set up businesses, and were using proceeds to finance their move and new business in the UK. **Only a few of the sample were setting up in business for the first time.** This may be a consequence of the terms of the Tier 1 entrepreneur visa (see below). Entrepreneurs' businesses covered a wide range of sectors. Some were in the IT sector, and the UK was seen as having conditions conducive for the growth of such businesses.

The impact made by Tier 1 entrepreneurs

Many of the case study respondents had obtained a Tier 1 visa fairly recently so **it was too early to make a full assessment of the economic impact** they had made. Aside from the short period of time since their arrival in the UK, other factors affecting progress included delays in setting up resulting from bureaucratic requirements, and the unfavourable economic climate for business. Some businesses had not got off the ground or had been put on hold. However, it was apparent that many were achieving some success. This included generating new products and services, recruiting staff, hiring freelance staff and consultants and contracting out of production and service delivery. A number of businesses had recruited local people or were planning to do so.

Applying for and meeting the terms of the Tier 1 visa

The actual **process of applying for a Tier 1 visa** was found to be straightforward and the website was clear and easy to follow. However, again, this may reflect some bias among respondents who included only a few initially unsuccessful applicants. Many respondents commented on the high cost of the application fee, particularly where they were applying for their dependents to join them.

Most of the **terms of the visa** were found to be acceptable to respondents. However, while our sample includes some individuals who had been unsuccessful, and some who were required to re-submit their application, it does not include those who found the terms too unacceptable to make an application. Even so, both entrepreneurs and investors involved in the research raised some design issues for future versions of both the Entrepreneur and Investor tracks: these aresummarised in Figure 1.

Setting up and availability of support

Most aspects of setting up in business in the UK were found to be straightforward, with an important exception: **opening a bank account was found to be highly problematic** for many entrepreneurs and investors, some of whom reported unsatisfactory experiences and exchanges with banks.

Those individuals who did extensive research on the potential for their business before coming to the UK appeared to be making more progress than those who did not. However, this was not always the case, since one business had been misled by the findings of research they had commissioned. **Business support, both before and after arrival, was found invaluable by those who had accessed it,** with UKTI and Scottish Enterprise singled out for particular praise.

One of the attractions of the UK to entrepreneurs was its **location within European markets**, with many viewing the UK as an ideal base from which to tap into these and travel within Europe. The availability of business support and **the supply of expertise and highly skilled labour were also factors in entrepreneurs' decision-making.** For investors, decisions were more personal and sometimes included emotional and sentimental attachments to the UK.

Figure 1: Design of the tier 1 visas

Some entrepreneurs had experienced difficulty raising the minimum funds required. These included young entrepreneurs setting up in business for the first time. Some respondents expressed the view that the requirement favours individuals with both an established track record in business, and detailed knowledge of the UK, so and deters young entrepreneurs with sound business ideas setting up for the first time. Therefore, **the requirement to have funds of up to £200,000 may be preventing young entrepreneurs from coming to the UK.** This may represent a lost opportunity for the UK to benefit from the economic and employment impacts of new, potentially successful, businesses. Other countries do not levy these fees (see below). **Employment restrictions** on Tier 1 entrepreneurs also make it difficult for individuals to earn while their business is taking off, therefore cutting off a potentially important source of support.

Many who had come via the entrepreneur route were concerned that they would not meet the milestones for business set up and recruitment to get their visa renewed and to achieve Indefinite Leave to Remain. This was particularly in view of slow start up resulting from current economic conditions. They were reluctant to expand too quickly, in fear of over-stretching the business at an early stage. **They would like the UK Border Agency to exercise discretion when considering the progress made by the business**, although did not expect this.

A number of investors also wanted to set up enterprises in the UK and some entrepreneurs also wished to invest in other businesses than their own. **Some applicants had not been sure which of the Tier 1 visas was best for them** and it was apparent that some had chosen the less suitable option.

The principal reason why some would-be entrepreneurs had chosen the investor route was to avoid the restrictions of the entrepreneur visa. In line with the experiences of many entrepreneurs, they saw its milestones for business set up and recruitment as overly prescriptive, particularly given the current economic climate. This suggests that **the current requirements attached to the tier 1 visa may be deterring potential entrepreneurial activity**.

Investors are restricted in where they place their funds, and most had invested in Government bonds. They were generally content with this arrangement, although they had experienced losses. Some respondents either had other investments in the UK or were planning to make these. Strikingly, a number of respondents who had come via the investor route also wished to set up businesses in the UK and required funds to do this. Therefore, **the requirement to keep the investment in place may restrict entrepreneurial activity by less wealthy investors.**

Some investors felt that the residency requirement of 180 days a year is too restrictive, given that many are involved in business activity outside of the UK. This requirement may be encouraging applicants to apply for investor visas in their spouse's name, in most cases a wife.

Respondents were also concerned at the prospect of having their passport retained by up to six weeks during the renewal application period. This was a concern for many entrants with family and/or business interests outside the UK.

Consumption

There is anecdotal evidence of activity of Tier 1 migrants, particularly investors, in relation to the purchase of high value residential property. There was some evidence of the consumption patterns of Tier 1 migrants from the case study research, including investment in renovation. However, many respondents were renting property and did not intend to buy until they were more settled. Some found UK prices, particularly in London, very high and were reluctant to buy until they were more certain of the market. Therefore, **current speculation about the effect of wealthy migrants on the property market may not accurately reflect the circumstances of many newly arrived entrepreneurs.**

4.3 Policy implications

Literature has little to say directly on the design effects of specific immigration policies on entrepreneurial activity (although see Schuetze and Antecol (2007) and Mahuteau et al (2011) for two recent studies). Theory and evidence also suggest that policymakers cannot definitively identify future successful entrepreneurs, investors or innovators, but can design policy to maximise the likely set of these groups.

Specifically, the evidence review suggests some **high-level policy lessons**:

- **Entrepreneurship** – Notably, countries such as Canada and Chile that have launched entrepreneur visa programmes do not levy financial bonds (Wadhwa (2012)).[7] Policymakers should monitor the future outcomes of these programmes and benchmark these against the UK. More broadly, skill-biased migration policies for non-EEA countries that seek to select entrepreneurs, *and* are joined up to industrial strategy and pro-startup / business growth initiatives, might generate higher overall rates of skilled migrant entrepreneurship. Our case study evidence suggests that the active support of UKTI and business support agencies to Tier 1 entrants is welcomed. Given the importance of HE in migrant enterprise, these migration policies may need to include changes to student visas and post-study stays. They might also include more targeted support to entrepreneurial activity by recent migrants, who are likely to be less familiar with basic steps to business set up than natives.
- **Investment** – skilled migration policies that hope to generate additional investment, or better matched investment flows should a) target high net worth individuals who are experts, not just rich individuals and b) integrate migration regimes with trade / investment policies aimed at large *new* markets, such as the BRICS. There was evidence from the case studies that investors frequently have sector-based expertise which they can use in entrepreneurial activity, if visa restrictions do not prevent this.
- **Innovation** – the evidence suggests that skilled migration policies that seek to promote innovation should open up HE entry routes and relax post-study restrictions, in order to attract stars and to facilitate longer term knowledge flows through the creation / expansion of diasporic

[7] Specifically, Chile runs a competition for embryo businesses (judged by an international expert panel) in which successful applicants receive financial support and office space. Canada requires entrants to have the support of a Canadian angel investor group or venture capital fund; Canadian VC/angel umbrella groups then filter applications. Canada also requires applicants to have funds to cover family members' living costs.

links. Some of the case study respondents had studied for masters degrees at UK universities and were developing successful businesses, sometimes drawing on their university connections.

- **Consumption** – it is reasonable to expect skilled migration to have effect on product/service mix, especially in non-tradeable sectors, as skilled migrant entrepreneurs may have a comparative advantage in spotting market niches. To the extent added variety represents a welfare gain to consumers, policy should encourage skilled migrant entrepreneurs. Anecdotal evidence of widespread property purchase by wealthy investors was not supported by the case studies, which included individuals of more modest means.

The primary research also helps generate some **specific implications for UK policy** . These are as follows:

Attracting the right applicants for the Tier 1 visa

The experiences and views of entrepreneurs that the UK is a good place to do business, and that the conditions are particularly favourable in the IT sector might be used to inform UK marketing of the visa to potential applicants.

The minimum fund requirements for the entrepreneur visa of £200,000 reduce the risk that an individual does not have the financial resources behind them and therefore falls at the first hurdle. However, one consequence is that the visa attracts individuals with an established track record in business and, at the same time, may deter young entrepreneurs with sound business ideas setting up for the first time. There may be scope for flexibility within the visa for this group, whose business plans and viability could be assessed as part of their application. This assessment might be carried out through coordination between the UK Border Agency and Department for Business Innovation and Skills (BIS), particularly UKTI.

Some flexibility might be applied to current restrictions on the employment of Tier 1 entrepreneurs who do not have spare resources in the early days of business set up.

The attraction of the UK in relation to the rest of Europe was a factor encouraging some entrepreneurs to come to the country. The ease of travel across Europe was highly valued. A number expressed concern at the possibility that the UK might discontinue its membership of the European Union, or that the uncertainty which a referendum on the issue would be damaging to business. Those responsible for marketing the UK to potential entrepreneurs should be aware of such concerns among potential entrepreneurs and seek ways to address these.

Improving the design of the Tier 1 visa

The lack of a clear distinction, in some cases, between an entrepreneur and an investor may need further consideration in relation to visa requirements. Some of the case study respondents were investors who also wanted to set up their own businesses, while some entrepreneurs wanted to invest in businesses other than their own. These circumstances were seen by some individuals to be potentially problematic and the terms of their visas too restrictive. An unintended consequence is the discouragement of entrepreneurial activity by wealthy investors. Therefore, the ease or difficulty of combining both activities within the same visa may need to be examined.

The residency requirement of 180 days a year is too restrictive for investors, given that many are engaged in business activity outside of the UK. Its consequences, which can include applications made by the spouse of the investor, frequently a wife who is less mobile, may need to be reviewed.

Helping businesses to set up and develop in the UK

The problems experienced by some entrepreneurs and investors with the UK banking system should be regarded as a matter of some concern. Many reported difficulties simply opening a bank account. The experiences of some individuals are potentially damaging to the UK's image as a place to do business and need to be addressed.

The finding that those individuals who did extensive research before coming to the UK appeared to be making more progress than those who did not suggests that more input at this stage may pay off. There may be scope to increase the availability of advice to prospective migrant entrepreneurs, through UKTI or advisory services to small businesses. Coordination between the BIS, particularly UKTI, and the UK Border Agency at both the application and renewal stage could help ensure that businesses with most potential are identified and given targeted support.

Similarly, business support after arrival was found invaluable by those who had accessed it and should be made available to entrepreneurs, particularly those starting out in business for the first time. The suggestion of one-stop-shop for new entrepreneurs may also be helpful and could possibly help businesses get off the ground more quickly.

Improving the visa renewal process

Given the current recession and difficulties facing some businesses, there may be scope for UK Border Agency (with input from BIS/UKTI) to exercise discretion in assessing progress of enterprises against the required milestones when making decisions about visa renewal. The danger of rigid milestones is that they can encourage businesses to expand too quickly, damaging long-term growth.

Case study evidence suggests that Tier 1 businesses have a range of impacts. These include generating new products and services, recruiting staff, hiring freelance staff and consultants and contracting out of production and service delivery. A number of businesses had recruited local people or were planning to do so. These wider impacts should be taken account of in the renewal process.

Having a passport retained by UK Border Agency during renewal of a visa can cause serious inconvenience for entrepreneurs and investors with business interests outside the UK. Therefore, where possible, the period of retention of passports should be as short as possible.

References

ACS, Z. & SZERB, L. 2007. Entrepreneurship, Economic Growth and Public Policy. *Small Business Economics,* 28, 109-122.

ACS, Z. J., AUDRETSCH, D., BRAUNERHJELM, P. & CARLSSON, B. 2004. The Missing Link: The Knowledge Filter and Entrepreneurship in Endogenous Growth. *CEPR Discussion Paper No. 4783.* London: CEPR.

AGHION, P., BLOOM, N., BLUNDELL, R., GRIFFITH, R. & HOWITT, P. 2005. Competition and Innovation: An Inverted-U Relationship. *The Quarterly Journal of Economics,* 120, 701-728.

AGHION, P., BLUNDELL, R., GRIFFITH, R., HOWITT, P. & PRANTL, S. 2009. The Effects of Entry on Incumbent Innovation and Productivity. *Review of Economics and Statistics,* 91, 20-32.

AGHION, P., DEWATRIPONT, M., DU, L., HARRISON, A. & LEGROS, P. 2012. Industrial Policy and Competition. *National Bureau of Economic Research Working Paper Series.* Cambridge, Mass: NBER.

AGRAWAL, A., KAPUR, D. & MCHALE, J. 2008. How do spatial and social proximity influence knowledge flows? Evidence from patent data. *Journal of Urban Economics,* 64, 258-269.

AKBARI, A. H. & AYDEDE, Y. 2012. Effects of immigration on house prices in Canada. *Applied Economics,* 44, 1645-1658.

ALDRICH, H. E. & WALDINGER, R. 1990. Ethnicity and Entrepreneurship. *Annual Review of Sociology,* 16, 111-135.

ALESINA, A. & FERRARA, E. L. 2005. Ethnic Diversity and Economic Performance. *Journal of Economic Literature,* 43, 762-800.

ALTINAY, L. & ALTINAY, E. 2008. Factors influencing business growth: the rise of Turkish entrepreneurship in the UK. *International Journal of Entrepreneurial Behaviour & Research,* 14, 24 - 46.

ANDERSON, S. & PLATZER, M. 2007. American Made: The Impact of Immigrant Entrepreneurs and Professionals Arlington: National Venture Capital Association.

ARMSTRONG, A., DAVIS, P., LIADZE, I and RIENZO, C. 2013 Evaluating Changes in Bank Lending to SMEs over 2001-12: Ongoing Tight Credit Conditions? NIESR Discussion Paper No. 408

AUDRETSCH, D. & FELDMAN, M. 1996. R&D Spillovers and the Geography of Innovation and Production. *American Economic Review,* 86, 630-640.

BAGHDADI, L. & JANSEN, M. 2010. The Effects of Temporary Immigration on Prices of Non Traded Goods and Services. *Journal of Economic Integration,* 25, 754-782.

BASU, A. 1998. An Exploration of Entrepreneurial Activity among Asian Small Businesses in Britain. *Small Business Economics,* 10, 313-326.

BASU, A. 2002. The Interaction between Culture and Entrepreneurship in London's Immigrant Businesses. *International Small Business Journal,* 20, 371-393

BASU, A. 2004. Entrepreneurial aspirations among family business owners: An analysis of ethnic business owners in the UK. *International Journal of Entrepreneurial Behaviour & Research,* 10, 12-33.

BASU, A. & GOSWAMI, A. 1999. South Asian entrepreneurship in Great Britain: factors influencing growth. *International Journal of Entrepreneurial Behaviour & Research,* 5, 251 - 275.

BAYCAN-LEVENT, T. & NIJKAMP, P. 2009. Characteristics of migrant entrepreneurship in Europe. *Entrepreneurship & Regional Development,* 21, 375-397.

BERLIANT, M. & FUJITA, M. 2009. Dynamics of knowledge creation and transfer: The two person case. *International Journal of Economic Theory,* 5, 155-179.

BO, C. & JACKS, D. S. 2012. Trade, Variety, and Immigration. *National Bureau of Economic Research Working Paper Series 17693.* Cambridge, Mass: NBER.

BONACICH, E. 1973. A Theory of Middleman Minorities. *American Sociological Review,* 38, 583-594.

BORJAS, G. 1987. Self-Selection and the Earnings of Immigrants. *American Economic Review,* 77, 531-53.

BORJAS, G. & DORAN, K. 2012a. The Collapse of the Soviet Union and the Productivity of American Mathematicians. *Quarterly Journal of Economics,* 127 1143-1203. .

BORJAS, G. J. & DORAN, K. B. 2012b. Cognitive Mobility: Labor Market Responses to Supply Shocks in the Space of Ideas. *National Bureau of Economic Research Working Paper Series 18614.* Cambridge, MA: NBER.

CARD, D. 2005. Is the New Immigration Really So Bad? *The Economic Journal,* 115, 300-323.

CARD, D. 2010. How Immigration Affects US Cities. *In:* INMAN, R. P. (ed.) *Making Cities Work: Prospects and Policies for Urban America.* Princeton: Princeton University Press.

CHELLARAJ, G., MASKUS, K. & MATTOO, A. 2008. The Contribution of International Graduate Students to U.S. Innovation. *Review of International Economics,* 16, 444-462.

CHISWICK, B. 2005. High Skilled Immigration in the International Arena *IZA Discussion Paper No. 1782.* Bonn: IZA.

CLARK, K. & DRINKWATER, S. 2000. Pushed out or pulled in? Self-employment among ethnic minorities in England and Wales. *Labour Economics,* 7, 603-628.

CLARK, K. & DRINKWATER, S. 2010. Recent trends in minority ethnic entrepreneurship in Britain *International Small Business Journal,* 28, 136-146.

COMBES, P.-P., LAFOURCADE, M. & MAYER, T. 2005. The trade-creating effects of business and social networks: evidence from France. *Journal of International Economics,* 66, 1-29.

CORTES, P. 2008. The Effect of Low-Skilled Immigration on U.S. Prices: Evidence from CPI Data. *Journal of Political Economy,* 116, 381-422.

CRICK, D. & CHAUDHRY, S. 2010. An investigation into UK-based Asian entrepreneurs' perceived competitiveness in overseas markets. *Entrepreneurship & Regional Development,* 22, 5-23.

DE SIMONE, G. & MANCHIN, M. 2012. Outward Migration and Inward FDI: Factor Mobility between Eastern and Western Europe. *Review of International Economics,* 20, 600-615.

DEGEN, K. & FISCHER, A. 2009. Immigration and Swiss House Prices. *CEPR Discussion Paper no. 7583.* London: Centre for Economic Policy Research.

DEPARTMENT OF INNOVATION UNIVERSITIES AND SKILLS 2008. Innovation Nation. London: Department of Innovation, Universities and Skills.

DOCQUIER, F. & LODIGIANI, E. 2010. Skilled Migration and Business Networks. *Open Economies Review,* 21, 565-588.

DOCQUIER, F. & RAPOPORT, H. 2012. Globalization, Brain Drain, and Development. *Journal of Economic Literature,* 50, 681-730.

DRORI, I., HONIG, B. & WRIGHT, M. 2009. Transnational Entrepreneurship: An Emergent Field of Study. *Entrepreneurship Theory and Practice,* 33, 1001–1022.

DULEEP, H. O., JAEGER, D. & REGETS, M. 2012. How Immigration May Affect U.S. Native Entrepreneurship: Theoretical Building Blocks and Preliminary Results. *IZA Discussion Paper 6677.* Bonn: IZA.

DURANTON, G. & PUGA, D. 2001. Nursery Cities: Urban Diversity, Process Innovation and the Life Cycle of Products. *American Economic Review* 91, 1454-1477.

DUSTMANN, C., GLITZ, A. & FRATTINI, T. 2008. The labour market impact of immigration. *Oxford Review of Economic Policy,* 24, 477-494.

EDIN, P.-A., FREDERIKSSON, P. & ÅSLUND, O. 2003. Ethnic Enclaves and the Economic Success of Immigrants: Evidence from a Natural Experiment. *Quarterly Journal of Economics,* 118, 329-.

EGGER, P., NELSON, D. R. & VON EHRLICH, M. 2012. The Trade Effects of Skilled versus Unskilled Migration.

FAGERBERG, J. 2005. Innovation: A guide to the literature. *In:* FAGERBERG, J., MOWERY, D. & NELSON, R. (eds.) *The Oxford Handbook of Innovation.* Oxford: OUP.

FAIRLIE, R., KRASHINSKY, H., ZISSIMOPOULOS, J. & KUMAR, K. 2012. Indian Entrepreneurial Success in the United States, Canada, and the United Kingdom. *In:* POLACHEK, S. W. & TATSIRAMOS, K. (eds.) *Research in Labor Economics.* Emerald Group Publishing Limited.

FLORIDA, R. 2002. *The Rise of the Creative Class,* New York, Basic Books.

FOAD, H. 2011. Immigration and equity home bias. *Journal of International Money and Finance,* 30, 982-998.

FOLEY, C. F. & KERR, W. R. 2011. Ethnic Innovation and U.S. Multinational Firm Activity. *National Bureau of Economic Research Working Paper Series.* Cambridge, Mass.: NBER.

FRATTINI, T. 2008. Immigration and Prices in the UK. *mimeo.* London: UCL.

FUJITA, M. & WEBER, S. 2003. Strategic Immigration Policies and Welfare in Heterogenous Countries. *Institute of Economic Research Working Papers.* Kyoto: Kyoto University.

GAGLIARDI, L. 2011. Does Skilled Migration Foster Innovative Performance? Evidence from British Local Areas. *SERC Discussion Paper DP0097.* London: SERC.

GEORGARAKOS, D. & TATSIRAMOS, K. 2009. Entrepreneurship and survival dynamics of immigrants to the U.S. and their descendants. *Labour Economics,* 16, 161-170.

GEORGE, A., LALANI, M., MASON, G., ROLFE, H. & ROSAZZA BONDIBENE, C. 2012. Skilled immigration and strategically important skills in the UK economy. *Report for the Migration Advisory Committee.* London: NIESR.

GIANNETTI, M., LIAO, G. & YU, X. 2012. The Brain Gain of Corporate Boards: A Natural Experiment from China. *CEPR Discussion Paper DP9190.* London: CEPR.

GIRMA, S. & YU, Z. 2002. The link between immigration and trade: Evidence from the United Kingdom. *Weltwirtschaftliches Archiv,* 138, 115-130.

GODLEY, A. 2001. *Jewish Immigrant Entrepreneurship in New York and London, 1880-1914: Enterprise and Culture,,* Basingstoke, Palgrave MacMillan.

GONZALEZ, L. L. & ORTEGA, F. 2009. Immigration and housing booms: Evidence from Spain. *Economics Working Papers.* Barcelona: Department of Economics and Business, Universitat Pompeu Fabra.

GORDON, I., WHITEHEAD, C. & TRAVERS, T. 2007. The Impact of Recent Immigration on the London Economy. London: City of London Corporation.

GUERRA, G. & PATUELLI, R. 2011. The Influence of Role Models on Immigrant Self-Employment: A Spatial Analysis for Switzerland. *Quaderni - Working Paper DSE N° 745.* Bologna: University of Bologna Department of Economics.

HANSON, G. H. 2012. Immigration, Productivity and Competitiveness in American Industry. *Competing for Talent: The United States and High-Skilled Immigration.* Washington DC: American Enterprise Institute.

HART, D. M. & ACS, Z. J. 2011. High-Tech Immigrant Entrepreneurship in the United States. *Economic Development Quarterly,* 25, 116-129.

HONIG, B., DRORI, I. & CARMICHAEL, B. (eds.) 2010. *Transnational and Immigrant Entrepreneurship in a Globalized World,* Toronto: University of Toronto Press.

HOOGENDOORN, S. M. & VAN PRAAG, M. 2012. Ethnic Diversity and Team Performance: A Field Experiment. *IZA Discussion Paper 6731.* Bonn: IZA.

HUBER, P., IARA, A., NOWOTNY, K. & ROBINSON, C. 2010a. Highly Skilled Migration: A survey of the economic literature *In:* HUBER, P., LANDESMANN, M., ROBINSON, C. & STEHRER, R. (eds.) *Migration, Skills and Productivity.* Vienna: WIIW.

HUBER, P., LANDESMANN, M., ROBINSON, C. & STEHRER, R. 2010b. Migration, Skills and Productivity. *Research Reports 365.* Vienna: Vienna Institute for International Economic Studies.

HUNT, J. 2011. Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa. *Journal of Labor Economics,* 29, 417-457.

HUNT, J. 2013. Are Immigrants the Best and Brightest U.S. Engineers? *National Bureau of Economic Research Working Paper Series No. 18696.* Cambridge, Mass: NBER.

HUNT, J. & GAUTHIER-LOISELLE, M. 2010. How Much Does Immigration Boost Innovation? *American Economic Journal: Macroeconomics,* 2, 31-56.

JACOBS, J. 1969. *The Economy of Cities,* London, Vintage.

JAFFE, A. 1996. Economic analysis of research spillovers: Implications for the Advanced Technology Program. *Economic Analysis*, 1-14.

JAFFE, A. & TRAJTENBERG, M. 2002. *Patents, Citations, and Innovations,* Cambridge, MA, MIT Press.

JAFFE, A. B., TRAJTENBERG, M. & HENDERSON, R. 1993. Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations. *The Quarterly Journal of Economics,* 108, 577-598.

JAMAL, A. 2005. Playing to win: an explorative study of marketing strategies of small ethnic retail entrepreneurs in the UK. *Journal of Retailing and Consumer Services,* 12, 1-13.

JAVORCIK, B. S., ÖZDEN, Ç., SPATAREANU, M. & NEAGU, C. 2011. Migrant networks and foreign direct investment. *Journal of Development Economics,* 94, 231-241.

KANGASNIEMI, M., MAS, M., ROBINSON, C. & SERRANO, L. 2012. The economic impact of migration: productivity analysis for Spain and the UK. *Journal of Productivity Analysis,* 38, 333-343.

KAPUR, D. & MCHALE, J. 2005. Sojourns and Software: Internationally mobile human capital and high tech industry development in India, Ireland and Israel. *In:* ARORA, A. & GAMBARDELLA, A. (eds.) *From Underdogs to Tigers: The Rise and Growth of the Software Industry in Brazil, China, India, Ireland and Israel.* Oxford: OUP.

KERR, S. P. & KERR, W. 2011. Economic Impacts of Immigration: A Survey *NBER Working Paper 16736.* Cambridge, MA: NBER

KERR, W. 2008. Ethnic Scientific Communities and International Technology Diffusion. *Review of Economics and Statistics,* 90, 518-537.

KERR, W. & LINCOLN, W. 2010. The Supply Side of Innovation: H-1b Visa Reforms and US Ethnic Invention *NBER Working Paper 15768.* Cambridge, Mass.: NBER

KERR, W. R. 2010. Breakthrough inventions and migrating clusters of innovation. *Journal of Urban Economics,* 67, 46-60.

KERR, W. R., LERNER, J. & SCHOAR, A. 2010. The Consequences of Entrepreneurial Finance: A Regression Discontinuity Analysis. *National Bureau of Economic Research Working Paper Series,* No. 15831.

KLOOSTERMAN, R. & RATH, J. 2001. Immigrant entrepreneurs in advanced economies: mixed embeddedness further explored. *Journal of Ethnic and Migration Studies,* 27, 189-202.

KLOOSTERMAN, R. & RATH, J. 2003. *Immigrant Entrepreneurs: Venturing Abroad in the Age of Globalisation,* Oxford, Berg.

KUGLER, M. & RAPOPORT, H. 2007. International labor and capital flows: Complements or substitutes? *Economics Letters,* 94, 155-162.

LEBLANG, D. 2011. Another Link in the Chain: Migrant Networks and International Investment. *In:* PLAZA, S. & RATHA, D. (eds.) *Diaspora for Development in Africa.* Washington DC: World Bank.

LEVIE, J. 2007. Immigration, In-Migration, Ethnicity and Entrepreneurship in the United Kingdom. *Small Business Economics,* 28, 143-169.

LEWIS, E. 2011. Immigration, Skill Mix, and Capital Skill Complementarity. *The Quarterly Journal of Economics,* 126, 1029-1069.

LEWIS, E. G. 2012. Immigration and Production Technology. *National Bureau of Economic Research Working Paper Series,* No. 18310.

LIGHT, I. 1984. Immigrant and ethnic enterprise in North America*. *Ethnic and Racial Studies,* 7, 195-216.

LIGHT, I. 2004. Immigration and ethnic economies in giant cities. *International Social Science Journal,* 56, 385-398.

LLULL, J. 2008. The Impact of Immigration on Productivity. *CEMFI Working Paper 0802.* Madrid: CEMFI.

LUCAS, R. 1988. On the Mechanics of Economic Growth. *Journal of Monetary Economics,* 22, 3-42.

MAHUTEAU, S., PIRACHA, M., TANI, M. & LUCERO, M. V. 2011. Immigration Policy and Entrepreneurship. *IZA Discussion Paper 6328.* Bonn: IZA.

MALCHOW-MØLLER, N., MUNCH, J. R. & SKAKSEN, J. R. 2011. Do Foreign Experts Increase the Productivity of Domestic Firms? *IZA Discussion Paper 6001.* Bonn: IZA.

MANACORDA, M., MANNING, A. & WADSWORTH, J. 2012. The Impact of Immigration on the Structure of Male Wages: Theory and Evidence from Britain. *Journal of the European Economic Association,* 10, 120-151.

MARÉ, D. C. & FABLING, R. 2011. Productivity and Local Workforce Composition. *In:* 11-10, M. W. P. (ed.). Wellington, NZ: Motu Economic and Public Policy Research.

MARÉ, D. C., FABLING, R. & STILLMAN, S. 2011. Immigration and Innovation. *IZA Discussion Paper 5686.* Bonn: IZA.

MARINO, M., PARROTTA, P. & POZZOLI, D. 2012. Does Labor Diversity Promote Entrepreneurship? *Economics Working Papers 2012-04.* Aarhus: Department of Economics and Business, Aarhus University.

MARKUSEN, J. & VENABLES, A. 1999. Foreign Direct Investment as a Catalyst for Industrial Development *European Economic Review,* 43, 335–356.

MARKUSEN, J. R. & TROFIMENKO, N. 2009. Teaching locals new tricks: Foreign experts as a channel of knowledge transfers. *Journal of Development Economics,* 88, 120-131.

MAZZOLARI, F. & NEUMARK, D. 2012. Immigration and Product Diversity. *Journal of Population Economics,* 25, 1107-1137

MCCANN, P. & ACS, Z. J. 2011. Globalization: Countries, Cities and Multinationals. *Regional Studies,* 45, 17 - 32.

MCEVOY, D. & HAFEEZ, K. 2009. Ethnic enclaves or middleman minority? Regional patterns of ethnic minority entrepreneurship in Britain. *International Journal of Business and Globalisation,* 3, 94-110.

MUDAMBI, R. 2008. Location, control and innovation in knowledge-intensive industries. *Journal of Economic Geography,* 8, 699-725.

MUNDRA, K. 2012. Immigration and Trade Creation for the U.S.: The Role of Immigrant Occupation. *IZA Discussion Paper 7073.* Bonn: IZA.

NATHAN, M. 2011a. Ethnic Inventors, Diversity and Innovation in the UK: Evidence from Patents Microdata. *Spatial Economics Research Centre SERCDP0092.* London: SERC.

NATHAN, M. 2011b. The Long Term Impacts of Migration in UK Cities: Diversity, wages, employment and prices. *SERC Discussion Paper SERCDP0067.* London: Spatial Economics Research Centre.

NATHAN, M. 2012. After Florida: Towards an Economics of Diversity. *European Urban and Regional Studies,* Online First.

NATHAN, M. 2013. Top Team Demographics, Innovation and Business Performance: Findings from English Firms and Cities 2008-9. *Spatial Economics Research Centre Discussion Paper SERCDP0129.* London: LSE.

NATHAN, M. & LEE, N. Forthcoming. Cultural diversity, innovation and entrepreneurship: Firm-level evidence from London. *Economic Geography*.

NIEBUHR, A. 2010. Migration and innovation: Does cultural diversity matter for regional R&D activity? *Papers in Regional Science,* 89, 563-585.

NIELSEN, S. 2010. Top Management Team Internationalisation and Firm Performance. *Management International Review,* 50, 164-180.

ORTEGA, F. & PERI, G. 2012. The Effect of Trade and Migration on Income. *National Bureau of Economic Research Working Paper Series,* No. 18193.

OSTERGAARD, C. R., TIMMERMANS, B. & KRISTINSSON, K. 2011. Does a different view create something new? The effect of employee diversity on innovation. *Research Policy,* 40, 500-509.

OTTAVIANO, G. & PERI, G. 2006. The Economic Value of Cultural Diversity: Evidence from US Cities. *Journal of Economic Geography,* 6, 9-44.

OZGEN, C., NIJKAMP, P. & POOT, J. 2011. The Impact of Cultural Diversity on Innovation: Evidence from Dutch Firm-Level Data. *IZA Discussion Paper 6000.* Bonn: IZA.

OZGEN, C., NIJKAMP, P. & POOT, J. 2012. Immigration and Innovation in European Regions. *In:* NIJKAMP, P., POOT, J. & SAHIN, M. (eds.) *Migration Impact Assessment: New Horizons.* Cheltenham: Edward Elgar.

PAGE, S. 2007. *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools and Societies,* Princeton, Princeton University Press.

PANDYA, S. & LEBLANG, D. 2012. Deal or No Deal: Explaining the Rise of International Venture Capital Investment

PARROTTA, P., POZZOLI, D. & PYTLIKOVA, M. 2010. Does Labor Diversity Affect Firm Productivity? *In:* ECONOMICS DEPARTMENT WORKING PAPER SERIES (ed.) *WP 10-12.* Aarhus: Aarhus School of Business.

PARROTTA, P., POZZOLI, D. & PYTLIKOVA, M. 2011. The Nexus Between Labor Diversity and Firm's Innovation [sic]. *NORFACE Discussion Paper 2011-5.* The Hague.

PARSONS, C. 2005. Quantifying the Trade-Migration Nexus of the Enlarged EU. *Sussex Migration Working Paper no. 27.* Falmer: Sussex Centre for Migration Research, University of Sussex

PASERMAN, D. 2008. Do High-Skill Immigrants Raise Productivity? Evidence from Israeli Manufacturing Firms, 1990-1999. Institute for the Study of Labor (IZA).

PERI, G. 2007. Higher Education, Innovation and Growth. *In:* BRUNELLO, G., GARIBALDI, P. & WASMER, E. (eds.) *Education and Training in Europe.* Oxford: Oxford University Press.

PERI, G. 2012. The Effect Of Immigration On Productivity: Evidence From U.S. States. *Review of Economics and Statistics,* 94, 348-358.

PERI, G. & REQUENA, F. 2010. The Trade Creation Effect of Migrants: Testing the Theory on the Remarkable Case of Spain. *Canadian Journal of Economics,* 43, 1433–1459.

PERI, G. & SPARBER, C. 2011. Highly Educated Immigrants and Native Occupational Choice. *Industrial Relations,* 50, 385-411.

QUISPE-AGNOLI, M. & ZAVODNY, M. 2002. The effect of immigration on output mix, capital, and productivity. *Economic Review-Federal Reserve Bank of Atlanta,* 87, 17-28.

RAM, M. & JONES, T. 2008. Ethnic-minority businesses in the UK: a review of research and policy developments. *Environment and Planning C: Government and Policy,* 26, 352-374.

RATH, J. & KLOOSTERMAN, R. 2000. Outsiders' Business: A Critical Review of Research on Immigrant Entrepreneurship. *International Migration Review,* 34, 657-681.

RAUCH, J. E. & CASELLA, A. 2003. Overcoming Informational Barriers to International Resource Allocation: Prices and Ties. *The Economic Journal,* 113, 21-42.

RAUCH, J. E. & TRINDADE, V. 2002. Ethnic Chinese Networks in International Trade. *Review of Economics and Statistics,* 84, 116-130.

ROMER, P. 1990. Endogenous Technological Change. *Journal of Political Economy,* 98, 71-102.

RUEF, M., ALDRICH, H. E. & CARTER, N. M. 2003. The Structure of Founding Teams: Homophily, Strong Ties, and Isolation among U.S. Entrepreneurs. *American Sociological Review,* 68, 195-222.

SÁ, F. 2011. Immigration and House Prices in the UK. *IZA DP No. 5893.* Bonn: IZA.

SAIZ, A. 2003. Room in the Kitchen for the Melting Pot: Immigration and Rental Prices. *Review of Economics and Statistics,* 85, 502-521.

SAIZ, A. 2007. Immigration and housing rents in American cities. *Journal of Urban Economics,* 61, 345-371.

SAIZ, A. 2011. Immigrants, Hispanics, and the Evolution of Housing Prices in the US. *In:* LEAL, D. L. & TREJO, S. J. (eds.) *Latinos and the Economy.* Springer New York.

SAIZ, A. & WACHTER, S. 2011. Immigration and the Neighborhood. *American Economic Journal: Economic Policy,* 3, 169-88.

SAXENIAN, A.-L. 2002. Silicon Valley's New Immigrant High-Growth Entrepreneurs. *Economic Development Quarterly* 16.

SAXENIAN, A.-L. 2006. *The New Argonauts: Regional Advantage in a Global Economy,* Cambridge, MA, Harvard University Press.

SAXENIAN, A.-L. & SABEL, C. 2008. Venture Capital in the 'Periphery': The New Argonauts, Global Search and Local Institution-Building. *Economic Geography,* 84, 379-394.

SCELLATO, G., FRANZONI, C. & STEPHAN, P. 2012. Mobile Scientists and International Networks. *NBER Working Paper Series 18613.* Cambridge, MA: NBER.

SCHUETZE, H. & ANTECOL, H. 2007. Immigration, Entrepreneurship and the Venture Start-up Process. *In:* PARKER, S. (ed.) *The Life Cycle of Entrepreneurial Ventures.* Springer US.

SCHUMPETER, J. 1962. *The Theory of Economic Development,* Berlin, Springer.

SEPULVEDA, L., SYRETT, S. & LYON, F. 2011. Population superdiversity and new migrant enterprise: The case of London. *Entrepreneurship & Regional Development,* 23, 469-497.

SMALLBONE, D., KITCHING, J. & ATHAYDE, R. 2010. Ethnic diversity, entrepreneurship and competitiveness in a global city. *International Small Business Journal,* 28, 174-190.

STEPHAN, P. & LEVIN, S. 2001. Exceptional Contributions to US Science by the foreign-born and foreign-educated. *Population Research and Policy Review,* 20, 59-79.

STILLMAN, S. & MARÉ, D. C. 2008. Housing Markets and Migration: Evidence from New Zealand. *In:* 08-06, M. W. P. (ed.). Motu Economic and Public Policy Research.

STUEN, E. T., MOBARAK, A. M. & MASKUS, K. E. 2012. Skilled Immigration and Innovation: Evidence from Enrolment Fluctuations in US Doctoral Programmes*. *The Economic Journal,* 122, 1143-1176.

SYRETT, S. & SEPULVEDA, L. 2011. Realising the diversity dividend: population diversity and urban economic development. *Environment and Planning A,* 43, 487-504.

TRAX, M., BRUNOW, S. & SUEDEKUM, J. 2012. Cultural Diversity and Plant-Level Productivity. *IZA Discussion Paper 6845.* Bonn: IZA.

WADHWA, V. 2012. *The Immigrant Exodus: Why America Is Losing the Global Race to Capture Entrepreneurial Talent,* Philadelphia, Wharton.

WADHWA, V., SAXENIAN, A., RISSING, B. A. & GEREFFI, G., (2008). AVAILABLE AT SSRN: 2008. Skilled Immigration and Economic Growth.

WANG, C. L. & ALTINAY, L. 2012. Social embeddedness, entrepreneurial orientation and firm growth in ethnic minority small businesses in the UK. *International Small Business Journal,* 30, 3-23.

WANG, Q. 2010. Immigration and Ethnic Entrepreneurship: A Comparative Study in the United States. *Growth and Change,* 41, 430-458.

WHITEHEAD, C., EDGE, A., GORDON, I., SCANLON, K. & TRAVERS, T. 2011. The impact of migration on access to housing and the housing market: A project for the Migration Advisory Committee: FINAL REPORT. London: LSE / MAC.

ZENOU, Y. 2011. Spatial versus Social Mismatch: The Strength of Weak Ties. *IZA Discussion Papers 5507.* Bonn: Institute for the Study of Labor (IZA).

ZHOU, M. 2004. Revisiting Ethnic Entrepreneurship: Convergencies, Controversies, and Conceptual Advancements1. *International Migration Review,* 38, 1040-1074.

ZUCKER, L. G. & DARBY, M. R. 2007. Star Scientists, Innovation and Regional and National Immigration. *National Bureau of Economic Research Working Paper 13547.* Cambridge, Mass: NBER.

Appendix 1 Table of Studies

A complete table of studies reviewed is set out below. We have not included documents written purely from a policy or marketing perspective unless these include research. The research was assessed using four criteria: 1) is there a clear account of the research process? 2) are the methods appropriate and reliable? 3) is the data of good quality? 4) are the findings credible and clearly related to the evidence? Studies were then assessed on a quality scale of 1 through 3, where 1 is the highest rank. In the main report we generally use only studies ranked 1 and 2, except where studies ranked 3 provide specific information not otherwise available.

Studies are organised by alphabetically, by year published. For each study, we report the economic outcome of interest, the data and country/ies covered, the methodology, and key findings. Publication types are peer-reviewed journal articles (J) / working papers (WP) / books / chapters (B) or reports (R). Findings are not reported for evidence reviews.

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
1	Bonacich (J)	1973	Entrepreneurship	Theory / global	None	Develops the concept of the 'middleman minority' [sic]. Immigrants can become 'orientated' towards both home and host countries, and to immigrant and host communities. This may lead to issues around integration, but also has some economic affordances.	1
2	Light (J)	1984	Entrepreneurship	Review of theory and US empirics	None / sociological analysis		1
3	Aldrich and Waldinger (J)	1990	Entrepreneurship	Theory and review / global	None	Assesses ethnic enterprise research, using a framework based on three dimensions: an ethnic group's access to opportunities, the characteristics of a group, and emergent strategies. Ethnic groups adapt to the resources made available by their environments, which vary substantially across societies and over time.	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
4	Wong (J)	1993	Entrepreneurship, investment	Secondary / Canada	None	Suggests that entrepreneurial and self-employed migration programmes provide opportunity for wealthy foreigners to obtain immigrant status, with questionable benefits. Argues that 'capital via immigration is likely to be encouraged by government and therefore affect class and class relations as well as lead to cultural transformations.'	3
5	Basu (J)	1998	Entrepreneurship	78 Asian small businesses / UK. Firms are largely in the retail, distribution (wholesale) and catering sector and are located in the south-east.	Cross-sectional survey, non-random / snowballed sample	Focuses onsmall retail firms. Finds that entry depends largely on the access to informal, rather than formal, sources of capital and information or advice as well as on the entrant's previous experience. Business success appears to be closely related both to the share of personal capital invested at start-up and to the entrepreneur's educational qualifications. ... The predisposition of many well educated Asian migrants towards establishing businesses with their own capital in an unfamiliar environment illustrates their entrepreneurial spirit. Banks and government agencies could help in future business formation.	2
6	Auerbach and Oreopoulos (J)	1998	Fiscal impacts	Theory / global	None	Emphasises importance of dynamic approach to modelling fiscal impacts: fiscal impact of immigration partly depends on current/future weighting. Fiscal responsibility / austerity policies reduce the fiscal gain from immigration, by dampening consumption side effects. 'Overall, the impact of immigration on fiscal balance is extremely small relative to the size of the overall imbalance itself. Thus, immigration should be viewed neither as a major source of the existing imbalance nor as a potential solution to it.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
7	Basu and Goswami (J)	1999	Entrepreneurship	Cross-sectional survey of 118 Asian small businesses / UK, with annual sales of £2m+ and at least 10 employees	Descriptives + ANOVA	Questions role of cultural factors in shaping SME success. Points to importance of 'educational attainment, personal savings invested at start-up, hard work in the initial stages, and the delegation of responsibilities to non-family members' Also suggests that human capital improvement and product / process innovation influence growth. 'Later entrants into business gained relevant prior work experience and focused on serving non-Asian customers, which may have contributed ... strong evidence that entrepreneurs with larger-sized businesses have developed international linkages and focused on one key business area.'	1
8	Rath and Kloosterman (B)	2000	Entrepreneurship	Secondary (evidence review)	None		2
9	Clark and Drinkwater (J)	2000	Entrepreneurship (self-employment)	Cross-section survey data, n = 8000 / England and Wales	Probit + robustness checks only	Finds that individuals with low English fluency, and recent immigrants, are less likely than other members of ethnic minorities to be self-employed. Perhaps surprisingly, this is also true of individuals living in "enclaves" - areas with a high percentage of their own ethnic group. The relatively deprived nature of such areas of England and Wales may explain this.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
10	Lee and Miller (J)	2000	Fiscal impacts	Projections 1998-2098, various data sources / USA	None / CGE	Authors note that population aging and rising health costs will cause dramatic increases in federal expenditures ... Rising immigration to the United States may help avert this future crisis by slowing population aging and helping to pay for Social Security and public health care. But many immigrants have low education and high fertility, so their net fiscal impact may be costly rather than beneficial ... 'a policy of admitting only high-education immigrants of young working ages could be highly fiscally beneficial, consistent with the findings of Bonin et al. (1998), Auerbach and Oreopolis (2000), and Storesletten (2000). However, such a policy would most likely conflict with other goals of immigration policy.' (p354)	1
11	Storeslette n (J)	2000	Fiscal impacts	Various public data sources / USA	CGE overlapping generations model with calibration on US data	The paper 'investigates whether a reform of immigration policies alone could resolve the fiscal problems associated with the aging of the baby boom generation. Such policies are found to exist and are characterized by an increased inflow of working-age high and medium skilled immigrants. One particular feasible policy involves admitting 1.6 million 40-44 year-old high-skilled immigrants annually.'	1
12	Gandal et al (WP)	2000	Productivity, production technology	Sectoral dataset for K and L in four skill groups, Israel, 1980-1996	Decomposition of capital and labour shares, using production side of H-O model	Authors look at 'two open-economy mechanisms through which Israel may have absorbed changes in labor supplies related to the Russian immigration inflow: the adoption of global changes in production technology, and national changes in the mix of traded goods produced. Our main finding is that global changes in production techniques, which appear consistent with skill-biased technical change, were sufficient to more than offset Israel's change in relative factor supplies due to the Russian influx and other events. We also find that changes in output mix (in either traded or nontraded industries) did not help Israel absorb changes in relative factor supplies.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
13	Godley (B)	2001	Entrepreneurship	Census and marriage records / London, New York	Historical / comparative analysis	Finds that Jewish immigrants in New York were much more likely to move into entrepreneurial occupations than those in London, and it is demonstrated that this was not due to any differences in their backgrounds. Because the immigrant culture emphasized a high degree of conformity, immigrants adopted their host cultural values quickly. Suggests evidence of a relatively anti-entrepreneurial culture in Britain.	2
14	Kloosterman and Rath (B)	2001	Entrepreneurship	Theory and evidence review / global	None		1
15	Kemnitz (J)	2001	Fiscal impacts	Theory	none	Theoretical modelling of the welfare implications of immigration when growth is endogenous. In contrast to standard neoclassical results, immigration will benefit an arbitrary native if and only if the average immigrant possesses more capital than the average native.	1
16	Stephan and Levin (J)	2001	Innovation	Cross-section of 4,500 US scientists and engineers / USA	Descriptive and ANOVA	Paper finds that 'although there is some variation by discipline, individuals making exceptional contributions to science and engineering in the U.S. are disproportionately drawn from the foreign born. Only in the instance of hot papers in the life sciences were we unable to reject the null hypothesis that the proportion is the same as that in the underlying population ... We also find that individuals making exceptional contributions are, in many instances, disproportionately foreign educated, both at the undergraduate and at the graduate level ... We do not investigate, however, whether U.S. scientists and engineers have borne part of thecost of the inflow of foreign talent by being displaced from jobs and/or earning lower wages. Nor do we investigate the cost to the countries of origin.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
17	Basu (B)	2002	Entrepreneurship	163 interviews with London entrepreneurs from six different migrant communities: Indian, East African Asian, Pakistani, Bangladeshi, Turkish Cypriot, Turkish	Descriptive analysis	The findings indicate 'diversity in business entry motives, patterns of start-up finance and family involvement in business among the different ethnic groups. These may be explained by differences in several cultural attributes including family tradition, migration motives, religion, family links, business experience and educational attainment. The evidence suggests that the interaction between culture and entrepreneurship is stronger in the case of some ethnic groups than others.'	2
18	Saxenian (J)	2002	Entrepreneurship, trade	100 + interviews with Silicon Valley entrepreneurs, VC and policy actors / USA	Descriptive analysis	Finds that 'skilled immigrants account for one third of the region's engineering workforce and are increasingly visible as entrepreneurs and investors. Two thirds of the region's foreign-born engineers were from Asia. Chinese and Indian immigrants in turn accounted for 74% of the total Asian-born engineering workforce. In 1998, Chinese and Indian engineers were senior executives at one quarter of Silicon Valley's technology businesses. These immigrant-run companies collectively accounted for more than $26.8 billion in sales and 58,282 jobs. The region's most successful immigrant entrepreneurs rely heavily on ethnic resources while integrating into the mainstream technology economy.'	1
19	Quispe-Agnoli and Zavodny (J)	2002	Productivity	US state-level data, 1982-1992	Spatial correlations with shift-share IV	Finds that 'labour productivity is lower in both high-skill and low-skill industries through immigration. This is likely to be ikely a short run effect related to assimilation.' Note, only 51 obs.	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
20	Girma and Yu (J)	2002	Trade	Bilateral trade flows and migration 1981 and 1991, UK and Commonwealth / non-Commonwealth countries	Gravity model, no causality checks	Immigration from non-Commonwealth countries is shown to have a significant export-enhancing effect. By contrast, immigration from Commonwealth countries is found to have no substantial impact on exports. Authors conjecture that 'this could be because immigrants from the UK's former colonies do not bring with them any new information that can help substantially reduce the transaction cost of trade between their home countries and the host nation. The study also reveals a pro-imports effect of immigration from the non-Commonwealth countries, whereas immigration from the Commonwealth appears to be reducing imports, reflecting trade-substituting activities by immigrants.'	2
21	Rauch and Trindade (J)	2002	Trade	Cross-country analysis, 63 countries, 1980 and 1990	Gravity model using ethnic Chinese population shares, 3 types of goods	Paper finds that 'ethnic Chinese networks, proxied by the product of ethnic Chinese population shares, increased bilateral trade more for differentiated than for homogeneous products. This suggests that business and social networks have a considerable quantitative impact on international trade by helping to match buyers and sellers in characteristics space, in addition to their effect through enforcement of community sanctions. For trade between countries with ethnic Chinese population shares at the levels prevailing in Southeast Asia, the smallest estimated average increase in bilateral trade in differentiated products attributable to ethnic Chinese networks is nearly 60%.'	1
22	Saiz (J)	2003	Consumption (rental prices)	Metro area rent and house prices, 1974-83 / USA	Exogenous shock of Mariel boatlift on Miami, diff in diff with two comparators	Paper looks at the Mariel boatlift, which added an extra 9% to Miami's renter population in 1980. Finds that 'rents increased from 8% to 11% more in Miami than in the comparison groups between 1979 and 1981. By 1983 the rent differential was still 7%. Rental units of higher quality were not affected by the immigration shock. Units occupied by low-income Hispanic residents in 1979 experienced an extra 8% differential hike with respect to other low-income units. Relative housing prices moved in the opposite direction from rents in the short run.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
23	Kloosterman, Russell and Rath (B)	2003	Entrepreneurship	Review	Various		2
24	Ruef et al (J)	2003	Entrepreneurship (composition of founding teams)	830 'nascent' entrepreneurs. Phone interview and questionnaire data collection / USA	Structural event analysis [case-control]. Sociological frameworks	Findings suggest that 'homophily and network constraints based on strong ties have the most pronounced effect on group composition ... We found strong support for one mechanism that influences group composition: homophily with respect to both ascriptive and achieved characteristics (in particular, gender, ethnicity, and occupation).'	1
25	Storesletten (J)	2003	Fiscal impacts	Macro modelling with Swedish data	CGE analysis	The paper computes the net fiscal effects from admitting immigrants into a welfare state with large expenditures and a large tax burden (Sweden). Finds that 'the present value of future tax revenues minus outlays is potentially large; USD 23,500 per young working-age immigrant, but an average new immigrant represents a net government loss of USD 20,500. The dominant factors are employment rates and age.'	2
26	Rauch and Casella (J)	2003	Investment, trade (sending and receiving)	Theory	None	Main takeway from the model is that 'incomplete information creates matching friction that interferes with the ability of prices to allocate scarce resources across countries but can be overcome by international information-sharing networks.'	1
27	Edin et al (J)	2003	Wages / Entrepreneurship	6418 migrants, 1987-1989 / Sweden	IV, exploiting policy experiment (randomised initial location)	Paper finds that 'when sorting is taken into account, living in enclaves improves labor market outcomes for less skilled immigrants: the earnings gain associated with a standard deviation increase in ethnic concentration is 13 percent. Furthermore, the quality of the enclave seems to matter. Members of high-income ethnic groups gain more from living in an enclave than members of low-income ethnic groups.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
28	Basu (J)	2004	Entrepreneurship	Interviews with 60 immigrant entrepreneurs from five different ME communities / UK	Non-random sample, exploratory analysis	Results suggest that 'it is possible to distinguish between those with business-first, family-first, money-first and lifestyle-first aspirations. Their educational and family background affects entrepreneurs' aspirations, as does their stage on the family life cycle. Differences in aspirations are related to the nature of business, the way in which it is managed, the recruitment of professional managers and entrepreneurial performance. Our findings highlight the diversity in aspirations among family business owners and the complexity of the interaction between ethnicity, culture, class and entrepreneurship.'	2
29	Zhou (J)	2004	Entrepreneurship	Review	None		2
30	Light (J)	2004	Entrepreneurship (low wage, informal)	Sociological analysis	None	Discusses how low-wage immigration 'actually proceeds in First World cities. Argues that 'since low-wage immigration is always linked to migration networks, immigrants initially cluster in selected regions, metropolitan areas, and cities. The regional and local clustering of supply-driven immigrants focuses and intensifies their local impact. Regional and metropolitan clustering intensifies immigrants' pressure upon mainstream labour and housing markets, driving down their wages and living conditions. Ultimately, when some standard of intolerance for poverty is breached, the immigrants' substandard housing and employment conditions compel municipal enforcement of health, housing, and working standards, thus shutting down the municipality's employment buffers ... Once these new sites are colonised, the continuing migration repeats the same process of migration saturation – buffer expansion – buffer saturation – dispersal. In this manner, the migration process expands into the entire territory of the destination country, breaking out of its initial encapsulation.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
31	Coleman and Rowthorn (J)	2004	Fiscal impacts, public services	Review	None		2
32	Jamal (J)	2005	Entrepreneurship	Semi-structured interviews with Chinese, Pakistanis and Bangladeshis in London and Cardiff, n = 19 / UK	None / explorative	Finds that 'ethnic entrepreneurs engage in a number of marketing practices that reveal their competency, innovation and networking abilities to successfully compete in a competitive context ... revealing their role as bicultural mediators seeking to facilitate negotiations of multiple identities by their multi-ethnic consumers. The paper discusses implications for marketers of mainstream brands who are interested in targeting ethnic minority consumers.'	2
33	Chiswick (WP)	2005	Entrepreneurship, innovation, productivity, fiscal impacts	Review	None		1
34	Constant and Zimmerman (WP)	2005	Fiscal impacts	Review	None		2/ 3

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
35	Fougere et al (R)	2005	Fiscal impacts	Macro modelling with Canadian data	CGE model, overlapping generations	Paper finds that 'selecting the same proportion of high-skilled immigrants as in the second half of the 1990s would raise labour productivity and living standards in the long run. It could also reduce the expected negative impact of population ageing on growth in real GDP per-capita by about one-quarter. In addition, raising the proportion of high-skilled immigrants by 0.25% of the population each year could reduce by another 50% the anticipated decline in real GDP growth. However, these gains are conditional upon the recognition of permanent residents' credentials. Finally, attracting more high skilled immigrants may significantly reduce the skill premium, which on one hand lowers earnings inequality between high and low skilled workers, but on the other hand may reduce incentives for young adults to invest in human capital.'	2
36	Lewis (J)	2005	Investment / physical capital, productivity	US data		Finds that automation and low-skilled migration are substitutes for each other.	1/2
37	Parsons (WP)	2005	Trade	EU-15 countries	Gravity model	The results indicate that 'Eastern European immigrants exert a positive influence on both EU-15 imports and exports. It is predicted that a 10% rise in Eastern European immigration will increase EU-15 imports from these countries by 1.4% and EU-15 exports by 1.2%. These results indicate that immigrants' demand for native products outweighs the increase in trade associated with immigrants forming business-links between European trading partners.'	2
38	Combes et al (J)	2005	Trade	Theory		Information channel: migrants improve investor information about home countries Preference channel: migrant s create demand for goods produced in the home country.	1
39	Saxenian (B)	2006	Immigration, entrepreneurship	Quali, US Bay Area	Review		1

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40	Kugler and Rapoport (WP)	2006	Investment, trade (sending country)	Theory	None	Main takeaway from the model is that 'a brain gain seems possible, as migration of skilled labour can have a positive impact on the sending country thanks to remittances, return migration, network externalities, diasporas and reduced corruption in the country of origin.'	1
41	Card (WP)	2007	Consumption and fiscal impacts	Review, focused on US cities	None		2
42	Acs and Szerb (J)	2007	Entrepreneurship	Review	None		2
43	Anderson and Platzer (R)	2007	Entrepreneurship	Secondary analysis of US data, non-peer reviewed	Descriptive analysis	Notes that immigrants have started 25% of VC-backed US public companies; immigrants have started 40% of VC-backed tech companies currently trading. Examples include Google, Sun, Yahoo, EBay.	2

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44	Levie (J)	2007	Entrepreneurship	Stratified sample from GEM 2003-4 data, n = 38,046 / UK	Pooled and 'case-cohort' samples, but no causality checks	Paper finds that 'new business activity varies with migrant status and ethnicity. Multivariate analysis suggests that migration increases the odds of engaging in new business activity, that the independent effect of ethnicity is marginal, and that being a recent ethnic minority migrant decreases the odds, after controlling for other individual level factors. At the regional level, a preliminary analysis suggests that gross migration flow has a higher correlation with new business activity than other commonly used regional demographic or economic development measures.'	2
45	Wadhwa et al (WP)	2007	Entrepreneurship	Survey and interviews, plus patent analysis, US	Descriptives only	The key findings are that killed migrants account for24% of new patent apps in the US, 25% of high-growth high-tech firms, and 12% of residents.	2
46	Gordon et al (R)	2007	Entrepreneurship, innovation, trade	Review and descriptive stats / UK	Mixed methods	HIghlights likely wider economic roles of skilled migrants in London economy.	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
47	Schuetze and Antecol (B)	2007	Entrepreneurship, policy design	Census microdata on male self-employment and wages for immigrants and natives, 1981 and 1990 / US, Australia and Canada	Borjas cohort approach. But no controls for individual unobservables	Authors find 'positive and statistically significant growth in the self-employment propensities of newly arriving immigrants, over and above that of similar natives ... despite very different rates of self-employment, we find that rates of self-employment catch up to and overtake those of similar natives within 10 to 20 years after arrival ... we find evidence that, while immigration policy may affect self-employment outcomes at the margin the most substantial determinants are likely other institutional/market structure forces that attract entrepreneurs [i.e. interaction of institutions, market structure and self-selection] ... looking across countries we do indeed find evidence that suggests that immigration policy has an impact. These impacts were most evident in the Australian results. For example, Australia's relatively rigorous "points" requirements for entry appear to have had the expected effects both in terms of self-employment business start-up and earnings outcomes.''	2
48	Saiz (J)	2007	Housing rents	Metro area analysis, using c-section and longitudinal data, 1983-1997 / US	IV using shift-share instrument	Finds that immigration pushes up rents and housing values in US destination cities. 'An immigration inflow equal to 1% of a city's population is associated with increases in average rents and housing values of about 1%. The results suggest an economic impact that is an order of magnitude bigger than that found in labour markets.'	1
49	Peri (B)	2007	Innovation (skilled migrants)	State-level data / US	OLS	Argues that 'migration of human capital could be a viable and effective way of increasing supply of skills in Europe. However the migration channel in most cases has not worked to improve the skills of the European labour force. Finally, estimates on a so-called 'dynamic effect' of highly-educated and talented workers on the rate of scientific and technological innovation is discussed. US states' share of foreign-born PhDs is positively associated with levels of patenting.'	2

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50	Kugler and Rapoport (J)	2007	Investment, trade	Bilateral migration and FDI data for 55 countries, 1990 and 2000 / US	Diff in diff	Results show that 'brain drain and FDI inflows are negatively correlated contemporaneously but that skilled migration is associated with future increases in FDI inflows. We also find suggestive evidence of substitutability between current migration and FDI for migrants with secondary education, and of complementarity between past migration and FDI for unskilled migrants.'	1
51	Putnam (J)	2007	Productivity, social capital	Cross-sectional neighbourhood-level data / US	OLS	Notes that 'ethnic diversity is increasing in most advanced countries, driven mostly by sharp increases in immigration. In the long run immigration and diversity are likely to have important cultural, economic, fiscal, and developmental benefits. In the short run, however, immigration and ethnic diversity tend to reduce social solidarity and social capital. New evidence from the US suggests that in ethnically diverse neighbourhoods residents of all races tend to 'hunker down'. Trust (even of one's own race) is lower, altruism and community cooperation rarer, friends fewer. In the long run, however, successful immigrant societies have overcome such fragmentation by creating new, cross-cutting forms of social solidarity and more encompassing identities.'	2

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52	Zucker and Darby (WP)	2007	Innovation (star scientists)	5401 star scientists, 1981-2004 [star = most highly cited], US	Descriptives and OLS	Paper follows the careers 1981-2004 of 5401 star scientists listed in ISI HighlyCitedSM as most highly cited by their peers. Finds that 'their number in a US region or a top-25 science and technology (S&T) country significantly increases the probability of firm entry in the S&T field in which they are working. Stars rather than their disembodied discoveries are key for high-tech entry. Stars become more concentrated over time, moving disproportionately from areas with few peers in their discipline to many, except for a countercurrent of some foreign-born American stars returning home. High impact articles and university articles all tend to diffuse. America has 62 percent of the world's stars as residents, primarily because of its research universities which produce them. Migration plays a significant role in some developing countries.'	2
53	Frattini	2008	Consumption, prices	UK RPI and CPI data, 1995-2006	IV with shift-share instrument	Finds that 'immigration had significant but quantitatively limited effects on prices, and that the effects were different for services and tradeable goods. Immigration contributed to reduce price growth of services in sectors with a high concentration of low-wage workers such as restaurants, bars, and take-away food through its effects on labour supply. Conversely there is some evidence that immigration increased the price of low-value grocery goods via demand side effects.'	1
54	Altinay and Altinay (J)	2008	Entrepreneurship	227 face-to-face structured interviews with Turkish small business owners in London / UK	Random sample, descriptive analysis and chi-sq tests	Finds a relationship between fluency in English and business growth in all sectors. Education appears to be an important variable for the business growth of the firms in the catering and service sectors. Reliance on co-ethnic market is a key contributor to growth of firms in the retailing sector. Supports linkage between internal and external environments of entrepreneurship thus providing support for the “mixed embeddedness” approach to explaining ethnic minority business growth.	2

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55	Bagwell (J)	2008	Entrepreneurship	Focus on Vietnamese nail-care sector. Interviews with 10 owner-managers, 4 others in London	None	Highlights 'the importance of transnational family networks within all aspects of the business and suggest that these links can sometimes provide a fertile source of new business ideas, but can equally limit innovation. The presence of innovative and well-educated members within the entrepreneurs' "strong-tie" network appeared to encourage more successful business development and diversification.'	3
56	Ram and Jones (J)	2008	Entrepreneurship	Review	None		2
57	Wadhwa et al (WP)	2008	Entrepreneurship, innovation	Surveys and interviews of 2k startup founders, 1500 firms in tech clusters, 800 immigrant and US founders	Random sampling	Key finding is that 'advanced education in STEM fields (science, technology, engineering and mathematics) is correlated with high rates of entrepreneurship and innovation among both immigrant and U.S.-born founder populations.'	2
58	Saxenian and Sabel (J)	2008	Entrepreneurship, trade (home impacts)	Case studies / US and Taiwan	Case study	Examines 'the case of Taiwan, where first-generation immigrant professionals from U.S. technology industries have collaborated with their home-country counterparts to develop the context for entrepreneurial development. The most significant contributions of these skilled professionals to their home countries are participation in external search and domestic institutional reform.'	2

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59	Rowthorn (J)	2008	Fiscal impacts	Review	None		2
60	Chelleraj et al (J)	2008	Innovation	US data	None	Finds that 10% in share of foreign grad students is linked to a 4.5% increase in patent applications, 5.1% in patents granted.	2
61	Kerr (WP)	2008	Innovation	US patent data, city-level analysis, 1975-2007	Classification using ethnic names database, descriptive analysis	Finds that 'contributions of Chinese and Indian scientists and engineers to US technology formation increase dramatically in the 1990s. At the same time, these ethnic inventors became more spatially concentrated across US cities. The combination of these two factors helps stop and reverse long-term declines in overall inventor agglomeration evident in the 1970s and 1980s. The heightened ethnic agglomeration is particularly evident in industry patents for high-tech sectors, and similar trends are not found in institutions constrained from agglomerating (e.g., universities, government).'	1
62	Agrawal et al (J)	2008	Innovation (knowledge diffusion)	USPTO patent and demographic data for US MSAs, focus on effects of Indian co-ethnicity	Case control using patent pairs, based on Jaffe et al (1993) and Thompson and Fox-Kean (2005)	Finds that 'spatial and social proximity both increase the probability of knowledge flows between individuals, but the marginal benefit of geographic proximity is greater for inventors who are not socially close ... the marginal benefit of being members of the same technical community of practice is greater in terms of access to knowledge for inventors who are not co-located. Overall, these results imply that spatial and social proximity are substitutes in their influence on access to knowledge. We discuss the implications of these findings in terms of the optimal dispersion of socially connected inventors.'	1

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63	Kerr(J)	2008	Innovation, entrepreneurship, productivity	USPTO patent data, ethnic names database, country*sector manufacturing output data 1985-97	IV using HB1 quotas	Explores the role of U.S. ethnic scientific and entrepreneurial communities for international technology transfer to their home countries. 'International patent citations confirm knowledge diffuses through ethnic networks, and manufacturing output in foreign countries increases with an elasticity of 0.1–0.3 to stronger scientific integration with the U.S. frontier. Ethnic technology transfers are particularly strong in high-tech industries and among Chinese economies.'	1
64	Llull	2008	Productivity	Cross-country panel, 24 countries, 1960-2005	Panel data, IV from migrant-push gravity model	Provides 'cross-country macro evidence on the effect of immigration on productivity. Results suggest a negative impact of immigration on productivity that is partially offset by a positive effect on participation and employment.'	1
65	Paserman (WP)	2008	Productivity (high skill migrants)	Firm-level data for Israeli MFs, 1990-1999	Cross-sectional, pooled OLS and first differences	Finds 'no correlation between immigrant concentration and productivity at the firm level in cross-sectional and pooled OLS regressions. First-differences estimates, which control for fixed unobserved differences between firms, reveal, if anything, a negative correlation between the change in output per worker and the change in the immigrant share. A more in-depth analysis reveals that the immigrant share was strongly negatively correlated with output and productivity in low-tech industries. In high-technology industries, the results tend to point to a positive relationship, hinting at complementarities between technology and the skilled immigrant workforce.'	2
66	Ottaviano and Peri (J)	2006	Productivity (wages) // housing rents	US metro areas, 1970-1990	Panel data, IV from shift-share instrument	The diversity of the migrant population leads to significant increase in native wages and in the rental price of housing. As people and firms are mobile across cities in the long run, this implies thatthese correlations are consistent with a net positive effect of cultural diversity on the productivity of natives.	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
67	Grossman and Stadelmann (WP)	2008	Public goods investment (host and source countries)	National migration and income data, 77 countries, 1990 and 2000	3SLS structural equation model	Paper shows that 'international integration of the market for skilled labor aggravates between-country income inequality by harming those which are source economies to begin with while benefiting host economies. When brain drain increases in source economies, public infrastructure investment is optimally adjusted downward, whereas host economies increase it. Evidence from 77 countries well supports our theoretical hypotheses.'	1
68	Lancee and Dronkers	2008	Social capital	Netherlands local level data, n = 5757	Multi-level regression	Paper finds that 'both for immigrants and native residents 1) neighborhoods' ethnic diversity reduces individual trust in neighborhoods; 2) those with neighbors of a different ethnicity have less trust in neighborhoods and neighbors 3) a substantial part of the effect of neighborhoods' ethnic diversity on individual trust can be explained by the higher propensity of having neighbors of a different ethnicity. We conclude that ethnic diversity can have a negative effect on individual trust. However, we do not find these negative effects of neighborhoods' or neighbors ethnic diversity.'	2
69	McEvoy and Hafeez (J)	2009	Entrepreneurship	5x minority ethnic groups in England and Wales	Correlations	Authors find that 'self-employment in these groups is inversely related to minority share in the regional economically active population. The sectoral diversity of minority enterprises is positively related to their share in the regional economically active population.'	2

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70	Baycan-Levent and Nijkamp (J)	2009	Entrepreneurship	Review from Denmark, Germany, Greece, Italy, the Netherlands, Portugal, Sweden, and the UK	None		2
71	Georgarakos and Tatsirimos (J)	2009	Entrepreneurship (business survival)	Firm-level panel, n = 4547, 1996-2000 / US	Hazard model with robustness checks	Authors find a 'lower survival probability in entrepreneurship for Mexican and other Hispanic immigrants, which does not carry on to their U.S.-born descendants. We also find that these two immigrant groups tend to enter entrepreneurship from unemployment or inactivity and they are more likely to exit towards employment in the wage sector, suggesting that entrepreneurship represents for them an intermediate step from non-employment to paid employment.'	1/ 2
72	Drori et al (B)	2009	Entrepreneurship (transnational)	Review	None		2
73	Kitching et al (J)	2009	Entrepreneurship, trade	Case studies of 4 BME-owned in firms London, semi-structured interviews	None	Under certain conditions, diaspora-based networks enable higher levels of business competitiveness by facilitating a) access to resources b) market access. Exploiting these depends on 1) capabilities and motives 2) diaspora structures (size, location, sectors) and 3) what diasporas make available to owners. Restrictions from diasporas may constrain business performance. 'Diaspora-based networks ... do not negate the importance of class resources such as property, education and skills.'	2/3

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74	Gonzalez and Ortega (WP)	2009	House prices, construction activity	Spanish province data, 1998-2008	Shift-share IV	Paper shows that 'between 1998 and 2008, the average Spanish province received an immigrant inflow equal to 17% of the initial working-age population. We estimate that this inflow increased house prices by about 52% and is responsible for 37% of the total construction of new housing units during the period. These figures imply that immigration can account for roughly one third of the housing boom, both in terms of prices and new construction.'	1
75	Markusen and Trofimenko (J)	2009	Investment, productivity	Plant-level data for Colombia	Fixed effects, matching based on nearest neighbours	Foreign experts may train domestic workers who work with them. Paper suggests that workers learn from experts (the effect of using an expert is not strictly temporary) and that this learning is embodied in the workers rather than in the firm. 'These experts have substantial and persistent positive effects (though not always immediate) on the wages of domestic workers and on the value added per worker.'	1
76	Hart (WP)	2010	Business formation and performance	Survey [n = 24,000] and interview data [n = 1300 firms] with high-tech firms, US.	OLS analysis, 'exploratory'. NB positive selection in both samples	Paper uses 'original quantitative and qualitative data on the U.S. high-tech sector to examine empirically hypotheses that flow from the theoretical exploration. We find that homophily drives team formation and that nationality diversity in founding teams has a modest impact on firm performance.'.	2

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77	Crick and Chaudry (J)	2010	Entrepreneurship	Postal survey (n = 98) and semi-structured interviews (n=8), UK-based Asian entrepreneurs	Descriptives. NB sample = non-random	Paper shows that 'a number of differences exist between two identified groups of entrepreneurs. First, internationally oriented Asian entrepreneurs were those of an Asian origin whose primary manufacturing operations were based in the UK but who were involved in overseas sales. Transnational entrepreneurs in comparison ... leveraged resources in their country of origin in order to serve overseas markets ... findings indicate that transnational entrepreneurs are able to utilize the advantages of operating in two socially embedded environments to aid competitiveness in a way that their one-country counterparts are not.'	2
78	Honig et al (B)	2010	Entrepreneurship	Review	None		1
79	Wang (J)	2010	Entrepreneurship	US Census microdata, 2000	Multilevel regression	Authors find that 'whites and blacks are more likely to own businesses in newer immigration gateways, while Hispanics and Asians are more likely to do so in the more established gateways. In addition, differences as to the interaction effects of gender and regional labor markets are the most significant for blacks and Asians.'	2
80	Clark and Drinkwater (J)	2010	Entrepreneurship (self-employment)	1991 and 2001 Census SARs data + QLFS, 5x main minority ethnic groups, UK	Descriptive analysis only. No skillgroups analysis	Authors find that 'rates of self-employment have fallen for Indians and the Chinese and argue that this is due to increased opportunities in paid employment, partly brought about by demographic change. However, entrepreneurs from these groups still work the longest hours. In contrast, self-employment rates have risen for Black Caribbean males in recent years and remain high for Pakistani males. We also document how the proportion of the self-employed with employees has varied over time and discuss trends in the extent to which the self-employment of different ethnic groups is concentrated within particular sectors.'	2

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81	Huber et al (B)	2010	Entrepreneurship, innovation, productivity	Review	None		1
82	Dustmann et al (J)	2010	Fiscal impacts of A8 migrants	Individual level data UK		Main findings are that 'A8 immigrants who arrived after EU enlargement in 2004 and who have at least one year of residence, and are therefore legally eligible to claim benefits, are 59 per cent less likely than natives to receive state benefits or tax credits and 57 per cent less likely to live in social housing. Furthermore, even if A8 immigrants had the same demographic characteristics as natives, they would still be 13 per cent less likely to receive benefits and 29 per cent less likely to live in social housing. ... In each fiscal year since enlargement in 2004, irrespective of the way that the net fiscal contribution is defined, A8 immigrants made a positive contribution to the public finances despite the fact that the UK has been running a budget deficit over the last few years. This is because they have a higher labour force participation rate, pay proportionately more in indirect taxes and make much less use of benefits and public services.'	2
83	Niebuhr (J)	2010	Innovation	R&D data for 95 German NUTS3 regions	Cross-section	The paper finds that 'differences in knowledge and capabilities of workers from diverse cultural backgrounds enhance performance of regional R&D sectors. As regards innovation, the benefits of diversity seem to outweigh the costs caused, for example, by communication barriers.'	2
84	Lee and Nathan (J)	2010	Innovation	Survey data for 2300 firms, London	Cross-sectional	The authors find significant positive links between workforce and ownership diversity, and product and process innovation. These provide some support for claims that London's cultural diversity is a source of economic strength.	2

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85	Kerr (J)	2010	Innovation and 'breakthrough inventions'	Patenting growth in US metro areas and technology fields, 1990-2004	Cross-sectional growth estimations, reduced-form estimator using H1B changes	Finds that 'patenting growth is significantly higher in cities and technologies where breakthrough inventions occur after 1984 relative to peer locations that do not experience breakthrough inventions. This growth differential depends on the mobility of the technology labor force ... Spatial adjustments are faster for technologies that depend heavily on immigrant inventors.'	1
86	Hunt and Gauthier-Loiselle (J)	2010	Innovation and skilled migrants	Individual and state-level data 1940-2000, US	Panel and shift-share instrument	Finds that 'immigrant contribution to patenting is entirely explained by selection into science and engineering - not ability. (vs e.g. Stephan and Levin, Chelleraj et al). We also show that a 1 percentage point increase in immigrant college graduates' population share increases patents per capita by 9-18 percent. Our instrument for the change in the skilled immigrant share is based on the 1940 distribution across states of immigrants from various source regions and the subsequent national increase in skilled immigration from these regions.'	1
87	Kerr and Lincoln (J)	2010	Innovation and skilled migrants	Ethnic inventors database and patenting by Indian / Chinese-origin inventors	Panel data, instrument based on H1B visa allocation. NB assume ethnic inventors are largely migrants	Authors show that 'h H-1B admissions increase immigrant science and engineering (SE) employment and patenting by inventors with Indian and Chinese names in cities and firms dependent upon the program relative to their peers. Most specifications find limited effects for native SE employment or patenting. We are able to rule out displacement effects, and small crowding-in effects may exist. Total SE employment and invention increases with higher admissions primarily through direct contributions of immigrants.'	1

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88	Leblang (J)	2010	Investment	Dyadic data for portfolio and FDI, <= 56 source and 154 destination countries, 2002	Cross-sectional	Author suggests that 'diaspora networks—connections between migrants residing in investing countries and their home country—influence global investment by reducing transaction and information costs. This hypothesis is tested using dyadic cross-sectional data for both portfolio and FDI. The findings indicate that even after controlling for a multitude of factors, disapora networks have both a substantively significant effect and a statistically significant effect on cross-border investment.'	2
89	Docquier and Lodigliani (J)	2010	Investment / FDI on sending countries	FDI and migrant stocks, 1990-2000 / 114 countries. Aggregate FDI stocks not bilateral data	Cross-section and dynamic panel settings, decomposition by migrant skillgroup.	Finds that 'in both cross-sectional and panel frameworks, we find evidence of strong network externalities, mainly associated with the skilled diaspora. The recent literature on the brain drain reveals the human capital response to skilled migration is likely to be positive in large countries characterized by low rates of migration. This paper brings an additional channel through which large countries may benefit from skilled migration: having a large educated diaspora abroad stimulates physical capital accumulation. On the other hand, small countries are less likely to benefit from skilled migration.'	1
90	Nielsen (J)	2010	Market entry, profitability (top management teams)	165 Swiss firms, 2002-4	Pooled cross-section with factor analysis for TMT composition	Results suggest that 'TMT internationalization leads to subsequent foreign market entries, which in turn are positively related to firm performance.' Latter ismeasured by index of profitability.	2
91	Azanert (J)	2010	Productivity	Theory	None	Model suggests that 'a highly skilled immigration can be growth enhancing if the positive contribution of the imported brains to the host economy's human capital stock outweighs the immigration-induced adverse effect on educational incentives for natives, or growth depleting if the latter effect dominates.'	1

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92	Parotta et al (WP)	2010	Productivity (TFP)	Employer-employee data, Danish firms, 1995-2005	Structural equation modelling of TFP, IV firm diversity using commuting area demographics	Authors show that 'labor diversity in skills/education significantly enhances firm performance as measured by firm TFP. Conversely, diversity in demographics and ethnicity brings mixed results – both dimensions of workforce diversity have either no or negative effects on firm TFP. However, we find that ethnic diversity is valuable for firms operating in industries characterized by above-average trade openness, giving support to the hypothesis that an ethnically diverse workforce provides information and access to global markets.'	1
93	Peri (2010) (R)	2010	Productivity, investment, employment	US states, 1960-2008	Panel data analysis, no IV	Argues that 'immigrants expand the economy's productive capacity by stimulating investment and promoting specialization. This produces efficiency gains and boosts income per worker. At the same time, evidence is scant that immigrants diminish the employment opportunities of U.S.-born workers.' Note correlations, not causal effects.	2
94	Peri and Requena (J)	2010	Trade	50 Spanish provinces and 77 trading countries, 1995-2008	Bilateral trade model for individual transactions, transaction value, and immigration. Shift-share IV	Finds that 'immigrants significantly increase exports and that the effect is almost entirely due to an increase in the extensive margin. Consistent with the idea that immigrants reduce the fixed cost of exporting, we find stronger effects for differentiated goods and for countries culturally distant from Spain.'	1
95	Smallbone et al (J)	2010	Urban economic development	Review	None		2 /3

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96	Lee (J)	2011	Employment	53 English cities, 1981-2001	OLS	Finds that 'cities with a high proportion of their populations born abroad in 1981 grew faster in the subsequent 10 years. Neither diversity by country of birth nor ethnic diversity is significant in the period 1991—2001. However, when variables accounting for both are included together, it appears that cities with a large number of migrants saw higher employment growth in the 1990s, but that ethnically diverse cities were less successful.'	2
97	Jones et al (J)	2011	Entrepeneurship	British Indian community	Qualitative	Argues that 'the Indian community in the UK is exemplifying an 'ethnic entrepreneurial transition'. Impressive educational credentials, an increasing presence in the professions and diversification into new and emerging sectors are gradually changing the profile of Indian entrepreneurship.'	2
98	Guerra and Patueli (WP)	2011	Entrepreneurship	2490 Swiss municipalities	Spatial autoregressive model	Finds a 'significant (positive) effect of spatial network effects from existing to new ethnic entrepreneurs, which are characterized by a quick distance decay, suggesting spatial spillovers at the household and social network level. Additionally, we show that local conditions and immigrant pool characteristics differ, with respect to self-employment choices, when examining urban and rural contexts.'	1/2
99	Hart and Acs (J)	2011	Entrepreneurship, employment, R&D/patenting	Sample of 'high-impact' tech firms (n = 1300) and founders (n = 2000), 2002-6, US	Descriptive stats and OLS	Finds that 'about 16% of the companies in the sample number at least one immigrant entrepreneur among their founding teams, while about 77% of the immigrant entrepreneurs are U.S. citizens. Regressions compare high-impact, high-tech firms that count at least one immigrant in their founding teams with those that were founded by native-born entrepreneurs. It is found that the two groups of firms are similar with respect to economic and technological performance. Immigrant-founded firms are more likely to report that they have a strategic relationship with a foreign firm.'	2

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100	Sa (WP)	2011	House prices	English LA and regions data	Panel and IV	Finds that 'immigration has a negative effect on house prices and presents evidence that this negative effect is due to the mobility response of the native population. Natives respond to immigration by moving to different areas and those who leave are at the top of the wage distribution. This generates a negative income effect on housing demand and pushes down house prices. The negative effect of immigration on house prices is driven by local areas where immigrants have lower education.'	2
101	Saiz (B)	2011	House prices and rents	USA metros and neighbourhoods, focus on Hispanic immigration	Panel and shift-share IV	Finds that 'cities that received immigrants experienced faster housing price and rent appreciation during the last two decades of the 20th century. Hispanic-dense metropolitan areas have more expensive housing. Part of the price differential is due to the growth in the Hispanic population, and we derive a statistical causal link between Hispanic growth and average housing price growth. However, within metropolitan areas it is precisely those neighborhoods with increasing Hispanic share where relatively slower housing price and rent appreciation took place. The facts are consistent with immigrant and Hispanic population growth generally driving up the demand for living in a city, but with increasing ethnic segregation within the city.'	1
102	Saiz and Wachter (J)	2011	House prices and rents	US metros	Panel and shift-share IV	'Finds a causal impact from growing immigrant density to native flight and relatively slower housing value appreciation. Further evidence indicates that these results are driven more by the demand for residential segregation based on ethnicity and education than by foreignness per se.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
103	Whitehead et al (R)	2011	Housing prices, skilled migrants	Tier 1 and Tier 2 populations plus LFS, APS, EHS, UK	Descriptives and modelling	Finds that 'skilled non- EU migrants in the UK mostly live in privately rented accommodation and have affected house prices by less than 1 per cent over 5 years.'	1
104	Algan et al (WP)	2011	Housing provision / safety	Ethnic and religious diversity data, social interactions and crime, housing block level, France	Exogeneity of public housing allocations to deal with selection issues	Differentiating among three channels of public goods provision, the paper finds that 'heterogeneity in the housing block leads to low levels of sanctions for anti-social behavior and low levels of collective action to improve housing conditions, but no losses in public safety.'	1
105	Parotta et al (WP)	2011	Innovation	Employer-employee data, Denmark	Panel, pre-sample info for firms, IV based on commuting area demographics	Finds that 'skill and ethnic diversity plays an important role in propelling firm's innovation outcomes. Conversely, the effect of demographic diversity typically vanishes once detailed firm-specific characteristics are included as control variables.'	1
106	Mare et al (WP)	2011	Innovation	Firm-level and census data, 1999-2008, New Zealand	Panel and IV with 5-year lags	Main finding is 'a positive relationship between local workforce characteristics and average innovation outcomes in labour market areas, but this is accounted for by variation in firm characteristics such as firm size, industry, and research and development expenditure. Controlling for these influences, we find no systematic evidence of an independent link between local workforce characteristics and innovation.'	1/2
107	Ozgen et al (WP)	2011	Innovation	Dutch employer-employee data, 4582 firms	Panel with shift-share / amenities-based IVs	Finds that 'excluding firms in the hospitality industry and other industries that employ low-skilled migrants, firms in which foreigners account for a relatively large share of employment are somewhat less innovative. However, there is strong evidence that firms that employ a more diverse foreign workforce are more innovative, particularly in terms of product innovations.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
108	Ostergaard et al (J)	2011	Innovation	Employer-employee dataset, diversity in terms of gender/ age / education/ ethnicity	Cross-section	Shows a 'positive relation between diversity in education and gender on the likelihood of introducing an innovation. Furthermore, we find a negative effect of age diversity and no significant effect of ethnicity on the firm's likelihood to innovate. Positive relationship between an open culture towards diversity and innovative performance. We find no support of any curvilinear relation between diversity and innovation.'	2
109	Ozgen et al (WP)	2011	Innovation (incl. skilled migrants)	Patents and demographic data for 170 EU NUTS2 regions, 1991-2001	Panel with controls for spatial auto-regression, IV based on density of McDonalds restaurants to population	Finds that 'an increase in patent applications in a region is associated with (i) net immigration; (ii) the share of foreigners in the population of the region; (iii) the average skill level of the immigrants; and (iv) the cultural diversity of the immigrants. The magnitude of these effects varies between types of patents.'	1
110	Nathan (WP)	2011	Innovation and skilled migrants	EPO patent data, ethnic inventor name classification, 1993-2004, UK	Fixed effects based on historic information, lags IV	Finds 'small positive effects of South Asian and Southern European co-ethnic group membership on individual patenting. The overall diversity of inventor communities also helps raise individual inventors' productivity. I find no hard evidence that ethnic inventors crowd out patenting by majority groups.'	1
111	Gagliardi (WP)	2011	Innovation and skilled migrants	LFS and CIS data for UK TTWAS, 2002-4, 2005-7	Area-level panel with shift-share IV	Shows that 'human capital externalities coming from the migration behaviour of skilled individuals are a significant determinant of innovation in British local areas.' No amplifying effect of urban areas	1/2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
112	Hunt (J)	2011	Innovation, entrepreneurship	2003 National Survey of College Graduates, distinctions by immigrant visa type	Cross-section	Finds that 'immigrants who entered on a student/trainee visa or a temporary work visa have a large advantage over natives in wages, patenting, and publishing. Much of the advantage is explained by immigrants' higher education and field of study. Immigrants who entered with legal permanent residence do not outperform natives for any of the outcomes considered. Immigrants are more likely to start companies than similar natives.'	1
113	Foad (J)	2011	Investment	Bilateral migration and equity holdings data for 28 countries and 41 partners, 1997-2004	Identification using gravity migration model IV	Shows that 'inward migration is positively correlated with increased foreign equity positions and reduced home bias. Looking across income groups, outward migration reduces home bias for relatively rich countries, but may actually increase home bias when migration occurs to or from a developing country. These results suggest that immigration generates a positive externality of increased information flows for developed countries, but not for developing nations. The effects of immigration on investment are strongest within the Euro-Zone, suggesting that this positive externality of immigration is largest when barriers to portfolio diversification (such as currency risk) are lowest.'	1
114	Foley and Kerr (WP)	2011	Investment / FDI and international firm organisation	Patent data, affiliate data for 641 US MNEs in 45 countries, national FDI surveys between 1982-2004	Linear probability models with fixed effects	Shows that 'increases in the share of a firm's innovation performed by inventors of a particular ethnicity are associated with increases in the share of that firm's affiliate activity in their native countries. Ethnic innovators also appear to facilitate the disintegration of innovative activity across borders and to allow U.S. multinationals to form new affiliates abroad without the support of local joint venture partners. Thus, this paper points out that immigration can enhance the competitiveness of multinational firms.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
115	Javorcik et al (J)	2011	Investment / FDI and skilled migrants	US migrant shares, FDI in origin countries, 1990 and 2000	OLS and IV, multiple instruments	Tests 'suggest that US FDI abroad is positively correlated with the presence of migrants from the host country. The data further indicate that the relationship between FDI and migration is stronger for migrants with tertiary education.'	1
116	Lewis (J)	2011	Investment / physical capital	Manufacturing and MF tech and immigration data, 143 US metro areas, 1988-1993	Panel and differences estimation, skill-based shift-share IV	Paper shows that US factories' investments in automation 'substituted for the least-skilled workers and complemented middle-skilled workers at equipment and fabricated metal plants. Specifically, it exploits the fact that some metropolitan areas experienced faster growth in the relative supply of less-skilled labor in the 1980s and 1990s due to an immigration wave and the tendency of immigrants to regionally cluster. Plants in these areas adopted significantly less machinery per unit output.'	1
117	Brunow and Blien (WP)	2011	Productivity	Employer-employee dataset for 215 industries, 16 years, Germany	'Turned around' NEG model with lags as instruments	Finds that firms' employment 'is lower when the degree of diversity is higher, regarding the revenue of an individual establishment as given. From this result it can be derived under the conditions of monopolistic competition (implying elastic product demand) that the establishment is able to occupy a relatively large part of the market. Finally this implies relatively high labour demand.'	1
118	Mare and Fabling (WP)	2011	Productivity	Firm-level and census data, 1999-2008, New Zealand	Panel and IV with 5-year lags	Suggests that 'high-skilled local workforce benefits firms in high-skilled and high-research and development industries, and small firms. The benefits of local population density are strongest for firms in dense areas, and for small and new firms. Firms providing local services are more productive in areas with high shares of migrants and new entrants, consistent with local demand factors.'	1/ 2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
119	Nathan (WP)	2011	Productivity / wages, house prices	Panel of urban TTWAs 1994-2008, UK	Panel and shift-share IV	Finds 'small positive effects of migrants on high-skill native wages, negative effects on medium/low-skill employment, no effect on house prices. Long-term industrial decline and casualisation of entry-level jobs help explain the employment findings.'	2
120	Malchow-Moeller et al (WP)	2011	Productivity, exports and high-skill migrants	Employer-employee datasets, Denmark	Diff-in-diff	Results show that 'firms that hire foreign experts – defined as employees eligible for reduced taxation under the Danish "Tax scheme for foreign researchers and key employees" – both become more productive (pay higher wages) and increase their exports of goods and services.'	1
121	Coen-Pirani (J)	2011	Public goods / school spending	School spending data 1970-2000, California	Quantitative model of school choice and voting over public education	Finds that 'education spending per student in California would have been 24% higher in the year 2000 if U.S. immigration had been restricted to its 1970 level.'	2
122	Maheauta u et al (WP)	2011	Entrepreneurship	Australia	Policy shock	Paper looks at the impact of a change in Australia's immigration policy, introduced in the mid-1990s, on migrants' probability of becoming entrepreneurs. 'The policy change consists of stricter entry requirements and restrictions to welfare entitlements. The results indicate that those who entered under more stringent conditions - the second cohort - have a higher probability to become self-employed, than those in the first cohort. We also find significant time and region effects. Contrary to some existing evidence, time spent in Australia positively affects the probability to become self-employed. We discuss the intuitions for the results and their policy implications.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
123	Gnec et al (WP)	2011	Trade	48 studies, 300 obs	Meta-analysis	The results show that 'immigration complements rather than substitutes for trade flows between host and origin countries. Correcting for heterogeneity and publication bias, an increase in the number of immigrants by 10 percent may be expected to increase the volume of trade on average by about 1.5 percent. However, the impact is lower for trade in homogeneous goods. Over time, the growing stock of immigrants decreases the elasticities. The estimates are affected by the choice of some covariates, the nature of the data (cross-section or panel) and the estimation technique. Elasticities vary between countries in ways that cannot be fully explained by study characteristics; trade restrictions and immigration policies matter for the impact of immigration on trade. The migrant elasticity of imports is larger than that of exports in about half the countries considered, but the publication bias and heterogeneity-corrected elasticity is slightly larger for exports than for imports.'	1
124	Beaverstock and Hall (J)	2012	Cluster competitiveness	ONS Long-Term International Migration data and fieldwork-based studies of banking, professional services, business education	Quali	Argues that 'the City's competitiveness is significantly dependent on the functioning of its global labour market, of which a key factor is the immigration of European Economic Area (EEA) and non-EEA talent, and that a central determinant of the City's position as a leading international financial centre based around a highly competitive global labour pool will be UK immigration policy.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
125	Wang and Altinay (J)	2012	Entrepreneurship	Structured interviews with Chinese and Turkish-owned SMEs, n = 258	Quali	Shows that 'family and co-ethnic advice and labour do not have a significant impact on firms' entrepreneurial orientation (EO). Instead, both access to co-ethnic products and access to co-ethnic suppliers of utilities and facilities have a significant impact on firms' entrepreneurial outcomes, which in turn has a significant positive effect on employment growth. Moreover, Chinese-owned minority ethnic small business demonstrate a higher level of EO and pursue different paths to growth (that is, they are more likely to grow through acquiring more business premises) compared with Turkish-owned firms.'	2
126	Fairlie et al (B)	2012	Entrepreneurship (Indian)	Census data from US, UK, Canada	OLS	Results suggest that 'in the United States Indian entrepreneurs have average business income that is substantially higher than the national average and is higher than any other immigrant group. High levels of education among Indian immigrants in the United States are responsible for nearly half of the higher level of entrepreneurial earnings while industry differences explain an additional 10 percent. In Canada, Indian entrepreneurs have average earnings slightly below the national average but they are more likely to hire employees, as are their counterparts in the United States and United Kingdom. The Indian educational advantage is smaller in Canada and the United Kingdom contributing less to their entrepreneurial success.'	2
127	Marino et al (J)	2012	Entrepreneurship (moves to self-employment)	Employer-employee data, patents data for Danish firms 1980-2002. 2.5m individuals, 23k departure firms	Panel with shift-share IV based on historic commuting area DIV	Finds 'evidence that workforce educational diversity promotes entrepreneurial behaviour of employees as well as the formation of new firms, whereas diversity in demographics [age, gender] hinders transitions to self-employment. Ethnic diversity [language-based] favours entrepreneurship in financial and business services.'	1/ 2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
128	Wabha and Zenou (J)	2012	Entrepreneurship (return migrants)	Egyptian data	Recursive bivariate probit model	Finds that 'an overseas returnee is more likely to become an entrepreneur than a non-migrant. Although migrants may lose their social capital, they accumulate savings and experience overseas that increase their chances of becoming entrepreneurs.'	1
129	Docquier and Rapoport (J)	2012	Entrepreneurship, innovation, FDI	Review	None / review		1
130	Duleep et al (WP)	2012	Entrepreneurship, investment (skilled migrants)	US industries and labour force 2003-2008	Theory and calibration	Argues that 'immigrants facilitate innovation, entrepreneurship by being willing and able to invest in new skills: as immigrants face a lower opportunity cost of investing in new skills or methods, this “transfer” of source-specific skills to the U.S. may lead immigrants to be more flexible in their human capital investments than observationally equivalent natives. Areas with large numbers of immigrants (even if they are not self-employed) may prove to be areas in which entrepreneurship and innovation are easier to accomplish. Empirical evidence finds positive links from skilled migrants to job creation, business entry and immigration.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
131	Borjas and Doran (WP)	2012	Innovation	Impact of ex-Soviet mathematicians on US maths community	Quasi-experiment	Finds 'substantial cognitive mobility in response to the influx, with American mathematicians moving away from, rather than moving to, fields that likely received large numbers of Soviet émigrés. It appears that diminishing returns in specific research areas, rather than beneficial human capital spillovers, dominated the cognitive mobility decisions of pre-existing knowledge producers.'	1
132	Stuen et al (J)	2012	Innovation	PHD students in 2,300 American science and engineering departments from 1973 to 1998.	Panel using macro and policy shocks in source countries to deal with positive selection	Shows that 'both US and international students contribute significantly to the production of knowledge at scientific laboratories, and their contributions are statistically comparable, consistent with an optimising department. A theoretical model of scholarships helps us to infer the productivity effects of student quality. Visa restrictions limiting entry of high-quality students are found to be particularly costly for academic innovation.'	1
133	Scellato et al (WP)	2012	Innovation (knowledge diffusion)	GlobSci author surveys, 16 countries, four science fields	Associations only, no causal effects	Argues that 'migration plays an important role in the formation of international networks. Approximately 40 percent of the foreign-born researchers report having kept research links with colleagues in their country of origin. Non-mobile researchers are less likely to collaborate with someone outside their country than are either the foreign born or returnees. When the non-mobile collaborate, their networks span fewer countries. Econometric results are consistent with the hypothesis that internationally mobile researchers contribute significantly to extending the international scope and quality of the research network in destination countries at no detriment to the quality of the research performed. Results also suggest that the "foreign premium" on collaboration propensity is driven in large part by mobile researchers who either trained or worked outside the destination country where they were surveyed in 2011. With but one exception, the mobility findings persist when we estimate models separately for the US, Europe, and other countries.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
134	Lewis (WP)	2012	Innovation, investment (K)	Theory / review	none		1
135	Harvey (J)	2012	Innovation, investments	Survey of UK expats in Vancouver, n=64, 2008-9	Small scale survey	'Finds that 'the vast majority of respondents are not investing in or intending to return to their home country, which indicates that they contributing to brain circulation in a limited extent.'	3
136	Di Simone and Manchin (J)	2012	Investment / FDI (source countries)	advanced European Union countries (EU15) and New Member States (NMS) 1995–2007	Gravity model	Explores a possible “diaspora externality” from migrant networks. 'The evidence points to a significant correlation between the volume of EU15's activities in NMS and the total stock of NMS's own-migrants in the EU15 economies.'	1
137	Pandya and Leblang (WP)	2012	Investment / VC	Cross-border venture flows, 1980-2009, 160 countries	Gravity model, SUR with negative binomial. No apparent causality checking apart from lags	Argues that 'cultural ties between countries, especially the rise of high-skilled migration facilitate an international market for venture capital. Migrants bridge information gaps across countries by supplying implicit information needed to select foreign deals, and by advising entrepreneurs on the optimal business strategy for the local market. We find that US VC firms invest more frequently in countries that have large populations of skilled migrants residing in the US. Recipient countries' political institutions have limited influence over the volume of venture capital deals.'	2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
138	Gianetti et al (WP)	2012	Productivity	Firm-level data, China	Quasi-experiment based on policy shocks	Studies 'the impact of directors with foreign experience on firms in emerging markets. We document that hiring directors with foreign experience results in higher firm valuation, productivity, and profitability. Furthermore, corporate governance improves and firms are more likely to make international acquisitions, to export, and to raise funds internationally. The transfer of knowledge to emerging markets occurs not only through foreign investment, but also through labor flows and, in particular, return migration.'	1
139	Kangasniemi et al (J)	2012	Productivity	UK, Spain 1992-2005	Growth accounting model, estimated production function with GMM	Finds that 'migration has made a negative contribution to labour productivity growth in Spain and a negative but negligible contribution in the UK. This difference is driven by a positive impact from migrant labour quality in the UK. Labour productivity growth has a neutral contribution from migrant labour in construction and personal services in the UK, whilst in every case in Spain the effect is negative. Using an econometric approach to production function estimation we observe a positive long term effect on total factor productivity from migrant workers in the UK and a negative effect in Spain. Our findings suggest that either the UK is better at assimilating migrants or is more selective in terms of who is permitted to migrate.'	1
140	Trax et al (WP)	2012	Productivity (firm-level TFP)	Plant-level data for German firms 1998-2008	GMM	Finds that 'a larger share of foreign workers – either in the establishment or in the region – does not affect productivity. However, there are strong spillovers associated with the degree of cultural heterogeneity. The aggregate level is, quantitatively, at least as important as the workforce composition inside the establishment. Diversity thus seems to induce externalities beyond the boundaries of a single firm; it improves local business environments.'	1
141	Hanson	2012	Productivity, competitiveness, skilled migration	Review	None		2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
142	Peri (J)	2012	Productivity, employment	US states,	State-level panel with shift-share and distance IVs	Finds 'no evidence that immigrants crowded out employment. At the same time, we find that immigration had a strong, positive association with total factor productivity and a negative association with the high skill bias of production technologies. The results are consistent with the idea that immigrants promoted efficient task specialization, thus increasing TFP, and also promoted the adoption of unskilled-efficient technologies.'	1
143	Hoogendoorn and van Praag (WP)	2012	Team performance	550 Dutch students, 45 real companies	Randomised field experiment, exogenous variation of team composition	In the experiment, authors find that 'a moderate level of ethnic diversity has no effect on team performance in terms of business outcomes (sales, profits and profits per share). However, if at least the majority of team members is ethnically diverse, then more ethnic diversity has a positive impact on the performance of teams. This positive effect could be related to the more diverse pool of relevant knowledge facilitating (mutual) learning within ethnically diverse teams.'	1
144	Ortega and Peri (WP)	2012	Trade, productivity	Bilateral trade data, 147 countries, n = 30k dyads	Panel with gravity-push IV	Finds a 'robust, positive effect of openness to immigration on long-run income per capita. In contrast the positive effect of trade openness on income is not robust to controlling for the direct effects of geography. The main effect of migration operates through total factor productivity, consistent with a theory where immigration increases the variety of skills available for production. We provide further evidence in support of this mechanism by showing that the degree of diversity (by origin country) in migration flows has an additional positive effect on income. The direct gains from greater skill diversity appear to be larger than the costs arising from increased fractionalization.'	1
145	Nathan (J)	2012	Urban economic development	Review	None		2

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
146	Suedekum et al (J)	2012	Wages (productivity), employment	German local labour markets, 1995-2006	Panel with IV	Finds that 'th higher is high-skilled foreign employment, the higher are local wages and employment levels for natives. These effects are reinforced the more diverse is the group of high-skilled foreigners. For low-skilled foreigners benefits from diversity are also found, but only conditional on the overall size of this group. These results suggest that cultural diversity benefits native workers by raising local productivity.'	1
147	Mazzolari and Neumark (J)	2012	Consumption, prices	Universe of Californian business establishments, matched with Census of Population data 1992-2002. Tract-level analysis	Partial causality checks using within-ethnic group and within-industry info	The study looks at 'potential economic impacts of immigration stemming from two factors: first, that immigrants bring not only their labor supply with them, but also their consumption demands; and second, that immigrants may have a comparative advantage in the production of ethnic goods.' It finds 'some evidence that immigrant inflows boost employment in the retail sector,which is non-traded and a non-intensive user of immigrant labor. We find that immigration is associated with fewer stand-alone retail stores, and a greater number of large and in particular big-box retailers – evidence that likely contradicts a diversity-enhancing effect of immigration. On the other hand, focusing more sharply on the restaurant sector, for which we can better identify the types of products consumed by customers, the evidence indicates that immigration is associated with increased ethnic diversity of restaurants.'	1
148	Mundra (WP)	2012	Trade	Trade and migrant flows for US and 63 trading partners, 1991-2000	Panel data, IV using historical migrant networks and dual citizenship policies	Finds that 'the immigrant trade elasticity for the no occupation group is similar in magnitude to the immigrant effect on trade estimated in the literature. However, this does not capture the full extent of the effect of immigrant network on trade. The share of professional immigrants in comparison to immigrants with no occupation significantly increases the trade elasticity for Rauch's referenced price and differentiated commodities and this effect is strongest for the differentiated goods. This paper establishes that immigrants' occupation is an important indicator of the quality and effectiveness of immigrants' network in trade creation with the home country.'	1

Count	Author /type	Date	Economic outcome	Data / focus	Methodology	Key findings / key points	QA (1-3)
149	Hunt (WP)	2013	Wages, human capital	American Community Surveys 2009-2010, US	Cross-sectional data, OLS or quantile regressions	Paper decomposes immigrant-native wage differences in the engineering sector. Finds that immigrant engineers have 'a wage distribution shifted to the right of the native distribution. Among workers with an engineering degree, however, immigrants underperform natives, despite somewhat higher education. The gap is particularly large in the lower tail, where immigrants work in occupations not commensurate with their education. In the upper tail, immigrants fail to be promoted out of technical occupations to management, handicapped by imperfect English and their underrepresentation among older age groups. In both samples, immigrants from the highest income countries are the best and brightest workers.'	1/ 2
150	Nathan and Lee)(J)	2013	Innovation, entrepreneurship	7600 London firms, 2005-7	Repeat cross-section with partial causality checks	Authors find that 'Ffrst, companies with diverse management are more likely to introduce new product innovations than those that are not. Second, diversity is particularly important for reaching international markets and serving London's cosmopolitan population. Third, migrant status has positive links to entrepreneurship.'	1

Appendix 2 Topic guide for case study interviews with entrepreneurs and investors

Introduction

- Give background to and purpose of the research
- Explain confidentiality and anonymity
- Ask permission to record

Section 1. Background: personal and professional

Please could you start by telling me a few things about yourself and your business/investment:

- How long you have been in the UK
- Where you are from
- Your age
- Education
- Where are living in the UK
- Family situation in the UK - with partner, children (and ages)
- Have own property/rent
- Your business/investment (sector, location, size etc.)

Could you tell me about what you were doing before coming to the UK under the Tier 1 visa (suggest start from when left Education)

- Any businesses activity (what were these, sole or collaborative ventures)
- Investments in business (where, what these were)
    - Do you have your own portfolio
    - Do you advise other investors (where are these located)
- Sources of support for any of these activities

Section 2. Background: to applying for entry via Tier 1

I'd like to ask you now about the background to applying for a Tier 1 visa

- When did you start your Tier 1 visa application
- Why did you apply
- Had you previously applied to come to the UK under other visas?
    - When/what happened
- Why did you apply to come under Tier 1 (main reasons)
- Why did you choose [sector] and [location] to set up/invest in
- Why did you want to come to the UK
    - Probe for whether the UK and sector were linked as a choice (ie UK seen as good for setting up in that sector)
    - Probe for whether existing family / professional / other contacts and networks are linked to the decision
- Did you have business contacts in the UK before applying
    - What were these (probe for details)

Section 3. The process of applying for entry via Tier 1

Please could we talk now about your experiences of applying for a Tier 1 visa

- How did you find out about Tier 1
- How did you initiate the application process (including choosing a sponsor)
- How long did it take
- Were there any delays or problems with your application (how were these overcome)
- How easy or difficult was it to meet the criteria for Tier 1 entry
- Were the minimum fund requirements an issue for you (probe for how)
- How easy or difficult was it to raise the financial support for your business/investment
- Was the source of financial support from your country of origin or the UK
- Did you have any non-financial support in preparing for your visa application (what was this and where from)

Section 4. The process of setting up business/investing in the UK

I'd like you to tell me now about how you set up your business/made your investment in the UK

- We talked earlier about your choice of sector and location. What factors did you take into account in your decision-making over your enterprise/investment
    - Access to support
    - Recruitment opportunities
    - Gaps in the market
    - Presence of other businesses (same sector?)
    - Anything else
    - Owners / partners from same country of origin?
    - Social / professional connections?

- How did you go about finding premises, how easy or difficult was this

- Are you able to make any comparisons between setting up/investing in the UK and elsewhere? (ask all but particularly those who said in Section 1 that had set up business before)
- And how was the experience of settling into life in the UK
    - did you have the information and advice you needed? (probe for details)

Section 5. Recruitment of staff

I'd like to ask you now about the jobs that you've created and who works for you

- How many people do you employ
- What are their job roles
- What are their skills and qualifications
- How easy or difficult has it been to recruit staff with the skills you need
- What type of contract are they on (employed, permanent/temp, full/part time)
- What are their personal characteristics
    - Age and gender
    - Ethnicity and nationality => probe whether hiring migrants / natives, and specifically staff from same country of origin as entrant
- How did you go about recruiting them
- How satisfied are you with the quality of staff you have recruited

Section 6. Assessment of the business and its impact

I'd like to ask you a few questions now about your business, your views on how it's been going

- How do you feel your business/investment is going
- Is it as you had expected it to be at this point (probe for reasons)
- What have been the main challenges
- What have been the main areas of success
- How much influence have you personally had on the businesses you set up / invest in
    - Is this passing on knowledge, expertise (probe for details)
    - Other individual-level impacts (e.g. contacts)
- What impact do you think you have made
    - On the firm(s) you have set up / invested in
    - In the local area, in the sector, nationally, internationally (as appropriate)
- What links have you made with other UK businesses (and what for)
- What links have you made with businesses outside of the UK (and what for)
    - Probe: are these mainly / wholly in your country of origin?

Section 7. Reflections on the process and future plans

This is the last part of the interview. I'd like to ask for your overall reflections on the Tier 1 visa process and about your future plans

- Looking back on the process of coming to the UK through the Tier 1 visa route
- Is there any way in which you feel the process could have been different (improved)
- Is there any information or support you feel you would have benefited from - either before coming or after arriving in the UK

- Would you have any advice to applicants who want to set up/invest in the UK
- What are your future plans
    - Stay in the UK/leave
    - Expand business/make further investments (where and what in)
- What will affect the decisions you make and your longer term plans
    - Economic/political/personal

Anything else?
Thank you for taking part in the research