The migration of UK trained GPs to Australia: does risk attitude matter?

Abstract

Background. Little is known about the drivers of migration of GPs. Risk attitude may play an important role as migration is fundamentally a risky decision that balances the risks of staying with the risks associated with leaving. This paper examines the association between risk attitudes and the migration of UK GPs to Australia.

Methods. GPs who qualified in the UK but work in Australia and who responded to the Medicine in Australia: Balancing Employment and Life (MABEL) national longitudinal survey of doctors, were compared with GPs based in Scotland who responded to a survey. Risk attitudes were elicited for financial risks, career and professional risks and clinical risks on a scale from 1 to 5.

Results. GPs in Scotland and UK trained GPs in Australia have similar risk attitudes for financial risk. However, UK trained GPs in Australia are less willing to take clinical and career risks.

Conclusion. GPs who migrated to Australia after qualifying in the UK were more risk averse about their career and clinical risks. This may suggest that more risk averse GPs migrate to Australia due to pull factors such as less uncertainty around career and clinical outcomes in Australia. The uncertain NHS climate may push more risk averse doctors away from the UK.

Keywords: migration, risk attitude; General Practitioners

1. Introduction

Labour and skill shortages in the health sector is a policy concern in many OECD countries(1). One issue is outward migration by doctors, whose training is often in part subsidised by the state. In the UK, the focus of this paper, one in ten General Practitioners (GPs) have indicated that they plan to leave the UK to work overseas(2) and the number of UK doctors working in Australia and New Zealand has seen a recent increase, growing by 17% between 2014 and 2016 to 5378(3). NHS England has just announced a new policy to encourage GPs who left the UK for Australia to return to the NHS. Increasing our understanding of migration decisions is crucial to develop interventions and policies aimed at encouraging doctors to stay in the UK.

The traditional economic approach assumes that individuals weigh up the uncertain changes in the costs and benefits of migration. Evidence suggests that internal migration is determined by a wide range of economic and non-economic push and pull factors(4). Push factors are generally present in donor countries, and pull factors relate to receiving countries. Economic push factors include low wages, high taxes, high unemployment and overpopulation. Non-economic push factors include discrimination, poor health care, corruption, crime, compulsory military service, natural disaster and famine. Economic pull factors include demand for labour, high wages, generous welfare benefits, good healthcare and education systems, strong economic growth, technology and low cost of living. Non-economic pull factors include family and friends/networks, rights and freedoms, property rights, law and order and amenities (4).

There is relatively limited research on the drivers of physician immigration between developed countries (there is a larger literature on (the ethical issue) of) rich countries attracting health workers form poor countries). There is some evidence that the presence of larger migrant networks and the Gross Domestic Product of the origin country influences the decision to immigrate to the United States(5), as does a short-term shortage of doctors in the 'receiving'

country(6). Age was also a significant factor for migration between Canadian provinces for physicians(7). Alongside these broader factors, there can be more personal or cultural reasons to emigrate. For Lithuanian doctors, a lower rating for teamwork culture was associated with a higher desire to emigrate(8). The important interaction between the culture and institutions of a system (9) suggest that there is the possibility to self-select a system that more closely matches one's preferences.

In this paper we focus on the role of a doctor's attitude towards risk in migration. Uncertainty exists across all of the factors driving migrations discussed above, with respect to whether the destination country will lead to net increase in welfare. Migration is fundamentally a risky decision as individuals have more information about income, work environment, leisure opportunities and other important factors in their home country compared to other countries. Individuals vary widely in their attitude towards risk, and risk attitude correlates with a range of behaviours including clinical decision-making, such as triage decisions for emergency patients(10). In the economics literature it has been recognised that risk attitude plays a role in migration decisions: several empirical studies have confirmed that risk seeking individuals are more likely to migrate(11-19). However, none of the previous studies have focused on health professionals. There is some evidence that health professionals may have different risk attitudes (20) and this may affect the relationship between risk attitude and migration.

The aim of this paper is to compare risk attitudes of General Practitioners (GPs) who qualified in the UK and migrated to Australia with those who are currently practising in Scotland. Surveys increasingly include questions to measure risk attitude but different questions often limits comparability between groups. This paper exploits a unique opportunity to compare a longitudinal survey of doctors in Australia with a survey conducted in Scotland which included

an identical risk attitude measure. It is the first study to examine the role of risk attitudes in migration of doctors.

Migration is influenced by both "push" and "pull" factors: push factors are generally present in donor countries, and pull factors relate to receiving countries(21). This is important to recognise as push and pull factors may represent different levels of uncertainty and this influences the relationship between risk attitude and migration. For example, funding cuts in the NHS, revalidation, and other moves to improve productivity (eg seven day working) without increasing earnings may increase uncertainty about working in the UK NHS. This may increase the strength of push factors. Risk averse doctors may, therefore, be more likely to migrate if future conditions in their home country are more uncertain than their destination country. Health systems are organised and financed in different ways which is likely to be associated with different levels of uncertainty across different domains such as financial, career and clinical domains. The relationship between risk attitudes and migration depends on the relative levels of uncertainty in each country.

The way the health system is organised and financed differs markedly between the UK and Australia and different push and pull factors are therefore likely to be at play. The NHS is mainly financed through general taxation and is based on the principle of being free at the point of use. Australia has a national tax-financed universal health insurance scheme (Medicare). Diagnostic tests such as ultrasounds and MRIs are readily available in Australia, as private facilities outside of public hospitals offer these tests which are subsidised by Medicare (and mainly bulk-billed so there is no out of pocket cost). Many GP practices have rooms within their practices that are rented out to pathology companies where blood tests can be taken. This could reduce clinical uncertainty through avoiding long waiting times for diagnostics tests and

reducing the risk of misdiagnosis. In the UK, GPs have a fixed patient list and they are required to provide necessary care for all patients on their list. The workload has been increasing and this can lead to higher levels of uncertainty around clinical care if for example the workload results in the provision of lower quality of care. In Australia GPs are paid by uncapped fee-for-service and they can more easily control their workload. Given the different push and pull factors, our hypotheses as to how domain-specific risk attitudes (e.g, across financial risks, clinical risks and career risks) may influence GP migration are ambiguous.

2. Methods

2.1 Data sources and study sample

Data from two sources are used: survey of GPs in Scotland and the Medicine in Australia: Balancing Employment and Life (MABEL) survey. The cross-sectional survey in Scotland was conducted in 2015 to examine the relative value GPs place on health benefits at different points in time (22). The survey included the time preference questions, the risk questions used in this study, and demographic and practice characteristics. The survey was sent to a random sample of 2,001 General Practitioners in Scotland, stratified by health board.

MABEL is a prospective cohort/panel study of workforce participation, labour supply and its determinants amongst Australian doctors. The first wave in 2008 invited all doctors in Australia to participate. Over 10,000 responded. Respondents are broadly representative of the population of doctors in terms of age, gender, location and hours worked (23). Each subsequent wave includes doctors from this original cohort plus a cohort of doctors new to clinical practice in Australia (e.g. recent graduates and immigrants). Doctors are mailed a survey and are given

log in details to complete online if they prefer. The questionnaire covers topics such as job satisfaction and attitudes to work, characteristics of work setting, workload, finances, geographic location, demographics, and family circumstances (24). Risk attitude was first included in the questionnaires in wave 6. Data from Waves 6 (2013), 7 (2014) and 8 (2015) of the Medicine in Australia: Balancing Employment and Life (MABEL) survey were therefore used.

2.2 Study outcomes and covariates

Risk attitude is measured in the MABEL survey and the Scottish survey using the domain-specific MABEL Risk Attitudes Scale. This measure was developed by adapting the Risk Propensity Scale proposed by Nicholson et al.(25) to the context of physician behaviours and has been previously used to examine prescribing decisions(26). The measure includes three domains related to the types of risks faced by doctors in their working lives, namely financial (e.g. investments with an uncertain outcome), career and professional risk (e.g. publicly challenging your professional colleagues) and clinical risk (e.g. recommending a treatment which is new to your usual practice or is controversial). GPs are asked how likely they are to take risks in each of these domains on a scale from 1 (very unlikely) to 5 (very likely). Figure 1 shows the questions used.

The covariates include the individual and practice characteristics that were available in both the Scottish survey and MABEL survey. These are number of years qualified, gender, whether the GP is working fulltime or part-time, and whether the practice is located in an urban or rural area.

2.3 Statistical analysis

The data from the two surveys are combined into a single dataset. Univariate t-tests and chi-squared tests are used to test for differences in the key variables between Scottish and Australian GPs. Multivariate ordinary least squares regression analysis is used with the risk attitude measure as the dependent variable. The model to be estimated is:

$$RA_i^k = \alpha + \beta_1 Migrated_i + \beta_2 X_i + \beta_3 Year + \varepsilon_i$$

Where RA_i^k is the risk attitude of GP *i* for domain *k*. Migrated is a dummy variable equal to one for UK trained GPs in Australia (those that have migrated to Australia) and equal to zero for Scottish GPs. X_i are the individual characteristics (gender (dummy variable: female), years qualified (continuous), part-time (dummy variable: fulltime)) and practice characteristics (urban/rural location (dummy variable: urban)), *Year* is the year of the survey (dummy variables: 2014 and 2015) and ε is the random error term. As there up to three observations per individual in the MABEL data, clustered standard errors were used to account for the fact that observations within an individual are not independent.

Based on empirical evidence in general population samples it can be hypothesised that GPs who are more risk seeking are more like to migrate to Australia. However, given the different push and pull factors, our hypotheses as to how domain-specific risk attitudes (e.g, across financial risks, clinical risks and career risks) may influence GP migration are ambiguous.

Additional analyses included splitting the sample by gender as women have been shown to be being more risk averse than men (27). We also explore differences in the results by length of time since migration for the Australian-based GPs. More recent arrivals (0 to 5 years in Australia) are compared with medium term arrivals (6 to 14 years in Australia). Risk attitudes could differ across cohorts either because of different cohorts experiencing different work situations, or because risk attitudes may change over time. The latter may happen if GPs adapt their risk attitude to the local population. It has been hypothesised in the economics literature

that institutions and culture may have an impact on preferences (9) through for example imitation and learning from role models such as peers (see for example (28)). Evidence suggests that risk preferences vary across countries (29). Data from that study show that individuals in Australia are more risk seeking than individuals in the UK although the difference was not statistically significant. If GPs adapt their risk attitude to the local population then GPs who migrate from the UK to Australia may become more risk seeking.

The robustness of the results are tested in several ways. First, risk attitude is a categorical variable rather than a continuous variable and so we re-estimate the model using an ordered probit regression model where we assume a normally distributed 'latent' continuous risk variables that we do not observe. With an underlying continuous latent variable, probit is more appropriate than logit. Interpretation of the size of the coefficients in ordered probit regression is difficult and linear regression is therefore the preferred technique. Second, to further explore the impact of the difference in characteristics of the samples on results we also use propensity score matching to control for observed differences between the samples. Third, we check whether the results for Australian-based GPs with UK qualifications are driven by a general level of risk attitude in Australia that affects all immigrants. Variation in risk aversion by country of qualification would be evidence against this. Such variation would suggest that measured risk attitudes do not simply reflect the level of institutional risk in the Australian system. We measure the variation of risk attitudes in immigrants for those countries that had sufficient sample sizes (UK, India, South Africa, Sri Lanka, New Zealand and China).

3. Results

3.1 Sample and GP characteristics

In Scotland, 322/2001 questionnaires were returned (16%). The response rate is in line with other studies (30) including Riise et al (31) who conducted a cross country comparison of GPs' stated prescription behaviour. After excluding GPs with incomplete data, we had a study sample of 295 GPs in Scotland. Our estimation sample averages are 59% female (population 56%), list size 7844 (population 5800) and average number of GPs per practice six (population five). The larger list size and average number of GPs per practice is in part due to the sampling strategy used. It should be noted that list size and number of GPs per practice are not correlated with the outcome of interest (risk attitude). The number of GPs responding in the MABEL survey waves 6, 7 and 8 was 3,098, 3,287 and 3,346 respectively. The response rate for GPs in the initial survey was 17.7% (24). The average response rate was 52.5% for continuing GPs and 19.0% for new GPs across waves 6 to 8(23). These GPs were representative of the population of Australian GPs with regard to age, gender, location, and hours worked(23). After excluding GPs with incomplete data, we had a study sample of 4,614 GP-year observations (across the three waves of Mabel data). In total, 585 of these observations (273 individual GPs) in Australia qualified in the UK. These are identified using the question "In which country did you complete your basic medical degree?". For GPs from MABEL, who are UK trained, we compared them to the population of UK-trained GPs in Australia in 2013, according to the characteristics in Table 1. In 2013, there were a total of 1,369 UK-trained GPs working in Australia and in the MABEL sample frame. Of these 39.8% were female (compared to 49.6% in the MABEL sample), 64.3% worked in urban areas (compared to 53.9% in Table 1), and the population of UK-trained GPs in Australia qualified ab average of 30.3 years ago, compared to 25.5 years in Table 1. These factors are adjusted for the regression analysis.

The two samples differ in gender, whether working full-time, rurality of the practice and years qualified (Table 1). Relatively more UK qualified GPs in Australia are male, work full-time,

practice in rural locations, and have been qualified for longer (are older) compared to the Scottish sample. The difference in rurality is not surprising as immigrant doctors in Australia are required to practice in Districts of Workforce Shortage (DWS), mainly non-metropolitan and rural areas, for up to a period of 10 years when they first arrive in Australia. Our analysis controls for the differences in these characteristics by including these as covariates in the regression models.

3.2 Risk attitude

The distribution of financial risk attitudes is similar for Scottish GPs and UK trained GPs in Australia (Figure 2). The distribution for career risk and clinical risk appear to be different across the two samples. UK trained GPs in Australia are more risk averse with regards to clinical and career risk compared to Scottish GPs. The mean risk attitudes from the regression models (Table 2), after controlling for GP and practice characteristics, show again that UK trained GPs are more risk averse than Scottish GPs (Figure 3). The difference in financial risk between the groups was not statistically significant. The differences in career and clinical risk were statistically significant. The difference in mean risk attitude was 0.571 (95% confidence interval 0.366 to 0.776) for career risk and 0.521 (0.337 to 0.706) for clinical risk. This difference is relatively large and comparable to the difference in risk attitude between GPs and surgeons for example (eTable 1).

The results are similar for males and females (eTable 2). The interaction term with recent arrivals is not statistically significant indicating that the difference between UK trained GPs in Australia and Scottish GPs is similar for recent arrivals (migrated within previous 5 years) compared to medium term arrivals (migrated between 6 to 14 years ago) (eTable 3). Similar results are found when using ordered probit regression (eTable 4) and when using propensity

score matching (eTable 5). For Australian GPs, it is clear that the association between the country of qualification and risk attitudes varies, suggesting that the risk attitude measures are not just reflecting the level of institutional risk present in the Australian system (eTable 6).

4. Discussion

This paper compared the risk attitudes of UK qualified GPs who have migrated to Australia with those who are currently practising in Scotland. Risk attitude was measured across three domains: financial risks, career/professional risks and clinical risks. The results showed that GPs who migrated to Australia after qualifying in the UK were similar in their risk attitude toward financial risk but more risk averse with regards to career and clinical risk compared to GPs in Scotland. The difference in mean risk attitude was 0.571 (95% confidence interval 0.366 to 0.776) for career risk and 0.521 (0.337 to 0.706) for clinical risk. This difference is relatively large and comparable to the difference in risk attitude between GPs and surgeons.

The strength of this study is the availability of unique comparative data on risk attitudes in three important domains across two high income countries with similar cultural backgrounds and primary care organisation. There are several limitations to our analysis. We did not have information on country of qualification in the Scottish sample and this sample could therefore also include migrants and have a different risk attitude to UK-born GPs in Scotland. However, the majority (91%) of GPs in Scotland qualified in the UK (32). We did not have information on nationality in the MABEL sample and this sample could therefore include Australians and other-UK individuals who trained in the UK and then moved to Australia. Other data suggests this issue is likely to be negligible. UCAS provides data on the country-of-residence at acceptance to UK medical schools. In 2018, 7450 of the total 8620 accepted students were from the UK (86.4%, this proportion is relatively stable back to 2007). To the extent that these issues

have biased our results, the bias would be downwards (that is, we would be less likely to detect a difference in risk attitude), so our results may underestimate the effect on risk attitude. Secondly, data were available on only a limited number of characteristics in the Scottish sample. Omitting variables which are correlated with both risk attitude and migration such as for example personality, marital status, income, children etc may lead to biased results. The direction of the bias introduced by this will depend on the correlations between the omitted variable and risk attitude and migration. The results of our study therefore present only associations.

Third, the UK trained GPs in Australia may have trained in a constituent UK country other than Scotland. This would bias the results only if the constituent UK countries differ in their risk attitudes. It should be noted that medical training, financing and institutional arrangements of general practices are very similar across the constituent UK countries. Fourth, the analysis was cross sectional and it was therefore not possible to examine whether migration affects risk attitudes. Finally, migration decisions are complex and there are likely to be a wide range of economic and non-economic factors that determine of migration. Risk attitude is therefore one of many factors that may affect an individuals' decision to migrate.

The results of our study cannot be directly compared to existing studies as there are no other studies that have examined the relationship between risk attitude and migration of health professionals. Studies using general population studies have generally found that risk seeking individuals are more likely to migrate.(11-19) The difference in findings may be explained by the difference in samples and/or differences in uncertainty related to the specific push and pull factors of the home and destination country. Risk averse GPs may be more likely to migrate due to the lower levels of uncertainty around clinical and career domains in Australia. There

may also be other important areas where uncertainty is lower in Australia such as quality of education, property rights, law and order etc.

5. Conclusion

This study showed that GPs who migrated to Australia after qualifying in the UK were similar in their risk attitude toward financial risk but more risk averse with regards to career and clinical risk compared to GPs in Scotland. These findings suggest that GP migration to Australia may be associated with lower levels of uncertainty in the career and clinical domains in Australia, relative to Scotland. Both push and pull factors may be the reasons for this association, including the NHS climate (funding issues, revalidation) pushing more risk averse doctors away from the UK. Risk averse GPs may be more likely to migrate due to the lower levels of uncertainty around clinical and career domains in Australia. If these findings were confirmed in subsequent studies, then appropriate policy interventions and initiatives would include reducing the uncertainty around clinical and career domains within the NHS, increasing the focus on teaching competence to manage risk within training and targeting less risk averse GPs in initiatives to attract UK qualified GPs in Australia back to the UK. Further research is needed to better understand what type of uncertainty UK GPs are most sensitive to.

References

(1) Organisation for Economic Co-operation and Development. Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places. OECD Health Policy Studies. Paris and Washington, DC: Organisation for Economic Co-operation and Development; 2016.

(2) British Medical Association. National Survey of GPs: the future of general practice. 2015.

(3) Rimmer A. Number of British doctors working in Australia and New Zealand is rising. BMJ (Clinical research ed.) 2017 October 4, 2017;359:j4554.

(4) Simpson NB. Demographic and economic determinants of migration. IZA World of Labor 2017;http://dx.doi.org/10.15185/izawol.373.

(5) Hussey PS. International migration patterns of physicians to the United States: A cross-national panel analysis. Health Policy 2007;84(2-3):298-307.

(6) Chojnicki X, Moullan Y. Is there a 'pig cycle'in the labour supply of doctors? How training and immigration policies respond to physician shortages. Soc Sci Med 2018;200:227-237.

(7) Basu K, Rajbhandary S. Interprovincial migration of physicians in Canada: What are the determinants? Health Policy 2006;76(2):186-193.

(8) Goštautaitė B, Bučiūnienė I, Milašauskienė Ž, Bareikis K, Bertašiūtė E, Mikelionienė G. Migration intentions of Lithuanian physicians, nurses, residents and medical students. Health Policy 2018;122(10):1126-1131.

(9) Alesina A, Giuliano P. Culture and institutions. Journal of Economic Literature 2015;53(4):898-944.

(10) Pearson SD, Goldman L, Orav EJ, Guadagnoli E, Garcia TB, Johnson PA, et al. Triage decisions for emergency department patients with chest pain: do physicians' risk attitudes make the difference? Journal of general internal medicine 1995 October 1995;10(10):557-564.

(11) Barsky RB, Juster FT, Kimball MS, Shapiro MD. Preference parameters and behavioral heterogeneity: an experimental approach in the health and retirement study. Q J Econ 1997 May 1997;CXII(2):537-580.

(12) Bonin H, Constant A, Tatsiramos K, Zimmermann K. Native-migrant differences in risk attitudes. Applied economics letters 2009 Oct 2009;16(15):1581-1586.

(13) Jaeger DA, Dohmen T, Falk A, Huffman D, Sunde U, Bonin H. Direct evidence on risk attitudes and migration. Rev Econ Stat 2010 Aug 2010;92(3):684-689.

(14) Balaz V, Williams AM. Risk attitudes and migration experience. Journal of Risk Research 2011 May 2011;14(5):583-596.

(15) Gibson J, McKenzie D. The microeconomic determinants of emigration and return migration of the best and brightest: Evidence from the Pacific. J Dev Econ 2011 May 2011;95(1):18.

(16) Nowotny K. Cross-border commuting and migration intentions: the roles of risk aversion and time preference. Contemporary Economics 2014;8(2):137-156.

(17) Williams AM, Baláz V. Mobility, risk tolerance and competence to manage risks. Journal of risk research 2014 Sep 2014;17(8):1061-1088.

(18) Akguc M, Liu X, Tani M, Zimmermann KF. Risk Attitudes and Migration. China Economic Review 2016 February 2016;37:166-176.

(19) Fang M, Hanna SD, Chatterjee S. The Impact of Immigrant Status and Racial/Ethnic Group on Differences in Responses to a Risk Aversion Measure. Journal of Financial Counseling and Planning 2013;24(2):63-76,91-92.

(20) Galizzi MM, Miraldo M, Stavropoulou C, van der Pol M. Doctor-patient differences in risk and time preferences: A field experiment. J Health Econ 2016 DEC;50:171-182.

(21) Massey DS. Theories of International Migration: A Review and Appraisal. Population and Development Review 1993 September 1993;19(3):431-466.

(22) Irvine A, van der Pol M, Phimister E. A comparison of professional and private time preferences of General Practitioners. Social Science & Medicine 2019 February 2019;222:256-264.

(23) Taylor T, La N, Scott A, Leahy A. MABEL User Manual: Wave 8 Release. Melbourne: Melbourne Institute of Applied Economic and Social Research, University of Melbourne; 2016.

(24) Joyce CM, Scott A, Jeon S, Humphreys J, Kalb G, Witt J, et al. The "Medicine in Australia: Balancing Employment and Life (MABEL)" longitudinal survey - Protocol and baseline data for a prospective cohort study of Australian doctors' workforce participation. BMC Health Services Research 2010;10:50.

(25) Nicholson N, Soane E, Fenton-O'Creevy M, Willman P. Personality and domain-specific risk taking. Journal of risk research 2005 Mar 2005;8(2):157-176.

(26) Zhang Y, Mendez SJ, Scott A. Factors affecting general practitioner decisions to adopt new prescription drugs - cohort analyses using Australian longitudinal physician survey data. BMC Health Services Research 2019 02/07;19(1):94.

(27) Croson R, Gneezy U. Gender Differences in Preferences. Journal of Economic Literature 2009 Jun 2009;47(2):448-474.

(28) Bisin A, Verdier T. The economics of cultural transmission and the dynamics of preferences. J Econ Theory 2001 APR;97(2):298-319.

(29) Falk A, Becker A, Dohmen T, Enke B, Huffman D, Sunde U. Global Evidence on Economic Preferences. Q J Econ 2018 NOV;133(4):1645-1692.

(30) Cottrell E, Roddy E, Rathod T, Thomas E, Porcheret M, Foster NE. Maximising response from GPs to questionnaire surveys: do length or incentives make a difference? BMC medical research methodology 2015 January 6, 2015;15:3.

(31) Riise J, Hole AR, Gyrd-Hansen D, Skåtun D. GPs' implicit prioritization through clinical choices - evidence from three national health services. J Health Econ 2016 September 2016;49:169-183.

(32) General Medical Council. Key stats from the medical register. 2019; Available at: https://data.gmc-uk.org/gmcdata/home/#/reports/The%20Register/Stats/report. Accessed 02/12, 2019.

Table 1. Descriptive statistics of the sample: Scotland and UK trained GPs in Australia

	Scotland		UK trained in Australia		χ^2 (p-value)
	N	**%**	**N**	**%**	
Gender					4.99 (0.025)
Male	121	41.0	137	50.4	
Female	174	59.0	135	49.6	
Full time					5.62 (0.018)
No	139	47.6	103	37.7	
Yes	153	52.4	170	62.3	
Rurality					6.96 (0.008)
Rural	99	35.0	119	46.1	
Urban	184	65.0	139	53.9	
	Mean	**SD**	**Mean**	**SD**	**t-test (p-value)**
Years qualified	22.29	9.73	25.51	12.84	3.364 (0.001)
Risk attitude*					
Financial	2.00	1.02	2.04	1.11	0.404 (0.686)
Career	2.59	1.02	2.16	1.12	4.949 (0.001)
Clinical	2.40	1.01	1.88	0.92	6.821 (0.001)

* Using all observations across waves – t-test adjusts for clustering in Mabel data

Figure 1. Risk attitude measure

This question asks about everyday risk-taking in relation to different types of activities.

How likely are you to engage in each of the following activities (with a score of 1 being 'very unlikely' and 5 being 'very likely')?

	Very unlikely 1	2	3	4	Very likely 5
Financial risks (e.g. investments with an uncertain outcome)	☐	☐	☐	☐	☐
Career and professional risks (e.g. publicly challenging your professional colleagues)	☐	☐	☐	☐	☐
Clinical risks (e.g. recommending a treatment which is new to your usual practice or is controversial)	☐	☐	☐	☐	☐

Figure 2. Histograms of risk attitudes (1=very unlikely to take risks; and 5=very likely to take risks)

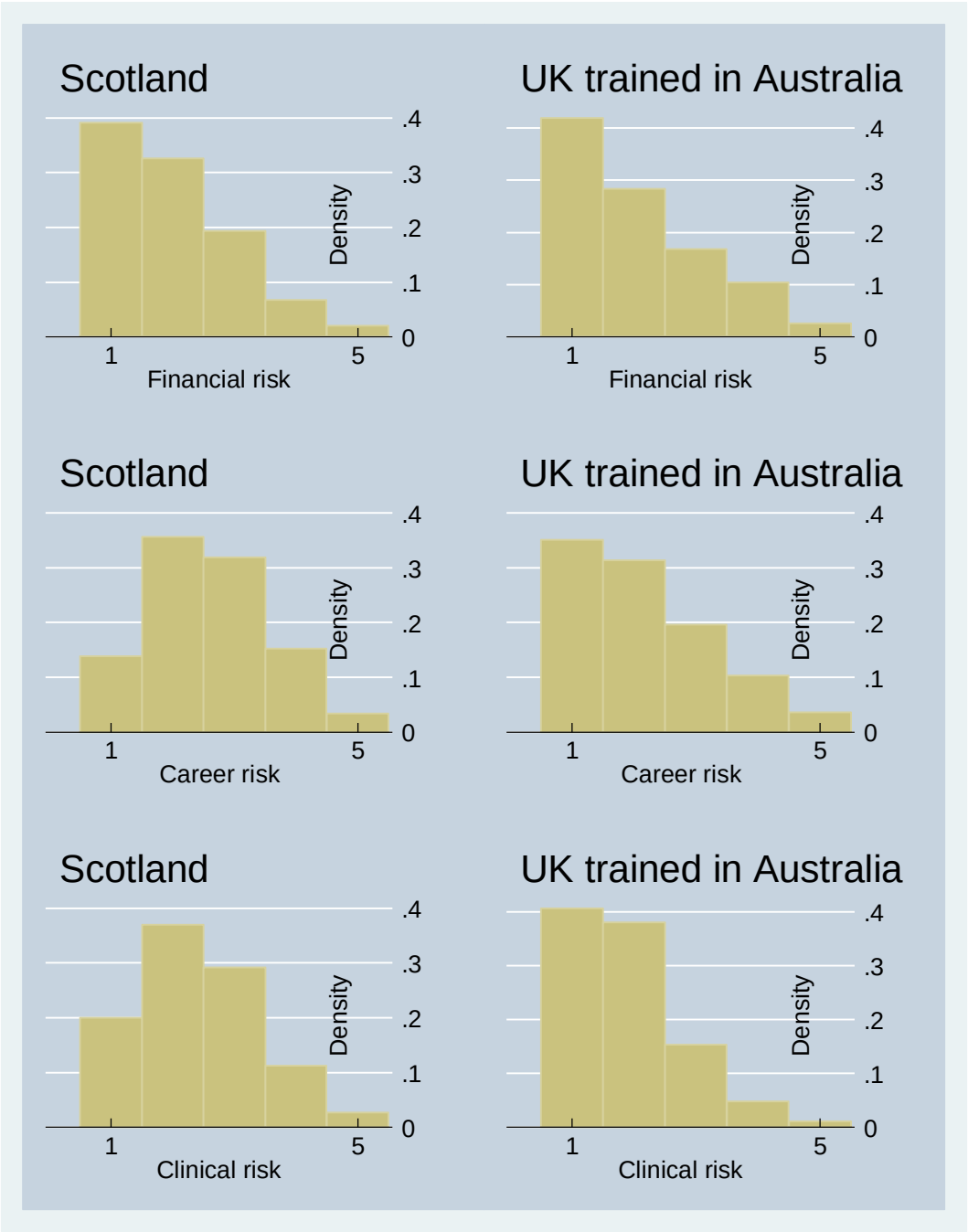
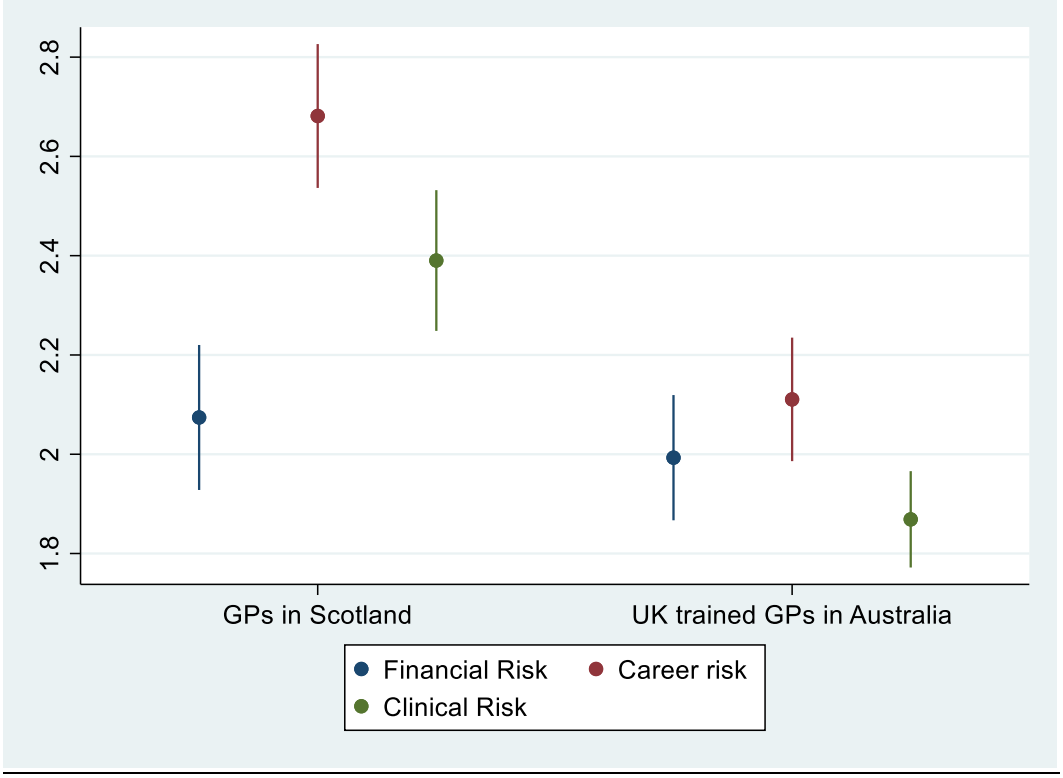


Figure 3. Adjusted* mean risk attitude and CIs



* adjusted for age, years qualified, urban, fulltime and year of survey.

Table 2. Association between migration and risk attitudes

	Financial risk	Career risk	Clinical risk
Migrated	-0.0810	-0.571***	-0.521***
	(0.104)	(0.105)	(0.0940)
Female	-0.177	-0.0370	-0.132
	(0.109)	(0.110)	(0.0907)
Years qualified	-0.000192	-0.00821**	-0.00891***
	(0.00415)	(0.00380)	(0.00318)
Fulltime	-0.0281	0.178*	0.0637
	(0.0977)	(0.103)	(0.0814)
Urban practice	-0.00568	-0.261***	-0.0782
	(0.0958)	(0.0949)	(0.0794)
Year 2014	-0.0334	-0.0143	-0.0870
	(0.0978)	(0.103)	(0.0822)
Year 2015	-0.144	-0.192**	-0.100
	(0.104)	(0.0967)	(0.0959)
Constant	2.277***	3.070***	2.772***
	(0.187)	(0.196)	(0.158)
Observations	805	803	804
Adjusted R^2	-0.000529	0.0617	0.0713

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1