

# 1 Early-career Income Trajectories among Physicians and 2 Dentists: The Significance of Ethnicity

## 3 Abstract

4 This article analyses early-career income trajectories among non-Western immigrant  
5 and native-born physicians and dentists in Norway. Register data comprising all  
6 medical and dental graduates from Norwegian universities dating from 1990 through  
7 2005 are utilised. The results show that, on average, immigrants and native-born  
8 individuals display similar income trajectories; however, they do have somewhat  
9 different earnings profiles. Among employed professionals, immigrants receive lower  
10 income premiums as a result of job change but receive higher returns from tenure.  
11 There are no income differences among self-employed professionals.

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7

# 1 Introduction

2 This article addresses early-career income trajectories for non-Western immigrant<sup>1</sup> physicians  
3 and dentists in Norway. Specifically, the income levels for the increasing population of non-  
4 Western minority professionals are compared with those of Norwegian-born medical and  
5 dental professionals. By focusing on those professions, the current study provides valuable  
6 insight into access and closure for some of the most privileged ethnic minority groups in the  
7 labour market. This study is confined to professionals who have attained their degrees in  
8 Norway or who have taken a supplemental examination required for foreign degree holders.  
9 These resourceful individuals have the best odds of achieving full integration. The current  
10 study therefore provides a strong test of labour market discrimination. Addressing early-  
11 career income trajectories is vital because any inequalities that might appear early on are  
12 likely to persist throughout a career (Manning and Swaffield, 2008; Napari, 2009).

13 Previous studies have shown that non-Western immigrants with higher education are  
14 not fully integrated into the Norwegian labour market. Compared to their colleagues from the  
15 majority population, they are more likely to be unemployed during the early stages of their  
16 careers (Brekke, 2007; Støren & Wiers-Jenssen, 2010), there is more often a mismatch  
17 between their qualifications and the positions they hold (Villund, 2008; Støren & Wiers-  
18 Jenssen, 2010) and they receive lower incomes than those enjoyed by colleagues from the  
19 majority population (Brekke and Mastekaasa, 2008). The inequity between immigrants and  
20 the majority population can be only partially attributed to differences in educational  
21 attainment and the transferability of skills. The remaining inequality is often interpreted as  
22 different forms of discrimination, which is especially detrimental for immigrants who are  
23 educated or even re-educated in their new country of domicile.

24 Overall, the before mentioned studies describe a labour market that is less accessible  
25 for highly educated immigrants compared to the majority population with identical education.

1 The level of accessibility, however, depends on occupation because most occupations are  
2 subjected to different terms and conditions regarding competition, laws and regulations and so  
3 forth. Physicians and dentists provide health services in different market sectors. Most  
4 physicians belong to the public sector, whereas the majority of dentists operate in the private  
5 sector. The public/private market logic may affect the economic integration of ethnic  
6 minorities within these professions, which motivates the comparison of these professions in  
7 particular.

8 This study utilises administrative register data on education, employment, income and  
9 demography. The data cover all graduates from 1990 through 2005 who have either attained  
10 their degrees in Norway or taken a supplemental examination required for foreign degree  
11 holders. Those individuals are observed from their first job and for a maximum of 13 years.  
12 Income development is estimated by random effects regression.

### 13 Educational and Labour Market Characteristics

14 There are four medical- and two dental faculties in Norway and the grade-point average for  
15 admission to these professional educations is consistently high across Universities, i.e. there is  
16 no status difference between schools. The dental and medical educations consist of five and  
17 six year's studies, respectively, that combine preclinical and clinical studies. While  
18 odontology students may apply for authorization upon completion of the education, medical  
19 students must engage in an additional 1.5 years of compulsory, supervised residency to  
20 receive authorization. Residency positions are distributed through drawing lots, thus there is  
21 no differentiation between candidates based on academic performance or place of study.  
22 Medical graduates from outside the European Economic Area (EEA) must have their  
23 education recognized as equivalent to the Norwegian education by the Norwegian Agency for  
24 Quality Assurance in Education; pass a medical exam and national exams, including  
25 language, before commencing residencies.

1 Norway has an extensive public health service <sup>ii</sup> which comprises both general practice  
2 (GP) services and specialist services. In 2002, 55% of physicians were employed by state-  
3 owned hospitals (Baltagi, Bratberg and Holmas, 2003). The principal form of organisation  
4 among general practitioners (GPs) is private practice; however, because nearly all GPs have a  
5 service agreement with the municipal authorities, their pay levels are determined nationally.  
6 In 2001, Norway introduced a regular GP scheme that provides every citizen with one  
7 permanent physician of choice.<sup>iii</sup> Prior to the introduction of this scheme, clients were free to  
8 visit any physician of their choosing. Following its introduction, clients choose or are  
9 assigned to physicians who have a contract with their resident municipality. Those GPs who  
10 are attached to this scheme receive about 30% of their income in the form of per capita  
11 payment from the contracting municipality. The remaining 70% is a composite of patients'  
12 copayments and National Insurance reimbursements, and is therefore dependent upon the  
13 number of consultations and types of diagnostic tests and/or treatments (Lian, 2003). The  
14 arrangement implies that GPs' incomes are partially dependent upon their reputation and  
15 attractiveness among patients and partially attributed to the centrality of the practice and their  
16 patients' health status. Those GPs with an immigrant background are disproportionately  
17 practicing in rural municipalities, and twice as many immigrant GPs have free list space  
18 compared with other GPs (Statistics Norway, 2009). It should be noted that most foreign GPs  
19 have a license from the EEA-area, and are hence not part of this study.

20 Dental services are only partially included in the public health service,<sup>iv</sup> and the  
21 largest share of dentists are self-employed or employed in the private sector (about 70%)  
22 (Mastekaasa, 2008: 104). In 2003, 27% of dentists were employed by the public dental health  
23 service (NOU, 2005). These professionals work regulated hours and receive fixed salaries  
24 (Grytten, Holst and Skau, 2006). The labour market conditions for private practice dentists  
25 were altered in 1995 when the authorities dissolved the price regulation on dental services

1 (Grytten, Skau and Holst, 2007). Because dental care for adults is normally not covered by the  
2 national health insurance plan, dentists are more exposed to market mechanisms than  
3 physicians. For example, competition leads to lower service fees in areas with a high density  
4 of dentists, typically urban areas (Grytten and Skau, 1999).

5         In summary, physicians and dentists are affiliated with market segments that  
6 determine their income level in different ways. Physicians and dentists who are employed by  
7 municipality or state health institutions are salaried, and their incomes do not depend on  
8 patient flow. By contrast, physicians and dentists who sell their services in an open market are  
9 vulnerable to falling patient access. For this reason, a measure of market segment is included  
10 in the analysis of income trajectories, and a separate analysis is performed for public/private  
11 market professionals.

## 12 The Economic Integration of Immigrants

13 The evidence on economic integration of non-Western immigrants in Western labour markets  
14 is mixed. Whereas earlier studies revealed a persistent income gap between immigrants and  
15 the native population, more recent research shows that some groups of immigrants *do* reach  
16 economic parity with the majority population, conditioned upon host country education and  
17 employment (Hansen, 2000; Brekke, 2007; Nekby, Vilhelmsson and Özcan, 2008). At the  
18 same time, other studies still detect pay gaps between non-Western immigrants and the native  
19 population at comparable educational levels (Brekke and Mastekaasa, 2008; Galloway, 2008;  
20 le Grand and Szulkin, 2002).

21         At present, few studies have investigated ethnic pay gaps among professionals or other  
22 highly educated groups from a longitudinal perspective. In a recent Norwegian study,  
23 however, Brekke and Mastekaasa (2008) compared income trajectories of master's degree  
24 graduates of Norwegian universities, including medicine and dental medicine, from the ethnic  
25 minority and majority populations. Their analysis showed a substantial income gap that is

1 persistent and increasing among men. Among women, the overall difference is smaller and  
2 not significant, but there is a tendency towards an increasing native–immigrant income gap  
3 (Brekke and Mastekaasa, 2008: 16). According to their own assessment, these findings are  
4 consistent with theories on discrimination and social networks. Immigrants receive lower  
5 income partly because they are less well connected, and a lower income peak can suggest  
6 increased discrimination for top-level positions.

7         By providing extensive controls for educational attainment and academic performance,  
8 the Brekke and Mastekaasa (2008) study yields convincing results in terms of discrimination  
9 playing a part in non-Westerners having lower income. Detailed measures of labour market  
10 accumulated human capital, however, were not in the scope of their analysis. Rather, they  
11 used "years since migration" and "years since graduation" to estimate returns to labour market  
12 accumulated human capital. Drawing on the recent insights from Galloway (2008), these  
13 commonly used experience proxies are potentially biased due to immigrants' higher  
14 propensity for being unemployed. As it is, highly educated non-Westerners have a lower  
15 likelihood of being employed following graduation (Brekke, 2007; Støren and Wiers-Jenssen,  
16 2010) and during subsequent years (Støren, 2004; Brekke & Mastekaasa, 2008). Hence, if  
17 immigrants receive lower monetary compensation following "years since graduation", this  
18 cannot be precisely attributed to immigrants having lower quality jobs or having lower  
19 likelihood for being employed throughout the year.

20         The present study elaborates on both the above studies in two major concerns; firstly,  
21 addressing income development in one of the most privileged segments of the labour market  
22 provides an overview of the comprehensiveness of discrimination against non-Westerners, not  
23 only among employers but also in the general public since it addresses private practitioners.  
24 Secondly, it aims to disclose the stages during which any differences might accrue through  
25 detailed measures of accumulated labour market experience. More precisely, it distinguishes

1 between general experience, tenure and job shift with reference to theories on statistical  
2 discrimination, social networks and preference-based discrimination. The former theories are  
3 discussed in context of employer-employee relationships, while the latter is discussed in  
4 context of private practitioners selling services to clients.<sup>v</sup>

## 5 Theoretical Framework

6 The point of departure for this study is that physicians and dentists occupy a privileged  
7 position in the labour market compared with other highly educated groups. In the sociology of  
8 professions, the Weberian notion of closure has been applied to explain how academic and  
9 professional groups manage to secure privileged market positions through monopolisation of  
10 positions and the client base. Thus, where occupational closure has been realized, professional  
11 membership becomes the chief criterion for accessing the resources monopolised by the  
12 profession (Parkin, 1979: 98; Weber, 1978: 342; Freidson, 2001: 201-206). Furthermore, the  
13 profession's hold on the supply-demand equilibrium (Freidson, 2001: 93) can function as a  
14 mechanism that counteracts discrimination because markets with bounded competition will  
15 display a weaker relationship between earnings and relative demand simply by restricting  
16 clients' and employers' freedom of choice. As it is, the Norwegian labour market has  
17 displayed a continual undersupply of both physicians and dentists (Texmon and Stølen, 2009);  
18 there is basically no unemployment in these occupations. Those characteristics of  
19 professionals themselves and the institutional framework in which their work is embedded  
20 give good reasons for assuming small or insignificant wage differences between non-  
21 Westerners and majority physicians and dentists.

22 Nevertheless, occupational closure does not imply that all members participate in  
23 actions leading to closure—nor does it imply that all benefit equally from it (Weber, 1978;  
24 Weeden, 2002). Researchers have argued that new groupings within the profession face  
25 difficulties in gaining access to the most prestigious—and, hence, often the most

1 economically rewarding—positions (Carter, 2003; Hansen, 2001a; Hoff, 1998; Leicht and  
2 Fennell, 2001; Weeden, 2002). A reliance on social networks for hiring, a lack of recognition  
3 for foreign education and experience, different forms of discrimination and sponsorship are all  
4 examples of how formal and informal strategies create internal stratification where candidates  
5 most similar to the dominant group—white, middle-class males—are better positioned to  
6 exploit the available resources (Carter, 2003: 71-75; Riska, 2001; Tomaskovic-Devey, 1993).  
7 Previous research has demonstrated significant income gaps among highly educated in  
8 immigrants' disfavour (Brekke and Mastekaasa, 2008; Le Grand and Szulkin, 2002). Based  
9 on this, non-Westerners may develop income trajectories abate of the majority.

## 10 Statistical discrimination

11 Employers hiring highly skilled labour are generally unable to confirm candidates'  
12 productivity level, which makes it a decision of considerable risk (Arrow, 1973; Kaufman,  
13 2002: 550). The theory of statistical discrimination emphasises that in those situations,  
14 employers are inclined to call upon secondary information such as ethnicity, gender, age and  
15 place of study to find the best applicant. The information obtained from these secondary cues  
16 may be accurate, on average; however, it may also be based on employers' prior experience,  
17 or lack thereof, with members of the same group and stereotypes (Kaufman, 2002: 550). The  
18 theory predicts that employers will seek to minimize risk by offering a lower salary, or in a  
19 situation with fixed salaries, not hire candidates associated with risk (Arrow, 1973: 26), at  
20 least not directly into a multiple-level career ladder (Marsden, 2008). After observing  
21 employee productivity, however, compensation will be according to productivity. In addition,  
22 productivity in one firm need not translate to the next, implying that this form of prejudiced  
23 discrimination can adhere throughout the career. If employers display higher levels of  
24 uncertainty towards immigrant professionals than majority professionals, as research suggest  
25 they do (Brekke and Mastekaasa, 2008; Støren and Wiers-Jenssen, 2010), it is expected that

1 they would compensate the former group less for their general experience compared with the  
2 latter. As immigrants demonstrate their true productivity, however, they should be correctly  
3 compensated. The hypothesis derived concerns the prevalence of statistical discrimination in  
4 medical and dental occupations:

5

6 H1: Immigrants receive lower returns to experience and higher returns from  
7 tenure compared to majority professionals.

8

9 Separating between general experience and tenure in this manner opens for a more  
10 thorough investigation of the tenets of statistical discrimination theory that could otherwise go  
11 undetected in a conflated measure of labour market experience. It is conditioned on, however,  
12 that immigrants' productivity actually surpasses initial pay level, and that it is observable  
13 through returns to tenure.

#### 14 Social Networks

15 Health professionals' career trajectories are termed "horizontal" because their skills are highly  
16 transferrable across organisations; professionals make their career by moving across  
17 organisations gaining in expertise and esteem, but it can also involve upwards mobility in  
18 clinical-, administrative- or academic career ladders (Freidson, 2001: 76, 102). Achieving  
19 specialist status for example opens for a broader range of (senior) positions across a spectrum  
20 of organisations and conveys the right to charge specialist rates. From a career perspective, it  
21 is therefore vital to account for the effect of mobility on income development.

22 According to social network theory, actors who have wide-ranging contacts in the  
23 established profession can utilize their network to procure higher paying jobs within their  
24 respective profession (Granovetter, 1995; Marsden, 2008). Network recruitment is common in  
25 the Scandinavian labour markets (Hansen, 1997; Behtoui, 2008), and informal job-matching

1 is considered especially influential for allocating professional and managerial jobs as it can be  
2 both costly and difficult to dismiss wrongful hires (Marsden, 2008). During career onset,  
3 social contacts such as family and friends are more frequently used by job seekers as they do  
4 not yet have an extended professional network of their own (Granovetter, 1995). As there is  
5 strong social selection into medicine (Hansen, 2005), those graduates can have contacts not  
6 easily matched by immigrants. An association between social background and career outcome  
7 has formerly been documented for the law profession; those who have high social background  
8 also have more rewarding careers (Hansen, 2001b).

9 Returns to job shift are related to social networks in two ways: Firstly, in terms of  
10 bringing the applicant information about relevant positions, and secondly by reducing  
11 employer uncertainty through conveying information about the applicant. In this manner,  
12 social networks bridge the information gap that give rise to statistical discrimination upon  
13 hiring. The discriminatory propensities of social networks are that not all demographic groups  
14 are equally positioned to exploit the resources embedded in networks. In terms of explaining  
15 immigrants' lower earnings, theories on social networks is often evoked on grounds of  
16 immigrants being less well connected, i.e. they have fewer and less relevant contacts and are  
17 thus unable to transform their social contacts into tangible returns in the same manner as  
18 majority colleagues. Studies have shown that immigrants and ethnic minorities are less  
19 successful at making use of network contacts to find jobs and that this *does* contribute to  
20 lower incomes (Behtoui, 2008; Petersen, Saporta and Seidel, 2000).

21

22 H2: Immigrants receive lower returns to job shifts compared to majority  
23 professionals.

## 1 Client discrimination

2 The health professions are proposed as labour market shelters because of the regulatory  
3 framework pertaining to these occupations. However, because these arrangements are absent  
4 or less developed in the private market, the income levels of professionals operating in this  
5 sector may be more exposed to clients' 'taste for discrimination' (Becker, 1971), especially  
6 when clients pay total costs and make unrestricted choices. Assuming that clients are inclined  
7 to discriminate, and that they have *access* to other professionals who satisfy their preferences,  
8 qualities like gender and ethnicity may become decisive. The effect of these discriminatory  
9 propensities on income increases if clients are willing to pay extra to see co-ethnic  
10 professionals but decreases if clients do not volunteer extra payment or if their choice of  
11 alternatives is limited. Although immigrant physicians under the list patient scheme have  
12 fewer patients on average than physicians with a majority background, the effect of clients'  
13 discriminatory preferences may be more marked for dentists in private practice because there  
14 is no public scheme that regulates dentistry services in the same manner as national insurance  
15 and the list patient scheme. The validity of this assumption is tested empirically by comparing  
16 self-employed physicians and dentists with immigrant and majority background. If there is a  
17 negative main effect of immigrant background, this is interpreted as client-based  
18 discrimination.

19

20 H3: Immigrants receive lower incomes in the private market compared to majority  
21 professionals

22

23 In contrast to the former hypotheses, this hypothesis addresses discriminatory  
24 dispositions in the population at large were formal regulations and equal opportunities  
25 policies do not have a stronghold.

## 1 Data and Method

2 The data analysed here consist of all physicians and dentists who have attained their degrees  
3 in Norway or who have taken a supplemental examination required for foreign degree holders  
4 during the period from 1990 through 2005. These data do not include health professionals  
5 holding a licence from within the EEA.

6 The data combine four public registers administered by Statistics Norway. The files  
7 are arranged as panel data with annual records for a 13-year period from 1993 through 2005.  
8 The panel is unbalanced, but compact, as ethnic minorities are not found in any substantial  
9 number in a given year, and the expanding structure makes the best use of the available  
10 information on ethnic minorities' labour market careers. Owing to a change of routine in the  
11 registration of data, self-employed income is studied for the period 1993–2002. In total, there  
12 is 49 702 observations over 8 154 individuals; whereof 7 397 observations and 2655  
13 individuals are on self-employed.

## 14 Dependent variable

15 The income measure is a composite of employees' salaries and gainful income for the self-  
16 employed as reported to the tax authorities.<sup>vi</sup> The composite measure is preferred over salary  
17 for employed professionals as well because many physicians and dentists combine  
18 employment and self-employment. Hansen (2001b) showed that a wider income measure  
19 reveals larger income inequality. Hence, restricting the analysis to only salaried income would  
20 oversimplify the complex income structure in this group because they frequently combine  
21 multiple sources of income (Godager and Lurås, 2009). Additionally, in light of Hansen's  
22 (2001b) research, a more inclusive income measure is appropriate when the objective of the  
23 study is to reveal any income inequalities between physicians and dentists with immigrant and  
24 majority backgrounds.

1           Income is deflated to the level in the year 2002 in Norwegian kroner using the  
2 consumer price index. The natural logarithm of income is used for analytic purposes, and any  
3 negative income entries are set to zero.<sup>vii</sup>

#### 4 **Independent variables**

5           The category ‘non-Western immigrants’ consists of individuals born in Asia, Turkey, Eastern  
6 Europe, Latin America and Africa whose parents are also foreign born.<sup>viii</sup> The five largest  
7 national groups in this sample of physicians and dentists are of Iranian, Vietnamese,  
8 Pakistani, Indian and Sri Lankan descent, and these nationalities account for 60% of the non-  
9 Western immigrants in the sample. The reference category is Norwegian born.

10           The variables for general experience and tenure denote actual labour market  
11 experience in years after graduation. The variables for general experience measure experience  
12 prior to tenure in current employment, whereas the variables for tenure capture the entire  
13 work period from start date to present (31st of December if the employment relationship  
14 continues into the next year). To prevent multicollinearity, the experience measures are mean  
15 centred at 2 years. The job mobility variable increases by one for each time a break in the  
16 work spell is encountered. Because only mobility across employers or from employment to  
17 self-employment and vice versa would yield a break in the work spell, internal job mobility is  
18 not identified. Mobility is mean centred at one job shift. A dummy for self-employment  
19 identifies those registered as self-employed until 2003. This is the variable used to capture the  
20 effect of private practitioners versus employed professionals.

21           The variable for work hours is a dummy variable that identifies part-time work as less  
22 than 30 hours of work per week. Full-time work is defined as 30 or more hours of work per  
23 week.<sup>ix</sup> It follows that the relationship between income and hours worked cannot be precisely  
24 estimated from this categorisation, thus suggesting a cautious interpretation of the results.  
25 Professionals within both medicine and dentistry can take on additional shifts and/or work

1 overtime to raise their income level. If physicians or dentists with an ethnic minority  
2 background compensate for a lower income level by putting in more hours, it is a form of  
3 adaption not detected by the data at hand. The variable for ethnic concentration in the area of  
4 practice is a dummy which separates between municipalities with high ethnic share (above  
5 national average) and low ethnic share (below national average). Unfortunately, this  
6 information is unavailable for the bulk of self-employed. The variables for part-time work and  
7 ethnic concentration are suppressed in the tables. The following variables are also controlled  
8 for in the analysis but suppressed in the tables: age at graduation (centred at 29 years), family  
9 pattern (married with no children, married with children and single with children; single  
10 without children as the reference category), type of industry (general practitioner, hospital,  
11 dental, education, public administration) and foreign degree (physicians only). Time-specific  
12 effects are controlled for by a set of dummy variables, with the year 2002 as the reference  
13 category. Descriptive statistics on the main variables are presented in table 1.

14

### 15 **Table 1** Descriptive Statistics

16

17 Overall, there are small differences between non-Westerners and the majority, however, non-  
18 Western physicians are much more likely to have a foreign degree (67%) compared to  
19 majority physicians (9%). Furthermore, non-Westerners are four years older at graduation  
20 compared to their majority colleagues, and lastly; the share of self-employed non-Western  
21 dentists are only half of majority dentists (19%).

### 22 **Method**

23 In linear panel data analysis, random effects regression and fixed effects (FE) regression are  
24 commonly used. Because the aim of this paper is to disclose income differences between  
25 immigrants and the majority population, time invariant coefficients need to be estimated. For

1 this purpose, random effects models are preferred over the less restrictive—and less  
2 efficient—FE approach. Nonetheless, I performed comparable analyses using the FE  
3 approach and reached the same conclusion regarding the direction and significance level of  
4 the estimates.<sup>x</sup>

5         The models have been tested for autoregressive standard errors; however, because the  
6 residuals displayed only a weak autoregressive correlation, cluster robust standard errors  
7 allowing for interdependence within units were preferred.

8         To address any interaction effects between gender and profession, the models were  
9 produced separately for female and male physicians and dentists.

**Table 2****Model 1****Model 2****Model 3**

RE-estimates obtained from random effects regression on the dependent variable "Logarithm of income in 2002 NOK". Omitted covariates: educated abroad, age at graduation, part-time, ethnic concentration (2 categories), industry (5 categories), civil status (3 categories) and year (12 categories).

Cluster-robust standard errors in parentheses. <sup>a</sup>p≤0.1 \*p≤0.05, \*\*p≤0.001, \*\*\*p≤0.001

Note on abbreviations: Phy: Physicians; Den: Dentists; F: Female; M: Male; SE: Self-Employed.

## 1 Findings

### 2 Employed professionals

3 Models 1 and 2 (see Table 2) are specifically for employed professionals.<sup>xi</sup> Model 1 tests  
4 if immigrants are subjected to statistical discrimination, in which case immigrants are  
5 expected to receive lower returns from general experience and higher returns from tenure  
6 compared to majority colleagues.

7 Model 1 show that immigrants receive lower returns from general experience and  
8 higher returns from tenure compared to majority colleagues, except females who receive  
9 equal returns to tenure independent of origin. Moreover, male non-Western physicians  
10 earn roughly 5% (0.046) more than majority colleagues.

11 The findings in model 1 is presented in Figure 1 which shows returns to tenure at  
12 fixed values for general experience (5 years), industry (hospital/dental industry) and work  
13 hours (fulltime).

14

#### 15 **Figure 1** Income Development in Employment

16

17 The figure clearly shows that male immigrants start at a lower income level  
18 compared to majority co-professionals, but subsequently receives a better income  
19 increase resulting from tenure. This finding corresponds to the expectations outlined  
20 under the statistical discrimination hypothesis; however, because the interaction term  
21 between immigrant and general experience is insignificant, an emphasis should not be  
22 placed on this finding. The figure also shows that immigrants' income peak earlier in their

1 careers and decline at the end of the period compared to their majority counterparts. Male  
2 immigrant dentists' and physicians' earnings level out and decline after 5 and 9 years of  
3 tenure, respectively, whilst majority men still receive higher returns from tenure. Though  
4 it could be interpreted as immigrants hitting the glass-ceiling within these organisations,  
5 it could also be due to relatively fewer observations at the high end of tenure.

6

7 Model 2 shows that job shifts generally yield a wage premium; however, the  
8 negative interaction terms between mobility and immigrant background indicate that  
9 returns from job shift are lower for professionals with immigrant backgrounds, although  
10 not significantly so for female dentists and significant at the 0.1 level for male physicians.  
11 The relative income development from job shifts is presented in table 3.

12

### 13 **Table 3** Relative Income Gain/Loss from Job Shifts

14

15 Table 3 show that the highest income gain is received through the first two (dentists) or  
16 three (physicians) job shifts after which the salary level stabilize or decrease. Non-  
17 Westerners receive about half the increase as majority colleagues; at least over the first  
18 three shifts, after which the picture become more complex. Furthermore, physicians  
19 receive a relatively lower income gain from job shifts compared to dentists and women  
20 receive a relatively lower income gain compared to men from the same profession.

### 21 **Professionals in Private Practice**

22 Model 3 (table 2) are jointly specified for male and female professional and investigate  
23 whether immigrants in private practice are subjected to discrimination in client-sensitive

1 markets. There is no main effect of having immigrant background among physicians in  
2 private practice. Dentists in private practice earn roughly 17% (-0.180) less than their  
3 majority colleagues, but this difference is not significant. Two interaction terms between  
4 tenure on the one hand and non-Westerners and women on the other is included in the  
5 model. In the context of private practice, tenure measure adjustment to the community  
6 and enlargement of clientele. The coefficients for tenure and non-Westerners display a  
7 weaker growth for immigrant physicians and dentists compared with the majority. This  
8 effect is not, however, significant. Income trajectories of professionals in private practice  
9 at fixed levels of general experience (5 years) are presented in figure 2.

## 10 **Figure 2** Income Development in Private Practice

11

12 The figure clearly shows that majority practitioners have higher earnings across time,  
13 although the relative loss of non-Westerners are not statistical significant. Women,  
14 especially female physicians, display a much flatter income trajectory in self-employment  
15 compared to men.

## 16 **Discussion**

17 Previous studies have yielded contradicting results regarding income equality among  
18 highly skilled immigrants. The present article narrows the scope to elite professional  
19 groups in the Norwegian labour market and, at the general level, documents earnings  
20 parity between immigrants and the majority with equal amounts of labour market  
21 experience. This finding supports the expectation of small or insignificant income  
22 differences among non-Western and majority physicians and dentists.

1            Nevertheless, based on theory and former research, it was also assumed that given  
2 the choice between equally qualified immigrants and majority applicants, employers  
3 would prefer the latter with which they have prior experience. If the labour market was  
4 less permeable for immigrants, a possible way around it would be to start in a rank and  
5 file position and advance from within. An adaption of this kind would be observable if  
6 wrongly positioned professionals reap lower returns from general experience than rightly  
7 positioned individuals, and then display higher tenure growth as they progress into  
8 positions which correspond to their qualifications.

9            The findings showed that immigrants receive lower returns to general experience,  
10 although not significantly so, and that male immigrants actually received higher returns  
11 for tenure. To the extent that returns to tenure denote intra-organisational career  
12 trajectories, immigrants have at least as profitable careers as majority professionals. The  
13 concave tenure-trajectory were more pronounced among immigrants which imply that  
14 their returns to tenure peak at an earlier stage and decline faster than what is observable  
15 for majority colleagues. This feature opens for a competing interpretation: that  
16 immigrants' higher returns from tenure are caused by the number of hours worked. The  
17 present study has one previously discussed caveat—namely, that estimation is performed  
18 for potential rather than actual hours worked.<sup>xii</sup> Income is an important career measure  
19 and even though jobs and salaries correspond on the general level, salaried employees at  
20 different hierarchical positions or within different specialty fields can easily reduce or  
21 compensate income differences through overtime, on-call duty and extra shifts that are  
22 not covered by their work contracts. If physicians or dentists with an ethnic minority  
23 background compensate for lower income by putting in more hours, this is not detected

1 by the data at hand. Hence, to ensure that similar income trajectories also imply similar  
2 career trajectories, more detailed study on these occupational groups is in order.

3         The findings on general experience and tenure do not support the tenets of  
4 statistical discrimination theory. Considering that the point of departure for this study was  
5 that medical education programmes produce a homogeneous student body with regard to  
6 abilities and competencies (Mastekaasa, 2008: 109), possessing a degree in those subjects  
7 ought to reduce any employer uncertainties regarding immigrants' abilities. Furthermore,  
8 the standardisation of physicians and dentists skills means that any labour market  
9 experience are highly transferable between employers and estimated returns to experience  
10 should reflect the employers' valuation of their general experience and assumed  
11 productivity, rather than immigrants and the majority having vastly different experiences.  
12 It is therefore not surprising that there is limited occurrence of statistical discrimination in  
13 this labour market segment.

14         It was further assumed that professionals with majority backgrounds were better  
15 positioned to rely on their network to acquire jobs which would promote their career. The  
16 findings on job shift showed that immigrants' income premium from job mobility was  
17 substantially lower compared with the majority. Female dentists, however, received equal  
18 outcomes irrespective of origin. Perhaps personalized contacts and references become  
19 especially valuable when there is small intra-professional variance in credentials? Social  
20 contacts ought to have less impact in a regulated and achievement oriented labour market,  
21 but backing from a senior can tip the scale when employers are presented with equal  
22 credentials (Carter, 2003: 69-70). The importance of sponsorships and "old-boys  
23 networks" for procuring a specialty or promotions in general are discussed with reference

1 to gender (Riska, 2001) and ethnicity (Carter, 2003: 71-72); as contenders to the  
2 established profession, these groups are portrayed as having larger difficulties gaining a  
3 foot-hold within prestigious specialties. Although an extensive education and residencies  
4 during degree completion may even out the playing field between immigrants and the  
5 majority, social networks have a non-instrumental, congenial side that may continue to  
6 favour members who resemble the old professional body (Carter, 2003:72-73). The  
7 results on job shifts thus add merit to the social network explanation of earning  
8 differences between the majority population and immigrants.

9         Lastly, private practitioners, especially dentists, were assumed to be in a  
10 vulnerable position regarding discrimination from clients. Whereas employers must  
11 adhere to rules and regulations regarding employment and promotions that emphasise  
12 achievement and merit, clients are not so obligated. To some extent, guidelines from the  
13 national public health service limit clients' degree of choice and organise queues within  
14 the health service for physician services. There is not a similar reimbursement and  
15 queuing system for dental services. It is therefore interesting that immigrant private  
16 practitioners are not penalised relative to the majority in these client-sensitive markets.  
17 This finding implies either that clients do not discriminate or that the curbed competition  
18 counteracts clients' tastes by limiting supply; it is probably a mixture of both. According  
19 to Kleiner and Kudrle (2000: 548) authorisation has the effect of reducing client  
20 insecurity over service quality through 'truncating the bottom of the quality distribution'.  
21 In other words, clients are assured that practitioners meet a predefined standard set by  
22 authorities and the profession itself. Clients' may thus be less hesitant towards immigrant  
23 professionals. Nevertheless, an issue which is of concern to the general public is language

1 barriers. If clients disqualify practitioners with foreign-sounding names prior to  
2 consultation, it is a safe-guarding behaviour that affects immigrants irrespective of  
3 language skills. Since there is no negative main effect of immigrant background, it does  
4 not seem like clients, or employers for that matter, discard practitioners on this basis. The  
5 fact that the foreign physicians in this sample has gone through quite comprehensive  
6 measures to attain a medical authorization suggest that authorization also is an attestation  
7 of language skills. Furthermore, being multilingual is also an asset, especially in city  
8 areas with a high ethnic representation. An American study showed that ethnic minority  
9 physicians' earnings depend on the relative representation of co-ethnic inhabitants in the  
10 physicians' area of practice. Minority doctors received an income premium in areas  
11 where they were under-represented relative to the share of co-ethnic inhabitants and an  
12 income penalty if they were over-represented (Brown, Scheffler, Tom and Schulman,  
13 2007). This undoubtedly has to do with language and culture; good communication is of  
14 essence in professional-client meetings and clients perhaps expect it to run more  
15 smoothly if they have the same first language. Whether a similar tendency is in effect  
16 among the Norwegian population is not detectable from the data available here, as it  
17 would require detailed information on area of practice.

## 18 Conclusion

19 The main conclusion of this study is that immigrants receive similar or higher earnings  
20 compared to majority co-professionals. Thus, in line with this article's outset it can be  
21 concluded that discrimination is not prevalent in this privileged labour market segment,  
22 neither from employers nor clients. It thus separates from former studies of the economic  
23 integration of highly educated immigrants (Brekke and Mastekaasa, 2008; le Grand and

1 Szulkin, 2002; Galloway, 2008) which showed income gaps in immigrants disfavor. It  
2 should be recalled, however, that the measures applied here estimates income returns  
3 based on labour market activity and does not capture income disparity arising from  
4 intermittent employment. Yet, the fact that immigrants receive lower returns from job  
5 shifts relative to majority professionals suggests that there are some manifest differences  
6 of opportunity among majority and immigrants.

7

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<sup>i</sup> The non-Western regions include Eastern Europe, Asia (including Turkey), Africa and Latin America.

<sup>ii</sup> Health care is free of charge for children under 12 years. Older patients are charged a patient's copayment. State subsidies cover real costs.

<sup>iii</sup> The average list length is about 1 200 patients, and GPs in rural municipalities receive extra funds if their client base falls short of the national average list length (Lian, 2003).

<sup>iv</sup> Patients under 18 years receive free dental care. Adult patients receive free dental care in exceptional cases only.

<sup>v</sup> Social networks could also be discussed with reference to establishment and transaction of private practices, but that falls outside the scope of analysis.

<sup>vi</sup> Sickness benefit is income.

<sup>vii</sup> The self-employed may subtract income loss from taxation. Less than 0.1 % has negative income entries.

<sup>viii</sup> I performed analyses separating between Asia and Eastern Europe. These analyses show that differences mainly pertain to those originating from Eastern Europe.

<sup>ix</sup> Regular work hours are not available as continuous measures.

<sup>x</sup> Results from FE are not presented but are available upon request from the author.

<sup>xi</sup> A full table including all covariates, beside year-dummies, are available as supplementary material (page link)

<sup>xii</sup> See Morgan and Arthur (2005) on how to best estimate income among employed professionals.

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