Regulated Occupations and Foreign Qualification Recognition: An Overview

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Abstract

The theory and practice of occupational regulation are outlined together with associated issues regarding foreign qualification recognition. Tradeoffs between public safety and the monopoly power inherent in occupational regulation are highlighted, together with a description of the increasing scope of occupational regulation both in terms of the numbers of occupations coming under regulation from government and the share of workers subject to those regulations. The focus is on the implications of occupational regulation for highly skilled immigrants seeking employment in the occupation in which they hold a relevant academic credential. For countries outside of the US, it is striking how little quantitative research has been conducted in the area. A better understanding is crucial since policies on and approaches to occupational regulation are evolving rapidly in part because of the increasing scale of skilled migration.

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Introduction

Improved understanding and analysis of both occupational regulation and the labour market integration of adult immigrants are important inputs for the ongoing public policy initiatives being undertaken by federal and provincial/state/territorial governments in a range of countries, including Canada and Australia, which are natural comparators. As a labour market institution, occupational regulation is increasingly prevalent in developed nations and warrants far more study than it has attracted to date. Current practice, commonly taking the form of legislatively mandated self-regulation, embodies various trade-offs. In particular, while on the one hand occupational regulation is a solution to asymmetric information and transactions costs problems, on the other hand it provides insiders with a degree of monopoly power that has the potential to result in significant costs to society as a whole. To illustrate, self-regulation can convey information validating the minimum quality of expert services to patients/clients/customers who would otherwise lack such information or find it difficult to acquire. But self-regulation also institutionalizes each occupation's authority over occupational entrance requirements. An associated incentive in many situations is to reduce access for potential entrants, thereby reducing services to clients and increasing prices so as to benefit incumbents. The latter is especially concerning for the purposes of this overview since monopolistic restrictions on new entrants may have serious negative consequences for, among others, foreign trained immigrants.¹ These broad areas are the focus of this paper, which provides an introduction to the topic and also serves as context for the other papers in this issue of *Canadian Public Policy*.

Internationally, despite serious gaps in appropriate data to study the issue, there is a growing awareness of the appreciable increase in the share of both occupations and the workforce that face some form of government regulation. Of course, there are marked differences in approach across countries with common law, as opposed to civil law, and much of the discussion regarding the increase appears to come from common law jurisdictions. For example, undertaking innovative data development for the US, Kleiner and Krueger (2013) show that the share of workers who are licensed (a common form of occupational regulation) has increased from less than five percent in the 1950s to almost 30 percent in 2008. This implies that, in terms of sheer numbers, it overtook unionization as the dominant labour market institution in the 1980s. The UK has also seen a rise in occupational regulation as discussed by Humphris, Kleiner, and Koumenta (2010), and major reform and centralization has occurred in Australia with most occupations moving from state/territorial purview to that of the federal government.

In Australia, the past four decades have seen the establishment of “peak” or national assessment and accreditation bodies in major fields such as medicine, nursing, engineering and accounting, supported by strong state buy-in and representation. As a result, inter-state mobility is dramatically improved and red tape vastly reduced for both domestic and migrant professionals. Since 2010 for example, registration processes in 14 key health fields have been governed by National Boards coordinated by the Australian Health Practitioner Regulation Authority, at the instigation of the Council of Australian Governments. However, a number of occupations (such as teaching and law) still require registration at the state level (Hawthorne and Wong 2011; Hawthorne 2013a).

¹ Other negative side effects are possible. For example, discipline and enforcement may be affected, and there may be limits on the efficiency of national/ regional skilled migration policies.

We are aware of no direct evidence regarding trends in the number of regulated/licensed workers in Canada although it is possible, using difficult to compile and limited lists of occupations that are regulated, to track the number of workers in regulated occupations as is done by Gomez et al. (2015). However, what is clear is that the regulation of previously unregulated occupations is commonplace – especially in the health sector.² Beyond simple trends, there is little economic analysis of regulated occupations in Canada (but for an exception see Coe and Emery 2012). Selected academic disciplines, such as sociology (e.g., Adams 2010; Boyd 2013) and some health professions (e.g., for nursing see the *Journal of Nursing Regulation*) have, in contrast, larger literatures on the topic, and there is limited research in administrative law (e.g., Lahey and Currie 2005; and Mysicka 2014). More importantly though, there is a large professional (sometimes called grey) literature on the topic (e.g., Bayne 2012) and many relevant organizations and advisory bodies that produce reports on various dimensions of occupational regulation (e.g., Ontario’s Health Professionals Regulatory Advisory Council; <http://www.hprac.org>). This is also the case in Australia, including reports generated by peak regulatory bodies such as the Australian Medical Council and Engineers Australia, and commissioned by the federal government including parliamentary reviews (Australian Medical Council 2010; Joint Standing Committee on Immigration 2006; Gonczi et al. 1990).

Much more research has been undertaken regarding the labour market outcomes of new immigrants to Canada than about regulated professions. As presented by, for example, Aydemir and Skuterud (2005) and surveyed by Picot and Sweetman (2005, 2012), it is well understood that earnings at entry relative to the Canadian born have declined very substantially from the 1970s until at least the 2010s. Moreover, while there may be a modest increase in the rate of earnings growth for more recent arrival cohorts, it takes decades for immigrants arriving in later cohorts to attain equivalent earnings to those at entry for earlier immigrants. Some portion of this decline is commonly attributed to problems in recognizing valid and equivalent foreign qualifications (Augustine 2015a), and some comes from difficulties in establishing education, training and apprentice (bridging) programs to assist those with qualifications that the recognition process deems not to be equivalent to the Canadian. Of course, this is complicated by the entry to many educational, training and similar programs (and employment) being competitive, so that simply attaining the minimum standard associated with (foreign and/or domestic) qualification recognition is not sufficient for many purposes.

The terms foreign qualification recognition (FQR) and foreign credential recognition (FCR) are sometimes employed interchangeably. However, in accord with the majority of the literature we take FQR to be broader. FCR is most commonly restricted to formal credentials, and in particular academic educational degrees/diplomas. FQR encompasses FCR but also includes general and specific labour market experience, nonacademic qualifications, language skills (whether formally assessed or not), and the like. This broader scope is important. In Australia, for instance, English language testing is the most critical current barrier to migrant health professionals securing medical and allied health registration, in a context where mandatory English standards have been set in 48 fields (Hawthorne and To 2013). Additionally, economists point out that the decline in the rate of return to formal credentials for new

²For example, in Ontario kinesiologists, pharmacy technicians, and practitioners of traditional Chinese medicine have all recently been regulated. In response to the increasing scope and nature of occupational regulation, the Canadian Network of National Associations of Regulators (<https://www.cnnar.ca/>) was formed in 2003, and federally incorporated in 2006. A key international association is the Council on Licensure, Enforcement and Regulation (<http://www.clearhq.org/>).

immigrants has been modest in Canada, however the decline in the rate of return to pre-migration experience has been substantial, supporting the use of the broader concept as being more relevant (see, e.g., Picot and Sweetman 2012; and Green and Worswick 2010). Those interested in further background on FQR, and international comparisons of selected EU countries as well as Australia and Canada, should consult the collection edited by Schuster et al. (2013).

At the juncture of occupational regulation and immigrant integration is a perception that the cost of FQR and occupational (re-)entry following migration is excessive for regulated professions and this is hindering the labour market integration of new immigrants. Some characterize immigrants' inability to practice in their trained occupation as "brain-waste" (e.g., Bourgeault 2007), although this need not apply to all immigrants not working in their trained occupation. Further, in recent years Canada's federal government has placed a substantial focus on immigrant FCR (and to some degree FQR). Efforts include Citizenship and Immigration Canada's Foreign Credential Referral Office, Employment and Social Development Canada's Foreign Credential Recognition Program, and Health Canada's Internationally Educated Health Professionals Initiative. Provincial governments have also acted, as discussed near the end of this survey. Australia's federal government initiated a major program designed to improve foreign qualification recognition from 1989, after a decade of state-driven activism (Iredale 1987, 1997). Nine priority professions and trades were targeted, supported by sustained national funding (Hawthorne 2002). Foreign credential recognition was also subject to three parliamentary reviews (1996-2012).

The remainder of this overview of selected topics related to occupational regulation and FQR is structured as follows. In the next two sections relevant background on each is presented and then a brief analysis is provided of the intersection of the two. Finally questions for future research are explored and conclusions drawn.

The Structure of Occupational Regulation

The range of structures feasible for occupational regulation derived from legislative mandate goes far beyond the concept of licenses issued by self-regulatory colleges (sometimes called boards or associations) that seems to be the focus of current policy discussion, especially in common law countries. Even within the scope of a legislative framework establishing such colleges, there are many substantive details that vary across jurisdictions and occupations, with a useful brief Canadian historical discussion provided by Schultze (2008).³

Kleiner (2013) argues that there are "stages" of occupational regulation with occupational members/leaders seeking more stringent government-originated regulation because that accords greater opportunity for monopoly benefits. In general, however, it is perhaps more useful to think of there being some appropriate type or structure of regulation that varies as a function of the nature of the relevant factor and product markets. There are also differences in the degree of regulation in particular occupations across jurisdictions, with many idiosyncrasies. For example, "professional" engineering is highly regulated in Canada – but simultaneously, and perhaps

³Additional discussions of the scope of occupational regulation provided by: Bartle and Vass (2005) focusing on self-regulation in the UK; Bourgeault and Grignon (2013) looking at health occupations across the OECD; Cox and Foster (1990) addressing the US context for the US Federal Trade Commission. In the Canadian context seminal reports include the Manitoba Law Reform Commission (1994), Ontario's Health Professions Legislation Review (1995), and the Government of British Columbia's (2002) *Safe Choices* model for health professions.

oddly, regulatory certification is not required for very many engineering jobs. At the same time, it is a quasi-regulated field in Australia where 80% of migrant qualifications have in recent years been fully recognized at the point of arrival in Australia. Further, unlike Canada, Australia has no requirement for host country professional engineering experience. It is interesting to note that these differences exist despite Canada and Australia being founding members of the Washington Accord in engineering (International Engineering Alliance, 2015).

Our intention in this introduction is not to provide a comprehensive list of regulatory types but it is worth considering some of the alternative forms that exist while recognizing that more intense forms of regulation frequently encompass elements of less intense ones. In doing this it is helpful to understand that terms such as “certification,” “registration” and “licensure” do not have common definitions across jurisdictions, or even within jurisdictions in some cases. Context-specific definitions, which can sometimes be quite detailed and nuanced, are nevertheless extremely important in practice. Despite this ambiguity, we adopt what we perceive to be a common use of these terms for the purposes of this summary.

Registration, whereby workers provide background information and are included on a “list” of some sort, is one of the simplest types of regulation (e.g., The British Columbia Care Aide and Community Health Worker Registry). Sometimes there are modest criteria – for example, educational minimums and/or ethical criteria such as a criminal record assessment – associated with registration. A different and sometimes overlapping form of regulation is frequently referred to as “certification”. It grants an occupational title to persons meeting particular standards (e.g., the Alberta Society of Professional Biologists, where one title is “registered biologist”, although it fits under certification in this taxonomy).

A central issue for both registration and certification is whether workers may, or must, participate to perform certain tasks with principal or subsidiary responsibility. In many jurisdictions there is no restriction preventing those without registration/certification from pursuing the relevant occupation (although one may be required for public sector/public funded employment). This “light touch” regulation simply signals clients/customers/employers about worker competence/trustworthiness. If registration/certification is required, then in practice it might be closer to licensing, discussed below. Somewhat more strenuous than registration, in that it excludes those without what is deemed to be relevant training, is when graduation from a particular academic program effectively satisfies the regulatory requirements. This approach is common in European jurisdictions (Commission of the European Communities 2013, 2004) and in Australia. It is also being explored by China in relation to a select group of elite western universities, in a marked variation from the traditional Mandarin-based national examination system (Wang 2009).

Licensing is typically more intense than certification, in that it is exclusionary and only those with a license may perform the relevant task and/or use a relevant title, but it may take a variety of forms. For example, in Ontario the title *P. Eng.* can be used only by those who are registered with and licensed by *Professional Engineers Ontario* although the title is not a requirement for practicing engineering in the province. Cooney (2013) distinguishes between licensing for conformance that is more typical in mid-skill occupations such as transport drivers, and the higher intensity (in common law jurisdictions) licensure more commonly required of high skilled professions and professions in health.⁴ Importantly, licensure for compliance

⁴ For example, at present there are 26 regulated health professions in British Columbia, and 25 are self-regulating with 22 colleges. Only one is regulated by a government appointed licensing board

appears to be less likely to be associated with self-regulation and/or a regulatory college. Although the requirements for licensure vary, the building blocks in almost all cases, as pointed out by Cox and Foster (1990), are long-standing: an educational standard, experience or an apprenticeship/practicum, an examination, an ethical or moral hurdle, and citizenship/residency. Beyond these, and of particular interest in the case of some new immigrants, are (sometimes occupation-specific) language fluency minimums. However, the details of the requirements for occupations in Canada and Australia have not remained static, and the rate of change in the last decade or so has been substantial in large part because of the transformation of skilled migrant source countries (predominantly now in Asia). Entry mode has also exerted a growing impact on regulation. The rise of temporary skilled migration has involved increasing use of employer-sponsored flows to fill specific vacancies. Migrants, employers, and governments share the goal of rapid economic integration. They seek more flexible pathways into regulated occupations, in a context where many temporary migrants are unwilling to initially invest in full registration (Hawthorne 2013b).

Enforcement is a complication common across all of these regulatory forms and increases the administrative burden substantially. Even for relatively simple frameworks such as registration, the process for dealing with a complaint and (potentially) removing a worker from the list or taking other action can be onerous. Proactive efforts to enforce quality controls are, naturally, more expensive yet, and are more typically observed in the more intense self-regulatory college framework.

Alternatives to occupational regulation exist. In particular, instead of or in addition to regulating workers directly, it is also common to regulate employers and/or workplaces. This makes employers, in whole or in part, directly responsible for product and service outputs and outcomes. Beyond that, mandatory disclosure, and mandatory or voluntary quality assessments by third parties that obviate the need for occupational regulation are also commonly observed.

Generally, and increasingly over time, workers in self-regulated occupations are served by multiple organizations -- not all of which are part of the regulatory process. These might include a regulatory college (e.g., British Columbia's College of Social Workers, the Alberta Land Surveyors' Association, or the Ontario College of Trades); a union, quasi-union, or advocacy oriented association that in Canada is commonly but not always provincial (e.g., the Newfoundland and Labrador Medical Association, or the International Brotherhood of Electrical Workers); a national organization of provincial organizations (e.g., the Canadian Nurses Association); other specialty associations (e.g., the Ontario College of Family Physicians, which is not a regulatory college); or qualification and/or accreditation evaluation organizations (e.g., the Medical Council of Canada). Oftentimes, organizations serve multiple roles. For example, the Canadian Society for Medical Laboratory Science is both a national certifying body and a national umbrella professional society. Similarly, prior to 1996, one organization served both a union and college function for teachers in Ontario. While many theories of governance suggest that incentives are best aligned by separating these two (or various) functions into different institutions, very little empirical research has investigated the issue to verify the credibility of this hypothesis. Moreover, theoretical research in economics by, for example, Prendergast (2015), and Gavazza and Lizzeri (2007), suggest that perverse implications may sometimes follow from seemingly innocuous policies.

(<http://www2.gov.bc.ca/gov/topic.page?id=6465BD0430B9409699F50FF7DAC82D02#top> accessed June 10, 2015).

Many self-regulating professions also operate in the public sector, making the relevant labour markets even more complex since they are not competitive in the economic sense. Frequently it is a bilateral monopoly with both a provincial sole (monopoly) funder and a provincial sole (monopsony) seller of services in addition to, and not always independent of, the regulatory framework. Oftentimes there are intermediary organizations -- such as school boards, hospitals and union locals -- that make the context even more complicated but do not change the fundamental nature of there being a single funder and a single seller of labour services. Ideas developed for competitive labour markets simply do not apply in these situations, and the outcomes that follow from the interactions of these various organizations have not been extensively studied.

The Goals of Regulation

Turning next to the goals of occupational regulation, ideally governments in generating relevant legislation and associated regulations balance the benefits of regulation with the potentially deleterious effects of restricting access and providing a source of monopoly power.⁵ Whether governments achieve this balance or not is controversial, with many arguing they do not. A key issue in evaluating this concern, as noted by Bryson and Kleiner (2010) with reference to “prospect theory”, is that the utility of equal dollar benefits and costs need not be equal and opposite. There appears to be a psychological tendency towards loss aversion. This can lead to occupational regulation appearing to be overly cautious/conservative by some metrics as it seeks to avoid large losses. To better understand some of the elements on both sides of the balance, we first summarize selected rationales for this form of public intervention in labour markets, and subsequently discuss some downsides. Many such lists, old and new, exist; see, for example, Kleiner (2006) for an economics perspective and Manitoba Law Reform Commission (1994) for an administrative law perspective.

Economic historians point to the ancient, guild-based, origins of occupational regulation and its role in the shift from personal to impersonal transactions, and from self-enforcement to third-party enforcement of property rights involving issues of competence and honesty. These developments, they argue, are fundamental to modern economies and promote economic growth (North 1984, 1990). Additionally, Shleifer (2012) argues that regulators are frequently more efficient than the court system given the latter’s failure to solve contract and tort disputes cheaply and predictably. Economists, in the abstract, point to asymmetric information and transactions costs as the underlying problems being solved by such regulation. In this framework the increasing importance of technology and specialized knowledge supports an increase in occupational regulation, and in particular self-regulation.

⁵ While there are organizations providing regulation on a voluntary basis to members and/or clients, the right to regulate an occupation more commonly comes from government. However, once legislative authority is granted to a licensing or governing body these organizations can retain substantial autonomy over the regulation of that occupation, including powers under administrative law. In such circumstances, despite its legislative authority, in practice government can urge and fund but not easily compel reform. There are also serious problems of, and sometimes successes involving, coordination and cooperation among governments. A notable positive example of this is the establishment of the Australian Health Practitioner Regulation Agency (AHPRA) in 2010, with the support of all federal and state/ territory governments, as well as state-specific regulatory bodies. AHPRA includes 14 National Boards which administer mutually recognized national registration standards in the 14 key medical and allied health fields, with no barriers to intra-state mobility (AHPRA, 2015).

Protecting the public also involves addressing externalities, and regulation can support standards that benefit not only workers and clients, but the public more broadly. Extreme examples of relevant issues include infectious diseases, collapsing buildings, automobile accidents and fires. Less extreme, but along the same lines, occupational regulation can promote quality. This can increase demand by minimizing consumer uncertainty arising from asymmetric information between patients/clients/customers and practitioners who possess expert knowledge (Shapiro 1986). Moreover, in environments where technology and practice norms are rapidly changing, regulators can ensure that practitioners stay up to date (or at least do not fall too far behind) by mandating continuing education and the like.

Turning to the costs or side effects of regulation, researchers have found that licensure restricts labour supply and consequently increases both the price of relevant goods and services, and the earnings of regulated practitioners who benefit from the monopoly rents which in many the Canadian and US contexts are observed to be similar in magnitude to those from unionization (e.g., Kleiner 2013, Kleiner and Krueger 2010, Kugler and Sauer 2005, and Gomez et al. 2015). Scopes of practice can also be arbitrarily limited by occupational regulation, as particular tasks are assigned to an occupation but restricted from another. This has long been recognized as potentially leading to what are effectively turf wars between regulatory bodies and/or their memberships (e.g., Finocchio et al. 1995; Brockman 1996) as various groups seek to profit from economic rents in one way or another. Recent ‘turf wars’ have pitted ophthalmologists against optometrists and dentists against ‘encroachment’ by dental hygienists. In Australia, practitioners such as medical radiologists now actively seek inclusion within the Australian Health Practitioner Regulation Agency, following the recent addition of Chinese traditional medicine and indigenous health practitioners. This is designed to define and defend their scope of practice, while enhancing their professional stature. Limits on scopes of practice can be particularly important in rural and remote locations, which motivated the Australian Productivity Commission (2005) to propose enhanced roles for select allied health practitioners, relative to doctors, in part as a means of ensuring service delivery in underserved sites.

Perhaps most crucially in the long run, governments in Canada (Competition Bureau 2007), Europe (European Commission 2013, 2004), and the United States (Cox and Foster 1990) have concerns that go beyond the abovementioned potential fixed reduction in standards of living, for example near the time when an occupation is newly regulated. A larger apprehension is that unbalanced regulation may also lead to slower economic growth by constraining innovation. That is, concerns are raised not only about the impact of a static (one time) switch to a lower welfare equilibrium, but also about dynamic issues related to constraints that may reduce the rate of productivity growth. Cumulatively, over a number of years these latter impacts can be extremely important.

Substantial evidence has accumulated regarding the downside of occupational regulation, interest in which has grown in recent years. However, the issues are long-standing and strong remedies have been put forward in the past. Notable in the Canadian context are the recommendations of the Manitoba Law Reform Commission (1994), which among other proposals argued for a shift from regulating occupations to regulating tasks. Despite this Commission’s concerns that occupational regulation had exceeded the tipping point with the costs being excessive, the prevalence of occupational regulation has increased and the institutional structure has not altered appreciably. Some economic historians, again taking a much longer perspective, recognize the value of impersonal exchange mentioned above, but are concerned that socially negative side effects involving the exploitation of monopoly power may

also occur. Ogilvie (2014) concludes that the “historical findings on guilds thus provide strong support for the view that institutions arise and survive for centuries not because they are efficient but because they serve the distributional interests of powerful groups” (p. 188). This issue has also been powerfully articulated regarding the Australian situation (Iredale 1987, 1997).

A number of recent studies use differences in regulatory intensity across, and sometimes also over time within, states in the United States to estimate the impact of occupational regulation on various outputs and outcomes. For example, Meehan (2015) studies the impact of differential occupational licensing requirements across US states for those working in the private security market. He concludes that increasing regulatory stringency reduces the number of firms operating, increases firm size, and increases the average wage in the industry. Wing and Marier (2014) focus on differences and overlaps in the scopes of practice of dentists and dental hygienists. They observe that relative to the most modest restrictions, the most restrictive occupational limits on hygienists increase prices by approximately 12%, and reduce the number of annual visits by 3 to 4%. Timmons and Thornton (2008) address the effects of licensing, which is required in some but not all states, on the wages of radiologic technologists. Depending upon the methodology employed, they observe wage increases of between 3.3 and 6.9% as a result of licensure. Pagliero (2013) takes a slightly different perspective examining the relationship between the number of people writing (i.e., the potential supply of new entrants) and the difficulty in passing the US Multistate Bar Exam. He finds evidence suggesting that larger cohorts of potential new entrants are associated with more difficult exams with lower pass rates. In Australia an explicit quota was imposed in the 1990s to constrain the number of international medical graduates passing the Australian Medical Council pre-registration examinations, and hence their eligibility to practice – subsequently overturned by appeal to the Human Rights and Equal Opportunity Commission (Hawthorne 1996).

Stange (2014) studies interactions among the three main providers of primary healthcare across US states: physician assistants, nurse practitioners, and general practice physicians. He finds that the supply of alternatives to general practitioners has minimal impact on the healthcare market overall, but that utilization increases in states that permit physician assistants and nurse practitioners greater autonomy. He argues that regulatory rules regarding scopes of practice (the division of labour) can sometimes be more important than the quantity of workers. Kleiner et al. (2014) also explore the extent to which the margins of occupational licensing have been relaxed in the US in order to expand scope of practice for nurse practitioners. They find that cost savings from this have been constrained by physicians’ exclusive control of prescribing rights.

Immigration and Foreign Qualification Recognition

Foreign Qualification Recognition is a longstanding research question related to the economic integration of new immigrants, and although sometimes discussed with respect to regulated professions most research is more general. Given the extant articles surveying the issues (e.g., Reitz et al. 2014) we will not go into detail here. That immigrants receive a lower rate of return with respect to labour market earnings to foreign academic/educational credentials is well known, and the discount has not changed appreciably in recent decades as source countries have diversified (Picot and Sweetman 2005). However key issues include understanding the relative “quality” of foreign credentials, although it is perhaps best not to think of quality in some absolute sense but rather to consider the nature of the match between the source and receiving country credentials and the demands of the latter labour market. Part of that

match involves skills, especially language skills, that mediate the usefulness of educational skills in the receiving country. Ferrer et al. (2006) and Bonikowska et al. (2008) observe that immigrants in Canada have lower scores on international standardized tests of English and/or French literacy – both in absolute terms and within educational categories. Importantly, once these differences in literacy are taken into account the two groups experience the same average rate of return to education. Moreover, on average they also receive the same rate of return to literacy. While there are discussions about whether such tests are culturally biased, and about exactly what they measure, it is clear that they are reasonably good predictors of labour market outcomes in OECD countries.

Another important aspect of foreign qualifications is labour market experience. The Canadian labour market's valuation of pre-migration labour market experience has declined appreciably over the last few decades and it has a roughly zero, or perhaps even negative, rate of return with respect to earnings at present (e.g., Schaafsma and Sweetman 2001; Green and Worswick 2010). Beyond looking at skills individually, interactions between skills can have empirically measurable implications. For example, Warman et al. (2015) present evidence suggesting that the rate of return to education, consistent with the above, is a function of literacy skills (English/French language skills are prerequisite for foreign education to have a positive rate of return in the Canadian labour market), but in contrast the rate of return to pre-migration labour market experience is not.

Of course, there is simultaneously long-standing evidence of ethnic/racial discrimination such as that documented by, for example, Pendakur and Pendakur (1998), and Oreopoulos (2011) for Canada, and Iredale (1987) and Hawthorne (1997) in relation to Australia. Further, as observed by Aydemir and Skuterud (2008), the ethnic divide seems to occur more across than within, firms. Ethnic wage differentials appear to be more a function of hiring decisions (access to “good jobs”) than wage-policies within firms. This interpretation is largely consistent with the findings in Owusu and Sweetman (2015) who, looking at self-regulated health professions, observe large gaps in access to employment for the foreign trained holding an occupation-relevant credential but few differences in earnings conditional on access.

Turning to regulated occupations, using the 2006 Canadian Census both Zietsma (2010), and Girard and Smith (2013) observe that immigrants who report qualifications normally associated with a regulated occupation have a lower probability of working in their trained occupation. Zietsma finds a 53% match rate for immigrants compared to 62% for the Canadian born. Both, however, find heterogeneity on various dimensions. In particular, the match rate is lower on entry and increases with time in Canada and it also varies according to country of education, with immigrants educated in Asia, Latin America, and the Caribbean being less likely to obtain a match. Jantzen (2015) extends and updates this analysis using an innovative new data source – a linkage between the Citizenship and Immigration Canada's administrative data files on immigrant entry and the 2011 National Household Survey. She focuses on intended occupation declared at the time of immigration of principal applicants in the economic class who arrived in Canada between 1980 and 2011. Although this study has no non-immigrant comparison group, it does make comparisons over time and finds that economic principal applicants who landed between 2006 and 2011 have higher occupational match rates, but lower skill match rates, compared to those who arrived between 1991 and 2000. However, it is not clear if occupational matching is getting easier (at least in some regulated occupations) and/or if individuals move out of regulated occupations and into management and other superior

opportunities as they spend time in Canada. This paper introduces a remarkable dataset from which we can expect much useful policy relevant research in the future.

Comparable trends exist in Australia, despite skilled worker category applicants securing superior early employment outcomes compared to Canada following the introduction of evidence-based policy reform since 1999 (Hawthorne 2008). By 2011, 66% of migrant nurses (selected across all immigration categories) had secured full-time employment in their field in Australia within 5 years of arrival, compared to 57% of physicians, 40% of dentists, 32% of pharmacists, 32% of information technology professionals, 29% of engineers and 22% of accountants. Employment matches vary by immigrant source country, with recent migrants from OECD and Commonwealth countries markedly advantaged in both countries. Broad international comparisons include the work in Schuster et al. (2013), and Papademetriou and Sumption (2013).

Owusu and Sweetman (2015) address the issue of working in one's trained occupations in depth by focusing on eight regulated health occupations and distinguishing between place of training and place of birth. They document substantially lower pass rates on Canadian licensure exams for those educated outside of Canada. They also observe substantial heterogeneity across occupations between immigrants and the Canadian born in both match rates and the probability of having training associated with particular regulated occupations. Place of training, not place of birth, appears to be the driver of gaps in the match rate between regulated occupations and relevant training.

Beyond licensure exams, the likelihood of foreign-trained graduates entering into regulated practice depends upon other aspects of the accreditation process, including Canadian experience, opportunities for bridging programs that remediate gaps in skills/knowledge, and language skills. However, there has been controversy regarding the appropriateness, format, timing, costs and goals of the licensing process as undertaken by the various regulatory colleges, as discussed by Augustine (2015a). Covell and Bourgeault (2015) explore these issues in interviews with 38 internationally educated nurses, working in six provinces, who made it successfully through the Canadian regulatory process. In particular, they identify financial capital, and what they term cultural capital (especially general and occupation-specific language skills), as being key determinants of success in completing the licensure process.

Gomez et al. (2015) provide a comprehensive analysis using longitudinal data from 2005 to 2010 that explores the earnings differences of workers in occupations that are classified as regulated compared to workers in unregulated ones. Further, they look at earnings changes as individuals switch between regulated and unregulated occupations. Both immigrants and non-immigrants obtain appreciable earnings benefits from being employed in regulated occupations, but that for immigrants is larger. Like other researchers, they find that immigrants are less likely to be employed in such occupations. Apparently, the relative market value of immigrant characteristics outside of regulated occupations is less than that for nonimmigrants.

One set of interesting observations follows from the government's use of immigration to fill shortages, especially local or regional shortages. First, as seen in Owusu and Sweetman (2015), immigrants are much more likely to hold credentials in particular regulated occupations, such as medicine, pharmacy and dentistry, than are the Canadian born. However, research by Curtis and Dube (2015) focusing on physicians suggests that the strategy of using immigrants to fill rural and remote shortages tends to have only short run effects. They find that immigrant international medical graduates are far less likely to report that they plan on residing in the location where they are trained than are Canadian graduates and Canadian international medical

graduates. This is consistent with research undertaken by McDonald and Worswick (2012) who follow cohorts of international medical graduates, and other physicians, in subsequent censuses and observe that immigrant physicians are unlikely to remain in the underserved rural regions in which they are initially employed. Moreover, the destination of the substantial outflows from rural regions tends to be those major urban centers most likely to have surpluses of physicians. Although focusing exclusively on physicians, this line of research raises questions about immigration as a tool to address persistent regional skill shortages in regulated occupations.

Continuing to focus on physicians, McDonald et al. (2015) push the analysis further and look at the effect of employers having a significant role in immigrant selection on the probability of immigrants with medical credentials being employed as physicians. To gain further insight, they compare and contrast Canada and the United States. They observe that when employer nomination is a more important element of the immigrant selection system, in Canada for part of the period they study and in the United States throughout it, individuals with medical credentials are much more likely to be working as physicians than when the Canadian immigration points system plays a greater role and employers a lesser one. Potentially, employers are aware of the requirements for licensure and select individuals accordingly. Additionally and/or alternatively, employers may play a role in facilitating immigrants navigating the licensure process. Within Australia a similar phenomenon is possible since the temporary 457 visa foreign worker scheme requires migrants to commit to working up to four years in undersupplied sectors or sites, as a condition of sponsored entry. In terms of physicians and nurses in the past decade this has become a key strategy to provide for underserved areas, as discussed by Hawthorne (2015).

The Intersection of Occupational Regulation and Foreign Qualification Recognition

An important element of the discussion surrounding regulation, and particularly self-regulation, is the exploitation of monopoly power by insiders, which is sometimes termed “professional protectionism” -- an issue explored in depth (Freidson 1986, 1994; Kleiner 2006); and is not unlike the basis for the union wage premium. In contrast to the United States where most of the discussion has been about the reduced access and increased prices faced by consumers, in Canada most policy discussion and action has involved occupational access by new immigrants. The potential for ethnic/racial discrimination, given the composition of the immigrant workforce, is a closely allied issue for the latter.

Some Canadian provincial governments have acted to systematically investigate and potentially ameliorate the policies and processes of regulatory colleges and their equivalents. In an effort to address unjustified ethnic/immigrant discrimination in regulatory processes, in 2006 Ontario, in 2008 Nova Scotia, and in 2009 Manitoba passed legislation to establish offices of what are sometimes known as fairness commissioners. Quebec has had a longstanding commissioner overseeing regulated professions who was given new powers in this area in 2009. Originally, the Ontario legislation only covered particular professions, about two-thirds in health, but the legislation was amended (and renamed) to include “compulsory” trades as of 2013. Additional professions also came under the Commissioner’s purview as they became regulated. In general, these Offices seek to ensure transparency, openness and natural justice in licensure processes. Alberta took a slightly different but broadly similar approach when it passed the Health Professions Statutes Amendment Act in 2007. Other provinces pursued similar and sometimes broader FQR goals by less formal means.

Augustine (2015a), who was until recently the Fairness Commissioner for Ontario, discusses the motivation and implementation of such legislation and policy development, as well as responses on the part of various regulatory bodies. As monopoly gatekeepers, regulators have not always necessarily felt pressure to have transparent, clear and well communicated processes. Further, pathways to licensure have sometimes been arbitrarily focused on domestic prerequisites without taking into account alternative approaches to evaluating competency. One interpretation of the observed outcomes is that the institution of the Fairness Commissioner has served, in effect, as a surrogate for competition and caused regulatory agencies to become more efficient and effective. Of course, there is also the need to maintain the public protections that are motivational to occupational regulation -- this is an important balance to get right.⁶

If the policy goal is the employment of immigrants in the regulated professions in which they have been trained, then the regulatory process is only one step towards that goal. Many self-regulatory bodies, especially in healthcare, govern occupations where there effectively is one payer or one major payer – provincial governments, although there may be intermediaries such as hospitals or school boards for these payments. This makes the interplay of supply, demand, licensure, and employment quite different and more complicated than in competitive labour and product markets. Also, many regulated occupations are perceived to be “good” jobs with competitive and frequently limited domestic educational opportunities. For example, in a discussion of the changing labour market for optometrists in response to international inflows (including Canadians studying abroad) Bellan (2015) states: “If, in fact, new graduates start to find it impossible to find suitable work, then serious consideration should be given to reducing the number of training positions to a level that will better match job opportunities” (p. 91). This broadens the discussion of access considerably since it involves adjustments in domestic educational opportunities, and brings into consideration the dynamics of competitive labour markets in contrast to bilateral monopoly nature of many labour markets for regulated occupations.

In a follow-up paper Augustine (2015b) explores changes in the employment of immigrants in licensed occupations over a five-year period bracketing the introduction of the Ontario Fairness Commissioner’s office. Together with the above-mentioned paper, this is a useful approach to public policy involving first a clear and well developed articulation of the policy problem and the strategy and tactics associated with a solution, and, in this second paper, an empirical evaluation of that policy. Augustine (2015b) finds some statistically significant but empirically small impacts of the Fairness Commissioner’s activity. Of course, the evaluation only captures short run effects given the limited time that has elapsed since the Commissioner’s office was instituted. Also, the time period under study includes the recession of 2008, which is particularly important since immigrants are thought to be more sensitive to business cycles than the Canadian born. Ongoing tracking of this important policy issue is clearly worthwhile.

From an administrative law perspective, comparing Australia and New Zealand, Elkin (2015) addresses one of the key questions in this process head-on. With respect to expanded approaches to evaluating the qualifications of foreign trained physicians, she contrasts the trade-offs faced by regulators in balancing their public protection mandate and their mandate, in

⁶ An important aspect of this debate has occurred through judicial and administrative law routes, with a particularly important example being the decision of the Ontario Human Rights Commission regarding the use of Canadian experience as one of the criteria for licensure by self-regulating bodies (<http://www.ohrc.on.ca/en/policy-removing-“canadian-experience”-barrier> ; accessed July 8, 2015).

Australia, to account for wider public interests. The central aspect of her discussion is the value associated with immigrant physicians practicing in underserved regions where patients may face a quality-quantity trade-off with respect to physician licensure. In times of shortages, she sees appreciable challenges in balancing patient access and adequate quality.

Hawthorne (2015) explores ways in which the current transformation of skilled migration is forcing foreign qualification recognition reform in Australia. Two-thirds of skilled migrants now enter as temporary foreign workers with pre-arranged work. The question increasingly asked is whether regulatory bodies established in the 19th century remain fit for purpose in facilitating 21st century migration modes, or whether they impede 'efficiency'. In response to growing community pressure select regulators are developing conditional and provisional licensing options, experimenting with innovative practice, and driving (rather than resisting) FQR change. Hawthorne examines these trends in relation to the health sector.

Conclusion and Questions for Future Research

An efficient occupational regulatory system weighs the benefits of regulation in terms of protecting the public against the monopoly costs arising from the creation of barriers to entry into those occupations. In Australia, Canada, the United Kingdom, the United States and other countries occupational regulation has become a major and growing labour market institution: there has been a marked increase over time in both the number of occupations that have some element of government or non-government regulation and in share of the workforce employed in those occupations. At the same time, the major immigrant recipient countries have increasingly shifted their sizeable immigration intakes in favor of skilled immigrants qualified in developing countries. The intersection of these trends has resulted in significant numbers of immigrants, especially recent immigrants, employed in occupations outside of their main areas of qualification. As a result, there has been a growing perception that regulatory barriers to practicing in what are often highly skilled and well paid occupations - as manifested in the cost of foreign qualification recognition (FQR) and occupational (re-)entry following migration - are inefficiently hindering the labour market integration of recent immigrants. This in turn is argued to be costly to both the skilled immigrants themselves in terms of lower earnings and job dissatisfaction, and to the host country in terms of lost productivity.

Reflecting the increasing importance of occupational regulation and FQR, there is a large professional literature on the subject produced by many related organizations and advisory bodies. Nevertheless, it is surprising to note that unlike the United States, there is an almost complete lack of quantitative academic research in this area in Canada and Australia. This is even more noteworthy given that the existence of marked differences in the regulatory structures – particularly in terms of FQR - in particular occupations over time, across countries and even across regions within a country present myriad opportunities for researchers to compare and contrast labour market outcomes arising from such differences. The studies in this special issue of *Canadian Public Policy* address some of these issues, however the topic remains fertile ground for research that can have a clear policy impact as both immigration and occupational regulatory policies evolve.

References

- Adams, T. L. 2010. "Profession: A useful concept for sociological analysis?" *Canadian Review of Sociology* 47(1):49–70.
- Augustine, J. 2015a. "Immigrant professionals and alternative routes to licensing: Policy implications for regulators and government." *Canadian Public Policy/Analyse de Politiques* (forthcoming).
- . 2015b. "Employment match rates in the regulated professions: Trends and policy implications." *Canadian Public Policy/Analyse de Politiques* (forthcoming).
- Australian Health Practitioner Regulation Agency. 2015. "AHPRA - Regulating Australia's health practitioners in partnership with the National Boards". AHPRA. Melbourne.
<https://www.ahpra.gov.au/>. Accessed 15 July.
- Australian Medical Council. 2011. *Submission to the House of Representatives Standing Committee on Health and Ageing on the Inquiry into Registration Processes and Support for Overseas Trained Doctors*. Australian Medical Council. Canberra.
- Aydemir, A., and M. Skuterud. 2005. "Explaining the deteriorating entry earnings of Canada's immigrant cohorts, 1966-2000." *Canadian Journal of Economics* 38(2):641–671.
- . 2008. "The immigrant wage differential within and across establishments." *Industrial and Labor Relations Review* 61(3):334–352.
- Bartle, I., and P. Vass. 2005. *Self-regulation and the regulatory state: A survey of policy and practice*. Research Report No. 17. Bath: Centre for the Study of Regulated Industries.
- Bayne, L. 2012. *Underlying philosophies and trends affecting professional regulation*. February. Victoria: College of Registered Nurses on British Columbia.
- Bellan, L. 2015. "The geographic distribution of optometrists in Ontario." *Canadian Journal of Ophthalmology* 50(2):91–92.
- Bonikowska, A., D. A. Green, and W. C. Riddell. 2008. *Literacy and the labour market: Cognitive skills and immigrant earnings*. *Culture, Tourism, and the Centre for Education Statistics, Statistics Canada*. Catalogue 89-552-M No. 020. Ottawa, ON.
- Bourgeault, I. L. 2007. "Brain drain, brain gain and brain waste: Programs aimed at integrating and retaining the best and the brightest in health care." *Canadian Issues/Thèmes Canadiens*(Spring):96–99.
- Bourgeault, I. L., and M. Grignon. 2013. "A comparison of the regulation of health professional boundaries across OECD countries." *European Journal of Comparative Economics* 10(2):199–223.

- Boyd, M. 2013. "Accreditation and the labor market integration of internationally trained engineers and physicians in Canada." In *Wanted and welcome? Policies for highly skilled immigrants in comparative perspective*, ed. T. Triadafilopoulos, 1–309.
- Brockman, J. 1996. "Dismantling or fortifying professional monopolies? On regulating professions and occupations." *Manitoba Law Journal* 24:301–310.
- Bryson, A., and M. M. Kleiner. 2010. "The regulation of occupations." *British Journal of Industrial Relations* 48(4):670–675.
- Coe, P. J., and J. C. H. Emery. 2012. "Accreditation requirements and the speed of labour market adjustment in Canadian building trades." *Canadian Public Policy/Analyse de Politiques* 38(1):91–111.
- Competition Bureau. 2007. *Self-regulated professions: Balancing competition and regulation*. Gatineau, QC: Government of Canada.
- Cooney, R. 2013. "Occupational licensing in intermediate-skill occupations: The case of drivers in the land transport industry." *Journal of Industrial Relations* 55(5):743–759.
- Covell, C. L., E. Neiterman, and I. L. Bourgeault. 2015. "Forms of capital as facilitators of internationally educated nurses' integration into the registered nursing workforce in Canada." *Canadian Public Policy/Analyse de Politiques* (forthcoming).
- Cox, C., and S. Foster. 1990. *Economic issues: The costs and benefits of occupational regulation*. Washington: Bureau of Economics, Federal Trade Commission.
- Curtis, L. J., and U. Dube. 2015. "Demographics, debt, and practice intentions of medical residents training in Canada." *Canadian Public Policy/Analyse de Politiques* (forthcoming).
- Elkin, K. 2015. "Registration decision-making and public protection: International medical graduates in Australia and New Zealand." *Canadian Public Policy/Analyse de Politiques*, (forthcoming).
- European Commission. 2004. *Report on competition in professional services*. Communication 83 final. Brussels: European Commission.
- . 2013. *Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee on evaluating national regulations on access to professions*. Commission Staff Working Document 402 final. Brussels: European Commission.
- Ferrer, A., D. A. Green, and W. C. Riddell. 2006. "The effect of literacy on immigrant earnings." *Journal of Human Resources* 61(2):380–410.
- Finocchio, L. J., C. M. Dower, T. McMahon, C. M. Gragnola, and T. on H. C. W. Regulation. 1995. *Reforming health care workforce regulation: Policy considerations for the 21st century*. San Francisco, CA: Pew Health Professions Commission.

- Freidson, E. 1986. *Professional Powers: A Study of the Institutionalisation of Formal Knowledge*. University of Chicago Press. Chicago and London.
- Freidson E. 1994. *Professionalism Reborn: Theory, Prophecy, and Policy*, Polity Press. Cambridge. United Kingdom.
- Alessandro G. and A. Lizzeri. 2007. "The Perils of Transparency in Bureaucracies" *American Economic Review* 97 (2): 300-305.
- Girard, M., and M. Smith. 2013. "Working in a regulated occupation in Canada: An immigrant-native born comparison." *Journal of International Migration and Integration* 14(2):219–244.
- Gomez, R., M. Gunderson, X. Huang, and T. Zhang. 2015. "Do immigrants gain or lose by occupational licensing?" *Canadian Public Policy/Analyse de Politiques* (forthcoming).
- Gonczi, A. Hager, P. and Oliver, L. 1990. *Establishing Competency-Based Standards in the Professions*, National Office of Overseas Skills Recognition, *Research Paper No 1*. December. Australian Government Publishing Service. Canberra.
- Green, D. A., and C. Worswick. 2010. "Entry earnings of immigrant men in Canada: The roles of labour market entry effects and returns to foreign experience." In *Canadian Immigration: Economic Evidence for a Dynamic Policy Environment*, ed. T. McDonald, E. Ruddick, A. Sweetman, and C. Worswick, 77–110. Montreal and Kingston: McGill-Queen's University Press.
- Hawthorne, L. 1997. 'The question of discrimination: skilled migrants' access to Australian employment". *International Migration*. Volume XXXV (3): 395-420.
- Hawthorne, L. 2002. "Qualifications recognition reform for skilled migrants in Australia: applying competency-based assessment to overseas-qualified nurses". *International Migration*. Volume 40 (6): 55-92.
- Hawthorne, L. 2008. *The Impact of Economic Selection Policy on Labour Market Outcomes for Degree-Qualified Migrants in Canada and Australia*. Institute for Research on Public Policy. Vol 14 No 5.
- Hawthorne, L. 2013a. "Recognition of qualifications and competences of third-country nationals – Australia", Chapter 7, in *Recognition of Qualifications and Competences of Migrants*, ed. A Schuster, M. Vincenza Desiderio and G. Urso, International Organization of Migration, Brussels, <http://www.labourmigration.eu/research/report/20-recognition-of-qualifications-and-competences-of-migrants>, pp. 201-228.
- Hawthorne, L (2013b), "Recognizing foreign qualifications – emerging global trends", Migration Policy Institute, Washington DC, <http://www.migrationpolicy.org/pubs/Credentialing-GlobalTrends.pdf>.
- Hawthorne, L. 2015. "The impact of skilled migration on foreign qualification recognition reform in Australia" *Canadian Public Policy*, (forthcoming).

- Hawthorne, L. and To, A. 2013. *English Language Skills Registration Standards – An Australian and Global Comparative Assessment*. Australian Health Practitioner Regulation Agency. Melbourne
- Hawthorne, L. and Wong, W. 2011. *Australia-Canada round table on foreign qualification recognition – backgrounder*, Public Policy Forum, Ottawa, April.
- Health Professions Council of British Columbia. 2002. *Safe choices: A new model for regulating health professions in British Columbia*. Government of British Columbia.
- Health Professions Legislation Review. 1995. *Striking a new balance: A blueprint for the regulation of Ontario's health professions*. Ontario: Health Professions Legislation Review.
- Humphris, A., M. M. Kleiner, and M. Koumenta. 2010. "How does government regulate occupations in the UK and US? Issues and policy implications." In *Labour Market Policy for the 21st Century*, ed. D. Marsden, 1–20. Oxford: Oxford University Press.
- International Engineering Alliance, 2015. "The Washington Accord".
<http://www.ieagreements.org/washington-accord/>, accessed 15 July.
- Iredale, R. 1987. *Wasted Skills: Barriers to Migrant Entry to Occupations in Australia*. Ethnic Affairs Commission of NSW. Sydney.
- Iredale, R. 1997. *Skills Transfer: International Migration and Accreditation Issues*. University of Wollongong Press. Wollongong
- Jantzen, L. 2015. "Do economic principal applicants work in their intended regulated occupation? Introducing the National Household Survey– Immigration Landing File Linkage Database." *Canadian Public Policy/Analyse de Politiques*, (forthcoming).
- Joint Standing Committee on Immigration. 2006. *Negotiating the Maze: Review of Arrangements for Overseas Skills Recognition, Upgrading and Licensing*, The Parliament of the Commonwealth of Australia. Australian Government Publishing Service. Canberra.
- Kleiner, M. M. 2006. *Licensing occupations: Ensuring quality or restricting competition*. Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research.
- . 2013. *Stages of occupational regulation: Analysis of case studies*. Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research.
- Kleiner, M. M., and A. B. Krueger. 2010. "The prevalence and effects of occupational licensing." *British Journal of Industrial Relations* 48(4):676–687.
- . 2013. "Analyzing the extent and influence of occupational licensing on the labor market." *Journal of Labor Economics* 31(2):S173–202.

- Kleiner, M. M., Marier, A., Park, K. W. and Wing, C. 2014. 'Relaxing occupational licensing requirements: analyzing wages and prices for a medical service'. NBER Working Paper No. 19906. February. National Bureau of Economic Research. <http://www.nber.org/papers/w19906>.
- Kugler, A. D., and R. M. Sauer. 2005. "Doctors without borders: The returns to an occupational license for soviet immigrant physicians in Israel." *Journal of Labor Economics* 23(3):437–465.
- Lahey, W., and R. Currie. 2005. "Regulatory and medico-legal barriers to interprofessional practice." *Journal of Interprofessional Care* Suppl 1:197–223.
- Manitoba Law Reform Commission. 1994. *Regulating professions and occupations*. Winnipeg, MB: Manitoba Law Reform Commission.
- McDonald, J. T., and C. Worswick. 2012. "The migration decisions of physicians in Canada: The roles of immigrant status and spousal characteristics." *Social Science and Medicine* 75(9):1581–1588.
- McDonald, T., C. Warman, and C. Worswick. 2015. "Immigrant selection systems and occupational outcomes of international medical graduates in Canada and the United States." *Canadian Public Policy*, (forthcoming).
- Meehan, B. 2015. "The impact of licensing requirements on industrial organization and labor: Evidence from the U.S. private security market." *International Review of Law and Economics* 42:113–121.
- Mysicka, R. 2014. *Who watches the watchmen? The role of the self-regulator*. Commentary No. 416. Toronto, ON: C.D. Howe Institute.
- North, D. C. 1984. "Government and the cost of exchange in history." *Journal of Economic History* 44(2):255–264.
- . 1990. *Institutions, institutional change and economic performance*. Cambridge, UK: Cambridge University Press.
- Ogilvie, S. 2014. "The economics of guilds." *Journal of Economic Perspectives* 28(4):169–192.
- Oreopoulos, P. 2011. "Why do skilled immigrants struggle in the labor market? A field experiment with thirteen thousand resumes." *American Economic Journal: Economic Policy* 3(4):148–171.
- Owusu, Y., and A. Sweetman. 2015. "Regulated health professions: Outcomes by place of birth and training." *Canadian Public Policy/Analyse de Politiques*, (forthcoming).
- Pagliero, M. 2013. "The impact of potential labor supply on licensing exam difficulty." *Labour Economics* 25:141–152.
- Papademetriou, D. and Sumption, M. 2013. "Attracting and selecting from the global talent pool – policy challenges". Migration Policy Institute. Washington. See MPI website for full set of foreign qualification recognition reports published 2013, <http://www.migrationpolicy.org/research>.

- Pendakur, K., and R. Pendakur. 1998. "The colour of money: Earnings differentials among ethnic groups in Canada." *Canadian Journal of Economics* 31(3):518–548.
- Picot, G., and A. Sweetman. 2005. *The deteriorating economic welfare of immigrants and possible causes: Update 2005*. Statistics Canada: Business and Labour Market Analysis Division. Statistics Canada Analytical Studies Branch Research Paper Cat. No. 11F0019MIE No. 262. Ottawa, ON.
- . 2012. *Making it in Canada: Immigration outcomes and policies*. IRPP Study No. 29. Montreal.
- Productivity Commission. 2005. *Australia's Health Workforce*. Productivity Commission research Report. Melbourne. December.
- Prendergast, Canice. 2015. "Professionalism and Contracts in Organizations." *Journal of Labor Economics* 33 (3): 591-621.
- Reitz, J. G., J. Curtis, and J. Elrick. 2014. "Immigrant skill utilization: Trends and policy issues." *Journal of International Migration and Integration* 15(1):1–26.
- Schaafsma, J., and A. Sweetman. 2001. "Immigrant earnings: Age at immigration matters." *Canadian Journal of Economics* 34(4). Research on Immigration and Integration in the Metropolis:1066–1099.
- Schuster, Anke, Maria Vincenzina Desiderio, and Giuliana Urso, eds. 2013. *Recognition of qualifications and competences of migrants*. Brussels, Belgium: International Organization for Migration.
- Schultze, R. 2008. "What does it mean to be a self-governing regulated profession?" *Journal of Property Tax Assessment and Administration* 4(3):41–54
- Shapiro, C. 1986. "Investment, moral hazard and occupational licensing." *Review of Economic Studies* 53(5):843–862.
- Shleifer, A. 2012. *The failure of the judges and the rise of the regulators*. Cambridge, MA: MIT Press.
- Stange, K. 2014. "How does provider supply and regulation influence health care markets? Evidence from nurse practitioners and physician assistants." *Journal of Health Economics* 33(1):1–27.
- Timmons, E. J., and R. J. Thornton. 2008. "The effects of licensing on the wages of radiologic technologists." *Journal of Labor Research* 29(4):333–346.
- Wang, L. 2009. "The impact of migration on education and recognition of qualifications: challenges and policy formation in the Chinese context". Presentation, UNESCO China Conference, Hangzhou University, October.
- Warman, C., A. Sweetman, and G. Goldmann. 2015. "The portability of new immigrants' human capital: Language, education and occupational skills." *Canadian Public Policy* (forthcoming).
- Wing, C., and A. Marier. 2014. "Effects of occupational regulations on the cost of dental services: Evidence from dental insurance claims." *Journal of Health Economics* 34:131–143.

Zietsma, D. 2010. *Immigrants working in regulated occupations*. Perspectives (February) Cat. No. 75001-X. Ottawa: Statistics Canada.

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