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# The coordination of skill supply and demand in the market model of skill formation: testing the assumptions for the case of Chile

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## ABSTRACT

The importance of skill formation for young people and the challenges of youth unemployment and underemployment are at the forefront of global development agendas. However, there is still an open debate about the most adequate policy frameworks to tackle these societal challenges and, particularly, about the role that the state and the market should play in the coordination of skills supply and demand. Taking Chile as a case study, the paper analyses how the market model of skill formation is re-contextualised by practitioners and other stakeholders at the local level. Through a realist evaluation approach, the paper tests to what extent the underlying theoretical assumptions of the market model hold up when confronted with the reality of the contexts in which young people, education providers and employers make decisions. The case of Chile is particularly interesting for the comparative literature because of its extreme neoliberal orientation and the centrality of the market in the allocation of resources and opportunities among different social groups. The findings show the limitations of the market for coordinating the supply and demand of skills and its negative consequences on the educational and work prospects of young people, especially the most disadvantaged.

## KEYWORDS

Skill formation; skill mismatch; vocational education; youth transitions; realist evaluation; international development

## Introduction

The importance of skill formation for young people and the challenges of youth unemployment and underemployment are at the forefront of global development agendas (ILO/OECD, 2014; OECD, 2017a; World Bank, 2013). For those experiencing the transition from education to work for the first time, the skills gained via the education and training system are supposed to be key in securing employment, but these skills are not always adequately rewarded or fully utilised by employers (Buchanan, Scott, Yu, Schutz, & Jakubauskas, 2010). Coordinating the supply and demand of skills should make youth transitions smoother and contribute to the reduction of skills mismatches in youth employment (Quintini, 2014). However, there is still an open debate about the most adequate policy frameworks to be adopted in national skills strategies and, particularly, about the role that the state and the market should play in the coordination of skills supply and demand (Ashton, Green, James, & Sung, 2005; Iversen & Stephens, 2008). Furthermore, most of the comparative literature on the different models of skill formation has focused on cases of advanced economies, paying little attention to the distinctive contextual conditions of skill formation and utilisation in other global locations (Maurer, 2011; Valiente, 2014).

The case of Chile is particularly interesting because of its extreme neoliberal orientation and its status as a paradigmatic case of study for the market model of skill formation. By researching

the re-contextualisation of the market model of skill formation by practitioners and other stakeholders at the local level, the paper is able to test to what extent the underlying theoretical assumptions of the market model hold up when confronted with the reality of the contexts in which young people, education providers and employers make decisions. Empirically testing the validity of the assumptions of the market model should not only allow us to better theorise the relationship between skill formation and youth employment, it should also inform more effective policy responses to these challenges. In addition, by focusing on the post-school transitions of students in secondary technical and vocational education and training (TVET), the paper contributes new insights to our understanding of the challenging circumstances faced by disadvantaged young people when transitioning from education to work in highly unequal countries such as Chile.

The paper starts by outlining the main theoretical assumptions that underlie the coordination of skill supply and demand under the market model. Hereafter, it characterises the market model of skill formation in Chile from an international and comparative perspective. The methodology section presents the realist evaluation approach taken in the study and the qualitative strategy of data collection and analysis that followed. The findings section discusses the four fundamental theoretical assumptions of the market model against the empirical evidence available for the case of Chile. The concluding section reflects on the implications of the findings for comparative research and international policy debates on skill formation.

### **Market coordination of skill supply and demand**

Global and national agendas in TVET and skills development have adopted the knowledge-based economy imaginary, which expects that global competition dynamics and technological advances will boost the demand for skills and the offer of highly qualified jobs (Becker, 2002; Brown & Lauder, 2006). According to this imaginary, mismatches between the skills of young people and their labour market situation can be explained by the malfunctioning of the education and training system and/or by the poor investment of individuals in their education and training (McQuaid & Lindsay, 2005). This supply side fundamentalism in policy agendas (Peck & Theodore, 2000) has translated into policy recommendations that seek to reduce the levels of unemployment and underemployment among young people through the liberalisation of labour market regulation and by making the education and training systems more responsive to the needs of the economy (Almeida et al., 2012).

The underlying idea behind these policy proposals is that the market is the most efficient mechanism for coordinating the supply and demand of skills. This belief has led to the substitution of hierarchies by contracts in the public sector and the introduction of quasi-markets in education provision (Considine, 2001, p. 28). As postulated by neoliberal economics, the subsidiary intervention of the state should limit itself to the correction of 'market failures', for example through the provision of information to individuals who seek to maximise their utility through rational, instrumentally-oriented choices in the education and labour markets (Bonai, 2003; Chang, 2003). Under these conditions, price adjustments through the cost of education and wage premiums will result in an equilibrium between the supply and demand of skills in the economy.

Human Capital Theory (HCT) is the most prominent economic theory of skill formation and provides the conceptual grounding for the market model. The theory states that the better educated a person is, the more productive they are likely to be, for which they will earn a higher income (Becker, 1964; Mincer, 1974; Schultz, 1961). This general proposition can be broken down into a series of assumptions. Following the analytical framework of skills supply and demand proposed by Francis Green (2013), we organise these assumptions into two groups, corresponding to two markets: skill formation (education market) and skill utilisation (labour market). In each market we can identify a supply and a demand side and a good/service that is distributed: learning/training in the domain of skill formation, and skilled labour in the domain of skill utilisation. Evidently, both

markets interact with each other so decisions in one market are affected by dynamics in the other and vice versa (Dalziel, 2015).

In the skill formation market, individuals demand education and training from a series of educational providers that can be either public or private. From an HCT perspective, young people will make education investment decisions based on the expected returns in the labour market (e.g. premium above the wages earned by a less skilled worker). Financial constraints, individual abilities and individual labour market expectations will explain different patterns of education investment (Dalziel, 2017). Reproduction theories in the sociology of education have questioned this assumption as they understand educational institutions as mechanisms that reproduce and reinforce inequalities between individuals and social groups (Bowles & Gintis, 1976).

Supply in the skill formation market refers broadly to all the activities provided to enable someone to learn, including teaching, training, learning resources, and access to the environment of a learning organisation (Green, 2013, p. 27). According to the economic approach of Public Choice Theory as applied to the education sector, when the funding of training providers depends on their capacity to attract students, they will adjust their educational offer to students' preferences as a way to attract demand (Chubb & Moe, 1990). At the same time, from the point of view of the demand side, students will have the capacity to express their preferences using exit and voice mechanisms (Hirschman, 1970). In a market environment, the most successful training providers will be those that better align their offer to the skill requirements of the economy, making their degrees more valuable and a better investment opportunity for young people. The responsiveness of providers in education quasi-markets has been questioned by studies that show how frequently educational providers' diversification strategies are based on symbolic, rather than substantive, attributes (Lubienski, 2006; Zancajo, Bonal, & Verger, 2014).

In the skill utilisation market, the demand for skilled labour corresponds to employers' skill demand. The concept of employers' skill demand refers to the hours of work that employers would choose to deploy young people with skills of various types and levels, given the productive environment and wages (Green, 2013, p. 28). According to HCT, investment in education is efficient because employers will hire skilled labour and will respond to a better educated workforce by investing in new technology to capitalise on their productive potential (Lauder, Brown, & Ashton, 2017). One of the first criticisms to this assumption came from Signalling Theory (Spence, 1973), which argues that, in addition to gaining skills, the education system provides credentials that signal what a person is able to do to employers. Credentials are used by employers as a proxy for the trainability and productivity of individual workers. This 'sheepskin effect' and competition among workers for the best job that matches their education creates credential inflation and, in turn, skill mismatch such as over-qualification (McGuinness, 2006).

HCT critics have also questioned this assumption by examining how social inequalities are reproduced in the labour market. Dual Labour Market Theory (Doeringer & Piore, 1985), for example, shows that labour markets are institutionally segmented, offering unequal job opportunities to those that have access to them. On the one hand, the primary sector offers high-skilled and high-paid jobs, with career progression opportunities and stability, to those with better credentials and networks. On the other hand, the secondary sector offers low-skilled and low-paid jobs, with unstable contracts and limited training possibilities, to those that did not have access to the primary sector.

Finally, the supply of skilled labour refers to the hours that people with various skills would like to work, given the wage rates and other relevant working conditions (Green, 2013, p. 28). Education not only leads to a more skilled population, it also raises willingness to participate in the labour market. Sociology of youth transitions has questioned this assumption by showing how the diversity of life plans and social inequalities (social class, gender, race, disability) among young people may affect their post-school trajectories and insertion in the labour market (Furlong & Cartmel, 2006; Heinz, 2009). Understanding the interplay between these agential and structural factors is key to explaining young peoples' decisions to seek work, continue their studies or remain inactive over the life course.

As a result of the operation of these two markets, 'skills equilibrium' will be achieved when supply and demand in both markets are in equilibrium. As with any market, matching mechanisms for skill formation and utilisation can be a mixture of price and quantity adjustment processes. Likewise, mismatches between supplies and demands are the consequence of imperfect adjustment. This economic and functionalist approach has received several criticisms from institutional political economy; the most fundamental being that the market rarely generates an equilibrium between the supply and demand of skills by itself (Anderson & Warhurst, 2012), that certain skills equilibria (e.g. low-skills equilibrium) are not necessarily desirable from a social perspective (Finegold, 1999), and that moving to a high-skills equilibrium requires a high level of institutional coordination that is extremely context-dependent (Payne, 2008). In the following sections we will try to validate to what extent these assumptions and their counter-arguments help explain the post-school transitions of secondary TVET graduates in Chile.

### The market model of skill formation

Comparative literature on skill formation has identified several dimensions of variation in the institutional design of TVET systems from different disciplinary approaches (Allmendinger, 1989; Greinert, 2010; Müller & Shavit, 1998; Pilz, 2016). As indicated by institutional political economy, these variations in skill formation are embedded in wider political economy structures and adjacent spheres (labour market, welfare state, corporate governance, industrial relations), which both affect and interact with them and are historically configured (Hall & Soskice, 2001; Streeck & Thelen, 2005). The main factor that explains these institutional variations is the different allocation of responsibilities between the state, the market and social partners in the provision and financing of TVET.

Existing typologies for advanced economies have tended to differentiate between statist (e.g. France, Sweden), corporatist (e.g. Germany, Switzerland) and market models of skill formation (e.g. UK, US). In countries like the UK and the US, the dominance of capital is reflected in the centrality of the market in wealth creation and the coordination of skill supply and demand. The state restricts its action to the funding and provision of general education, leaving in the hands of employers the provision of training for their employees. Despite the existence of highly innovative economic sectors at the higher end, the market model has been criticised by the specialised literature for its shortage of intermediate skills and its tendency to a 'low skills equilibrium' in large parts of the economy (Finegold & Soskice, 1988). In the context of globalisation and with the aim of making markets more effective, national governments in these countries have adopted neoliberal agendas resulting in the growing privatisation of education provision, the reduction of labour costs through labour market liberalisation and an increase of the supply of labour through the replacement of welfare benefits with vocational training for the unemployed.

Chile is a less studied extreme case of the market model of skill formation, which has been theorised as a 'neo-market model' due to its more recent historical configuration (Ashton, Sung, & Turbin, 2000). The neoliberal reforms undertaken during the eighties transformed the skill formation system in Chile and gave birth to one of the most marketised education systems in the world (Bellei & Vanni, 2015). On the supply side, primary and secondary education (including the provision of secondary TVET<sup>1</sup>) operate under a model of school vouchers, in which the financial sustainability of providers relies entirely on their capacity to attract demand for schooling from families. Vocational training institutes were privatised during the dictatorship and the supply of tertiary education is mainly private and funded through students' fees. Contrary to the corporatist model of vocational training institutes that characterises other Latin American countries (Espinoza, 1994), Chile developed a market oriented training system where private providers (OTEC) compete to sell their services to private firms and government-sponsored public training programmes, which are funded through the National Service of Training and Employment (SENCE) and company tax deductions (Pino & Cox, 2012; Rucci, 2010). One of the

fundamental characteristics of the supply of skills in Chile is its lack of articulation from a lifelong perspective (Didier, 2018).

On the demand side, Chile is an example of how neoliberal reforms have led to economic de-industrialisation and a major shift in employment opportunities from manufacturing to services and commodity production (Palma, 2014). Trade liberalisation and an export-oriented strategy limited the country's capacity to protect manufacturing jobs and the demand for qualified technicians. Chile has been at the forefront of market reform and integration in the global economy and is a clear case of weak business demand for skills. Commodity production never entailed an expansion of collateral high-skilled areas and in the case of copper, which accounts for some 15% of GDP, the sector employs less than two percent of the labour force (Sehnbruch, 2006). Despite the fiscal incentives, the level of employers' investment in training remains very low as well as their involvement in the provision of apprenticeships, which are very limited in number and of poor quality (Sepúlveda, Sevilla, & Farías, 2014). In Chile today, a high share of jobs are of relatively low quality (informal or temporary) and reductions in informality are partly explained by the rise of other non-standard employment arrangements, such as outsourcing or self-employment in low-skilled occupations (OECD, 2018).

Efforts to escape the 'low-skills trap' in Chile have come more from government than from business and mostly with a focus on the expansion of the supply of skills. As a result of this, Chile has experienced considerable educational expansion over the past few decades. Today 83% of the youngest generation (25–34 years old) has completed at least upper secondary education (OECD, 2017b) and participation rates in tertiary education among 18 to 24-year-olds exceeds 40% and continues to grow (Centro de Estudios Mineduc, 2017b). Rampant educational inequalities in Chile mainly affect the TVET student population. The majority of students in vocational secondary schools come from low-income strata of society; in fact, 65% of upper secondary school students from the poorest quintile are enrolled in TVET (Ortiz, 2011; Sevilla, 2012). However, the low labour market relevance and poor economic returns of secondary TVET have boosted the percentage of students from vocational schools that continue their studies into higher education, mostly in tertiary vocational institutions. In recent years, the returns from tertiary education have also started to fall, indicating that skills are in more abundant supply than demand, thus questioning the effectiveness of the 'supply-shock' approach and explaining in part the high level of resistance to these policies in the last few years (Schneider, 2013; Zancajo & Valiente, 2018).

### Methodological framework

As stated above, the main objective of this paper is to analyse how the market model of skills formation is re-contextualised by practitioners and other stakeholders at the local level. The case of Chile is selected because it represents the closest version to existing theorisations of the market model of skills formation (Ashton et al., 2000). The focus on the process of re-contextualisation is grounded in the assumption that the outcomes of national skill formation systems are influenced by the way in which actors enact the regulatory framework in their daily practices (Ball, Maguire, & Braun, 2012). This process is affected not only by the characteristics, motivations and rationalities of actors that are enacting the policy, but also by the context in which they develop their activity. Overall, the policy enactment framework allows us to overcome the limitations of traditional policy implementation approaches, which focus on policy design and resultant outcomes. In contrast, policy enactment focuses on how actors respond to the policy, which mechanisms are activated and how these mechanisms influence the effects of the policy. Hence, it is important to keep in mind that regulatory frameworks do not necessarily determine actors' responses but establish and restrict the options available, giving them boundaries within which to develop their response to the policy (Ball, 1994).

Methodologically speaking, the paper is based on the principles of realist evaluation. This methodological approach, particularly oriented to analyse the effects of policies, understands that

policies can be defined as a hypothesis of social improvement that can be unpacked and tested (Pawson & Tilley, 1997). Following this approach, this paper tries to test four main assumptions of the market model of skill formation. In the case of skill formation (education and training), the market model assumes that:

(A1) *Students will make education investment decisions based on the expected returns, which will be in the form of a premium above the wages earned by a less skilled worker.*

(A2) *Educational providers will try to attract demand by aligning their offer to the skill requirements of the economy, making their degrees more valuable and a better investment opportunity for students, assuming that instrumental rationality guides their choices.*

In the case of skill utilisation (labour market), the main assumptions of the market model can be summarised as follows:

(A3) *During the recruitment process, employers will hire skilled labour to reduce the costs of in-house training.*

(A4) *Graduates will be willing to participate in the labour market and optimise their salary and working conditions.*

Realist evaluation goes beyond the effects of a policy and tries to understand the mechanisms that explain these effects by investigating how actors react to the incentives and/or regulatory constraints resulting from the policy. The main objective of this paper is to analyse not only to what extent these assumptions are accomplished in real conditions, but also which counter-assumptions is it possible to identify, and which mechanisms are activated by actors in response to a market-oriented regulatory framework. The other significant contribution of realist evaluation is the importance it attributes to context. In this sense, Pawson and Tilley (2004) define context as all the characteristics (from the place in which the intervention is happening, to the specific features of the participants) as an essential dimension in determining how, in which circumstances and for whom an intervention leads to expected outcomes.

As a way to assess the assumptions presented above, the research has developed case studies in two local areas of Chile. Although the objective of the paper is not to compare the different dynamics of skill formation in each context, these two case studies allow us to investigate how economic and productive local contexts can influence the responses and behaviours of actors involved in the formation and utilisation of skills under the same regulatory framework. On the one hand, local area A is characterised by the dominance of one specific productive sector (extractive industry) within the local economy. On the other hand, in local area B, economic activity is more diversified and the majority of the labour force is distributed across three broad productive sectors (logistics, commerce and services). As shown in Table 1, in-depth interviews with a sample of key stakeholders (i.e. educational providers, national and local government officials, intermediaries and local companies) were carried out in each local area.

The questionnaire outline was adapted to the specificities of each actor's typology and was based on the following dimensions: 1) local development context; 2) main productive sector(s) context; 3) activity developed by the institution in the context of the skill formation system; and 4) coordination and relationships with other skill system actors. The interviews were coded based on these main dimensions and the four theoretical assumptions detailed above.

**Table 1.** Key stakeholders' interviews.

Actors' typology	Local area A	Local area B
Educational providers	6	5
National and local government	2	2
Intermediary organisation	1	2
Local companies	1	3
<b>Total</b>	<b>10</b>	<b>12</b>

## Testing the assumptions of the market model

The empirical findings of the study are presented in relation to the four main assumptions of the market model gathered from the literature review and summarised in the methodology. Following the framework provided by Green (2013), we group these assumptions in two domains: skill formation and skill utilisation.

### *Skill formation*

Skill formation markets are expected to work under the logics of general market models. Thus, participants' actions are oriented and based on instrumental rationality that maximises both their outcomes and those of the market. On the demand side, it is assumed that students will make education investment decisions based on the expected returns, which will be in the form of a premium above the wages earned by a less skilled worker. There are indeed further assumptions to uncover when unpacking this broad assumption. For instance, it is assumed that this rationality is built upon general availability of information and that opportunities to access different educational tracks are equally distributed among the population, and thus that their choices depend only on individual preferences and decisions and are not affected by socioeconomic position and other possible barriers. Following the same reasoning, it can also be assumed that the demand for education will be coherent in terms of specialisation through the different educational stages since its objective is to accumulate expert knowledge and skills in a specific professional area.

The actors interviewed made several observations regarding students' rationality and institutional settings that contradict the general assumption and its derivatives. Firstly, from a rational-instrumental choice perspective, one would expect students to choose secondary and tertiary education specialisations that are well aligned, resulting in smoother education transitions. However, as was already highlighted in the academic literature for the case of Chile (Larrañaga, Cabezas, & Dussailant, 2014; Sepúlveda, 2016), many of the stakeholders interviewed indicated that the educational trajectories of secondary TVET students are often discontinuous and there is no coherence between their vocational specialisations in secondary education and their subsequent educational choices. The following quote from one TVET school head teacher summarises how students' educational trajectories are not necessarily coherent in terms of specialisation and how the policy design of this educational track is not able to deal with such a phenomenon:

What is contradictory is that there are many efforts invested, resources, in TVET, and then the student goes elsewhere to do higher education. This is nonsense. (...) A student who studied administration here, later goes to pedagogy, which is not bad, but the continuous, for the productive sector, for development, thinking in macro politics ... we need to look into it from above, not only from the local. I think that a policy around education, and particularly on TVET needs to take also this into account. (Educational provider manager, Local area B)

Secondly, this lack of coherence is partially explained by a lack of articulation between the offer of secondary and tertiary institutions. Students that follow the vocational route from secondary to tertiary education suffer from curriculum overlap, resulting in course duplication for some students. The stakeholders interviewed explained that this articulation depends on bilateral agreements between individual institutions, which are volatile enough as to jeopardise students' choices. Students are forced to choose their education specialisation in a context where there is no guaranteed recognition of their previously acquired skills:

Tertiary vocational education institutions are not willing to guarantee the youngsters' trajectories in terms of course validation, content recognition ... (Intermediary organisation representative, Local area A)

Thirdly, beyond the coherence of the educational choices in tertiary education, students from TVET secondary schools struggle to fulfil the academic requirements to access and complete their studies in higher education. Although secondary TVET qualifications formally allow students to continue

their studies at a higher level, TVET students encounter several barriers to accessing these educational choices. The most important of these barriers is the national University Selection Test<sup>2</sup> (or PSU, its acronym in Spanish), in which TVET students score significantly lower to those coming from the academic tracks. These lower scores are due to the disadvantaged socioeconomic background of the TVET students, but also due to divergence between the TVET curriculum and the academic orientation of the PSU (Bowles & Gintis, 1976). Some TVET schools encourage their students to take the PSU and continue their studies in higher education, but they are perfectly aware of their students' disadvantaged position within the education system:

[...] the opportunities for a TVET student to study in higher education are low in relation to a student who has followed [the secondary education] academic track. From 2008 to date we have tried to encourage students to take the PSU, so far 100% are enrolled to take the PSU, but then do not take it, or they go to take one of the tests and then don't go to take the other, the scores fluctuate between 390 and 420, but they are not enough, also because the curriculum is different, they are competing with an academic track student, and our curriculum is quite thin in relation to the academic content. (Educational provider manager, Local area B).

On the supply side of skills formation, the assumption of the market model is that educational providers will try to attract demand by aligning their offer to the skill requirements of the economy, making their degrees more valuable and a better investment opportunity for students, expecting that instrumental rationality guides their choices. However, the interviews with educational providers show how the actual rationality and logic of action behind the offer of specialisations differs largely from the assumption. Educational providers are perfectly aware of this, as mentioned above, and make decisions about specialisation provision based on their knowledge of students' patterns of demand. In a context of per capita funding (school vouchers) such as Chile, attracting the maximum number of students is the main criterion used by education providers to guarantee their financial sustainability.

Instead of considering labour market demands, educational providers understand that young people base their career choices on 'fashionable trends' and perceptions of prestige and training centres' other symbolic attributes. Actors interviewed pointed out that these market dynamics have led to the proliferation of an excessive number of specialisations and options, undermining the effectiveness of the whole system. For example, the following quote from a representative of the regional organisation in charge of the labour market observatory describes the relationship between the high number of specialisations, how this negatively affects young people's capacity to make informed decisions and how this influences their choice criteria:

The other day in a forum we discussed that in Chile, at vocational tertiary education, there are around 10,000 different curricula specialisations. In Germany there are around 400 or 460. Germany must be a little bit bigger than us (sic) and they have 460 curricula specialisations. This means that the level of specificity with which it is distinguished is so detailed that the student does not necessarily have a clear idea of the differences between one and the other because comparing 10,000 different options is practically unapproachable. Then, in the end, they move by market trends, the "brand" position of the institution, and these issues have more weight than if the particular career has a more appropriate curriculum for the labour market needs that exist and aptitudes that the student has. (Intermediary representative, Local area B)

Secondary TVET institutions are completely aware of the attributes that young people value when choosing a vocational education specialisation, as reported during interviews. As a result, they try to position their offer in relation to these attributes. For school managers their capacity to align their educational offer with education market trends or even to position their 'brand' is critical to attracting new demand and therefore guaranteeing their economic viability (Lubienski, 2006).

At the same time, local companies explained that the high level of decentralisation and school autonomy in terms of curriculum implementation and development was not resulting in better alignment between the TVET offer and labour market needs. In fact, for local companies, the lack of institutionalised articulation between their demands and the training offer is a barrier to ensuring that curricular content and the skills acquired by students are aligned with their needs. The next HR manager from one of the most important companies in local area B describes how the skills of the

interns from local TVET schools are not updated with the current practices and needs of local companies:

It was supposed by the guidelines that [during the internship] he was supposed to write an accounting book and here I was never going to require him this. This task was clearly related to other administrative tasks. In contrast, here he was going to be able to cover other areas of human resources because they should be globalised and updated more than anything else. For example, processing salary payments is not going to be done manually, nobody does this manually. [...] And that was discussed directly with the tutor who comes from the school. I gave him a report. There, if they are taking it into account or not in the school, I do not know. (Local company representative, Local area B)

Regarding articulation between training centres and local companies, key stakeholders also voiced concerns about two reasons behind TVET schools' unequal capacity to achieve this aim. Firstly, their different levels of engagement with local companies, or the local productive sector in a broader sense. This affects their capacity to establish partnerships with local companies and therefore offer a high-quality training experience to their students. In this sense, coordinators of internship schemes explained that the lack of more regulated and institutionalised relationships between them and local companies impedes the establishment of bilateral agreements. Secondly, local companies interviewed perceive significant differences in the level of skills acquired by students depending on the educational institution they attend. The unequal prestige of TVET schools affects their capacity to establish partnerships with local companies and therefore offer their students internships in companies relevant to their specialisation. The next quote from an HR manager of a local company illustrates the unequal prestige among TVET schools and the consequences for students:

[...] there are schools that we have an active agreement with and, in this case, they [the students] are clearly updated. Because in fact teachers come here, they have asked for field visits to show the students how to perform in real life, in situ. So, there is not so much of a gap in that part. But in the case of specific students that come from other schools, who came on their own and submitted an application for an internship ... and sometimes we gave them the opportunity to be accepted, it's a risk that one takes, in this case. (Local company representative, Local area B)

### **Skill utilisation**

The second group of assumptions is related to the supply and demand of skilled labour in the skills utilisation market. In terms of demand, the assumption of the market model is that *during the recruitment process, employers will hire skilled labour to reduce the costs of in-house training*. According to this assumption, it is expected that employers are able to recognise candidates' skill levels, at least by using their qualifications as a proxy. In this regard, it is assumed that employers will have enough information on educational providers and educational qualifications to know what skills have been acquired by young candidates during their education, and that they can therefore use this information during the recruitment process to reduce the future cost of in-house training. However, different factors limit the availability of this information, including segmentation of the educational market (Zancajo et al., 2014), a lack of alignment between education providers and the needs of companies, and the absence of systematic relationships between companies and training institutions. The following quote from an educational provider representative illustrates how these different factors affect employers' assessments of vocational qualifications. This actor also highlights how companies' lack of involvement in school training processes helps explain this situation.

I believe that it is because the industry today has not been involved and has not understood that it should be part of the training process. It should not be present only at the end of the process. I believe that there is a big gap that we have today in terms of education because I believe that the company should be part of it ... (Educational provider, local area B)

On the one hand, the quote highlights companies' lack of confidence in TVET qualifications. This mistrust in the TVET system has important consequences for the ability of TVET graduates to

access the labour market as vocational qualifications are not valued by employers. On the other hand, the quote also highlights the lack of collaboration between educational providers and companies, which, according to many of the interviewees, is characteristic of the market model of skill formation in Chile. In this sense, the majority of educational providers interviewed agreed that greater involvement of employers in the training of young people would facilitate coordination with local companies and graduates' access to local job opportunities. However, as highlighted by one of the HR managers interviewed, there do not seem to be any systematic and institutionalised mechanisms for promoting and fostering this coordination, which ultimately depends on the will of each individual actor in the market.

Interviewer: Is there a discussion [with TVET providers] about whether what they are teaching is what the company or what the sector wants?

Interviewee: Look, in this case not all schools ask for it. It depends entirely on the school to see how well or poorly its student was evaluated, to wonder "what is it that we are doing wrong as an educational centre", in this case. (Local company, local area B)

It is unclear whether the current low involvement of companies in the initial training of young people is due to inability or disinterest (Crouch, Finegold, & Sako, 2001). In some cases, as it is shown by the following quote from an educational provider representative, companies prefer to train their new employees through short courses within their own facilities rather than collaborate with TVET schools.

[...] I have a truck, I have truck simulators, I have a whole infrastructure that allows the student to develop the necessary skills and knowledge. So, I provide this training to them in less time, at a lower cost, and they are directly recognised by the industry ... (Educational provider, local area A)

Articulation with education providers does not appear to be a priority for the local companies interviewed, despite some of them recognising that it is a potential mechanism to increase the availability of skilled workers in the local labour market. The in-house training strategy adopted by big companies may not be perceived as a feasible alternative for the smaller companies and will most likely focus on firm-specific skills with limited transferability for employees. As a result, the lack of institutional collaboration between TVET schools and local companies can particularly harm small businesses and the skill levels of young people.

On the supply side of skills utilisation, the market model assumes that *graduates will be willing to participate in the labour market and optimise their salary and working conditions*. However, three different phenomena challenge this assumption in the case of the market model in Chile.

Firstly, when planning their access to the labour market, TVET graduates are expected to have detailed information about the conditions and characteristics of the positions to which they could apply. Nevertheless, many stakeholders interviewed questioned the actual availability of information and guidance for youngsters during their transition to the labour market. Firstly, students make their educational and career decisions without enough information about labour market demands. Secondly, they possess little information and knowledge about the requirements and working conditions associated with the jobs that match their qualifications. Indeed, many of the stakeholders interviewed explained that students often do not gain this information until they carry out an internship or even try to access the labour market for the first time.

When the students do an internship and see the reality ... they were expecting to have a salary that is double the one they actually receive. [...] From this point of view, from the expectation but also from the execution, "what I'm going to do in this job", many times the expectation is far from the reality. (Educational provider, local area B)

Secondly, the low prestige and recognition of secondary vocational qualifications among employers results in them offering the best jobs to overqualified candidates with higher education degrees

(McGuinness, 2006). As such, even if TVET students had reliable information about labour market conditions and job characteristics, most of the jobs available to them would be limited to the second labour market, characterised by lower pay and poorer working conditions (Doeringer & Piore, 1985). This mismatch is thus the result of pervasive dynamics in both the supply and demand sides. On the demand side, employers seem to believe that TVET graduates are not skilled enough to perform specialised jobs. On the supply side, due to vapid expansion of the education system in recent decades, the over-supply of skilled labour allows employers to continue recruiting over-qualified young people. As a result of these reinforcing mechanisms, secondary TVET students will need to continue their studies in tertiary education if they want to avoid being trapped in the lower end of the labour market. The following quote from a representative of one of the biggest local companies in local area A shows how qualified jobs for secondary TVET graduates are very limited and in most cases they are treated as unqualified candidates that need to be trained in-house.

... the only space where we hire recent graduates from Secondary TVET schools is in the field of high tonnage truck operators, all the rest are trained by us ... (Local company, local area A)

Finally, this low valorisation of secondary TVET qualifications by the market also has consequences for TVET students' perceptions and career decisions and social inequalities more broadly. Those who cannot afford to continue into higher education tend to seek quick labour market insertion through the informal sector or unqualified jobs. The challenging living conditions of some of these students force them out of formal education and employment pathways because of the lack of real opportunities available to them. Educational providers are aware of this process, noting that many TVET students drop out even before completing their internships because they have no hope of finding a job in a relevant sector (Interview with Educational provider, local area B). The discouraging effect of the unregulated labour market on TVET students is fuelling the demand for higher education but, at the same time, is forcing large segments of young people into precarious work trajectories, widening social inequalities among this population.

## Conclusions

Analysis of the re-contextualisation of the market model of skill formation in Chile has allowed us to question the validity of Human Capital assumptions that lie behind the model and to reveal its negative effects on the post-school trajectories of secondary TVET students. On the one hand, market competition in skill formation has caused the proliferation of an inflated supply of vocational specialisations that remains unarticulated between the different education levels and does not respond to the needs of the labour market. This lack of articulation in the supply of TVET has resulted in apparently incoherent trajectories among secondary TVET graduates who have to deploy educational strategies when faced with disadvantaged circumstances as compared to those in academic routes.

On the other hand, the absence of institutional mechanisms of coordination between companies and education providers has resulted in employers' low involvement in initial training of the workforce and a disconnect between the supply and demand of occupational skills. Furthermore, a lack of labour market regulation is incentivising recruitment strategies that damage the employment opportunities of secondary TVET graduates and widen social inequalities among young people.

The failure of the market model of skill formation in Chile to fulfil its own assumptions should raise international awareness about the limitations of the market to coordinate the supply and demand of skills, and its negative consequences for the educational and work prospects of young people, especially among the most disadvantaged. Educational and labour market actors in Chile are already demanding a higher level of institutional coordination between different stakeholders in the education and training provision through a lifelong perspective. Recent political efforts to adopt a wider lifelong learning agenda have stalled due to the institutional path-dependencies of the market model and the fragility of political alliances among policy actors. We know from

comparative political economy studies that these kinds of change require a radical shift in political agendas and a greater and sustained commitment from state and non-state actors to skill formation.

## Notes

1. TVET is a very important component of the initial education offer in Chile. Schooling in Chile is compulsory until the age of 18 and the last two years of secondary education are differentiated into two tracks: one academically-oriented (científico-humanista) and one vocational (técnico-profesional). Around 40% of upper secondary education students attend vocational schools and around 31% of tertiary education students are enrolled in vocational studies (Centro de Estudios Mineduc, 2017a).
2. The University Selection Test is a standardised admission examination developed in Chile and which determines, depending on the score obtained, access to many Chilean higher education institutions, especially the most prestigious ones.

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