



**University of
Zurich** ^{UZH}

Labor Market Prospects of Newly Graduated Apprentices in Switzerland

Alexander Salvisberg and Stefan Sacchi

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Alexander Salvisberg & Stefan Sacchi
(Swiss Job Market Monitor, University of Zurich)

Abstract

This study seeks to find the reasons for the rising risk of unemployment for people who have completed basic vocational education and training in Switzerland. We focus on the long-term structural shift in the demand side of the labor market and its consequences for new entrants' chances of employment in the labor force. A detailed analysis of the development of vacancies for such 'career entrants' in the time period 2001 to 2011 shows that neither a growing occupational mismatch, nor a general shift in the educational level to the disadvantage of workers with vocational education, can be made responsible for the rising unemployment of labor market entrants. Instead, the available evidence confirms that a diminishing part of the vacancies for skilled employees remains open to entrants because of the increasing job requirements with regard to work experience and further education. Basic vocational education and training alone is less and less a guarantee for a smooth entry into the working world. We interpret this as a result of the transition in the Swiss economy in the direction of 'high performance work systems', which on the one side clearly increase the vocational and personal demands on workers, while on the other side there is less and less capacity available for training and supporting new employees.

Keywords

youth labor market; school-to-work transitions; job requirements; vocational training; Switzerland

Introduction

The transition from education to work is a critical step to be taken, often accompanied by unemployment and other employment problems. In an international perspective, youths are the group most strongly affected by unemployment. In addition, early unemployment is known to bear negative consequences for occupational careers in terms of higher unemployment risks and lower income ('scarring effects'). Compared to other European countries, the Swiss dual system of vocational education and training (VET) has enabled a comparatively smooth transition to work for the vast majority of youths completing vocational training. By contrast, people without post-compulsory education are much more likely to be struck by unemployment and precarious work arrangements. Our research nevertheless confirms that, net of the effects of business cycles, labor market entry has become more difficult in the long term even for Swiss VET graduates.

In the following, we will consider a number of possible explanations for the growing difficulties in entering the labor market. We will pay special attention to changes in the labor market across business cycles. Specifically, we will inquire how long-term structural changes in the economy affect the employment opportunities of young skilled workers who have completed basic vocational education and training. The Swiss Job Market Monitor supplies data that allows to depict in detail the changes in companies' personnel needs, which are often neglected in transition research, and thus provides fertile ground for exploring our research question.

The article is organized in the following manner: The first section presents theoretical considerations concerning the problems of gaining initial access to the labor market. These considerations revolve around the impact of structural economic change on the availability of jobs for new labor market entrants. We also briefly address the specific institutional context of vocational training in Switzerland. In the second section, we introduce the data sources used in our study. The subsequent sections are devoted to presenting the results of our empirical analyses: First, we present our findings for the development of unemployment among new entrants to the workforce (3). We then offer explanations for the observed long-term increase in the risk of unemployment (4) while we assess the relevance of our arguments empirically step by step. In the final section, we assemble the individual findings into a more complete picture and draw some conclusions.

1. Theoretical considerations

The transition from the education system to the labor market is an issue that has attracted great interest in social science research for quite some time (Dietrich and Abraham 2008: 67ff). The fact that research has even intensified in this area in recent years is due to persistently high and, in the wake of economic crisis, disproportionately increasing youth unemployment, the often unstable career pathways of young VET graduates, and the negative impact of failed career entry on employment pathways later on (Scarpetta et al. 2010, ILO 2012, Dietrich 2012). The difficulties of career

entry have inspired a number of comparative international studies accordingly (Müller and Gangl 2003, Breen 2005, Brzinsky-Fay 2007, Wolbers 2007, Blossfeld et al. 2008).¹ The focus of these studies is on international variations in the institutional arrangements relevant to a successful transition to the workforce as well as the individual and socio-structural prerequisites for such success. Compared to the institutional features of educational systems, labor market environments have drawn much less research attention (in this respect, see Gangl et al. 2003: 302f). This is especially true with regard to the possible implications of changes in the structure of labor demand and companies' skills requirements for successful career entry. Against this backdrop, our contribution moves the changing labor market conditions to the center of attention. Our theoretical considerations focus on changes in labor market supply and demand for those entering the workforce upon completing VET in Switzerland.

In principle, the situation of career entrants is marked by a particularly vulnerable labor market status (Rees 1986, Gangl 2003). The risk of unemployment is not only generally higher for youths compared to adults but also responds more strongly to economic fluctuations (Weber 2004, OECD 2008). The risk of frictional unemployment is particularly high for VET graduates, who generally cannot afford to put off the job search until a promising employment opportunity emerges. Newly entering the labor market, VET graduates are mostly at an additional disadvantage compared to the 'insiders,' i.e. proven and experienced employees, when new staff is hired (Lindbeck and Snower 2002). Moreover, young workers who have just recently been hired are not treated as fully-fledged insiders right from the start but are given the transitory status of an 'entrant'. This involves lower costs in case of dismissal compared to incumbent employees and a higher risk of being the first to lose their jobs accordingly in the event of economic crisis ('last-in-first-out'; vgl. Lindbeck and Snower 2002: 4). All these factors demonstrably add up to VET graduates being especially vulnerable to unemployment whenever the economy slows down.

In addition, labor market entrants have a disadvantage irrespective of the particular economic situation compared to experienced workers in terms of 'signals' that positively distinguish them in the eyes of potential employers (Bills 2003). Since hiring inevitably involves uncertainty concerning the capability, motivation, and suitability of job candidates, employers generally prefer candidates with the most impressive collection of such 'signals.' New labor market entrants are at a disadvantage here because they generally have little to offer aside from their basic VET certificate.

Apart from the general and cyclical factors rendering initial labor market entry difficult, we are interested in explanations for the long-term deterioration in the employment prospects of VET graduates entering the workforce in Switzerland. From a theoretical viewpoint, changes on both the supply and demand side of the labor market could play a role here. The fact that new labor market entrants immediately compete with a far greater number of skilled workers older than they are speaks

¹Switzerland has not been considered in any of these studies.

against any major influence from the supply side. In the literature, we find inconclusive evidence for whether there is a positive correlation between youth cohort size and youth unemployment or not (Gangl 2003: 271 finds no such relation, for an overview, see Korenman and Neumark 2000). Our own analysis (Sacchi and Salvisberg 2011: 25ff) shows that the size and composition of the cohorts completing VET in Switzerland have hardly changed over time so that we cannot assume either one of these factors to have any substantial influence on the labor market prospects of the individual members of a cohort.

Against this background, the following discussion will focus on the demand side of the labor market, which has received much less attention in research. We start from the basic assumption that long-term structural change of the economy, concerning sectors, occupations, and workplace characteristics, can have a considerable impact on the jobs available to new entrants to the workforce.² More specifically, we consider four possible concomitants of structural changes in the Swiss economy that offer plausible and potentially complementary explanations for growing structural unemployment among new labor market entrants with VET in Switzerland:³ (1.1) An increasing occupational mismatch due to the persistently strong industry and crafts orientation of the Swiss VET system, (1.2) the increasingly higher *levels* of formal training required by companies, (1.3) the prolongation of initial on-the-job training required for new staff in the face of cutbacks in available training personnel, and (1.4) an increasing demand for specific 'soft skills' that typically can only be acquired on the job, and (1.5) a shrinking supply of entry-level jobs suited for VET graduates in the wake of structural economic change.

1.1 Growing occupational mismatch

In Switzerland, like in many other economically advanced countries, economic and technological change is leading to a long-term change in the economy's demand for skilled labor. The Swiss manufacturing sector has lost significance while we observe divergent trends in the service sector: The demand for skilled labor in traditional service occupations (personal and distributive services) have remained largely unchanged whereas it has increased substantially in knowledge-intensive fields, such as financial services, education, health, or research and development (on the changing structure of occupations in Switzerland, see Salvisberg 2010: 77ff). Because of the high occupational specificity of most VET diplomas and the corresponding segmentation of the Swiss labor market, there is a danger of a growing occupational mismatch between the vocational qualifications acquired and those demanded in the

² Since the share of labor market entrants in precarious employment in Switzerland has remained constant even though unemployment among newcomers has increased substantially overall (Sacchi & Salvisberg 2011), we leave aside the issue of an increasing level of precarious employment arrangements at workforce entry.

³ A further possible explanation, which we will not go into in depth here and which is not supported by the findings available at present (cf. Sacchi and Salvisberg, 2011), is the increasing risk of being dismissed at the beginning of the career, as postulated by the First-in, First-out hypothesis.

labor market (Pollmann-Schult and Mayer 2010). This supposition is additionally supported by the fact that the dual VET system traditionally has much stronger roots in the industrial sector than in occupations of the service sector, which have been expanding for a long time now (Schellenbauer et al. 2010).

1.2 Increasing demand for higher education

Structural economic change proves to be a major driver of the long-term increase in the *levels* of education and training required by companies (Sacchi et al. 2005). Since 1950 already, we can observe a fairly steady shift in the kinds of qualifications required by companies in Switzerland toward tertiary certificates, mainly caused by the changing structure of the economy. The spread of computer technology at the workplace has accelerated this development notably since the 1980s (“skill-biased technological change,” see Acemoglu 2002, for Switzerland, see Arvanitis 2005). The shift of labor demand toward tertiary education can lead to a situation where new labor market entrants with VET may experience increasing difficulty in finding employment.

1.3 Increasing training requirements and declining training capacity

The development of companies' skills requirements cannot be reduced to the simple formula of changing occupational structure plus rising demand for higher formal education. Rather, we must also reckon with longer periods of initial training for new staff and higher training costs in the wake of the growing significance of nonroutine tasks (Autor et al. 2003) and more complex occupational roles (Hage and Powers 1992). On the other hand, companies increasingly restructuring their workforces to achieve greater flexibility (Kalleberg 2003), as well as the introduction of new technologies, is creating a situation where staff capacity is utilized to a higher degree, even to the point of overextending it (Green 2002). Less capacity is available accordingly for training new employees. Taken together, these developments suggest that today we can increasingly expect companies to opt in favor of skilled workers with proven experience, who, due to such experience or further specialized training, are assumed to require comparatively less initial training on the job. In this line of reasoning, new entrants to the workforce, who require more intensive and lengthy periods of initial training, are at a disadvantage. It remains to be answered in this context to what extent the lower wages of career entrants offset the higher initial training costs.⁴

1.4 Increasing demand for 'soft skills'

Along with technological change, we can observe 'skill-biased organizational change' (Piva et al. 2005). The introduction of new forms of work organization comes with a broader range of tasks and areas of responsibility for employees. To a growing de-

⁴ In this case, we could expect an increasing wage gap between new labor market entrants and experienced, skilled workers.

gree, individual productivity depends on high levels of autonomy, problem-solving capacity, and personal commitment as well as advanced communication and coordination skills (Salvisberg 2010). Many an employer will assume experienced members of the skilled workforce and not young VET graduates to be more likely to have such soft skills. Although the conditions for obtaining such skills are probably better in the dual VET system compared to a purely school-based system, there are a number of soft skills that can hardly be taught as part of a training program (van Zolingen 2002). Whatever the case may be, practical proof of such skills through work experience, documented in employment reference letters for instance, reduces uncertainty for the employer when screening job candidates – uncertainty that is particularly high when involving assets not formally certified, such as personal virtues, social competencies, and motivational strengths (Hohn and Windolf 1988).

Both arguments, higher initial training requirements and lower training capacities, on the one hand, and rising demands for soft skills, on the other, point to an intensification of work in terms of time and content resulting in increasing work strain. What emerges is an organization of work, often referred to as a 'high performance work system', that combines high company flexibility with broader decision-making powers for employees (Kashefi 2011). The prerequisite for such a system are employees who bring the necessary skills and individual make-up to perform at high levels, which in turn requires careful selection and continuous training of staff (Appelbaum 2002). In this situation, criteria such as work experience and training already amassed in the past can be expected to gain significance in personnel recruitment – criteria that young people entering the labor market, by definition, cannot meet.

1.5 Structural Economic Change

In sum, we may state that various types of changes on the demand side of the labor market can be assumed to have increased the difficulties experienced by newcomers as they enter the workforce. As briefly explained above, it seems reasonable to suspect that the demand side, i.e. companies' current personnel needs, has a much greater influence on youth unemployment, at least in the short to medium term, than the supply side (O'Higgins 1997, Bell and Blanchflower 2010).

However, the lines of reasoning in 1.3 and 1.4 both come down to specific *processes within companies* resulting in firms employing fewer VET graduates without experience and additional qualifications. A simple alternative explanation for the observed phenomena is structural economic change; after all, the supply of jobs suited for career entrants traditionally varies considerably according to sector, occupation, and company size (Sacchi and Salvisberg 2011). If economic restructuring results in employment shifting to sectors providing fewer jobs of this kind, this will lead to lower overall demand for career entrants. In this case, the main factor responsible for this development would not be changing requirements on part of employers but the fact that structural change eliminates more entry-level jobs than it creates.

1.6 The institutional framework of VET in Switzerland

Approximately 60% of all youths in Switzerland enter some kind of basic vocational training program upon completing nine years of compulsory education (Schellenbauer et al. 2010). Apart from a smaller number of school-based VET programs, dual VET programs have consistently made up the lion's share of around 83% of vocational training programs for quite some time now (ibid.: 32).⁵ They take three to four years and combine in-company training on the job by an employing company and regular theoretical instruction at a vocational school. This constitutes the essence of the dual VET system (for details, see Stalder and Nägele 2011). The highly standardized and stratified Swiss VET system provides its graduates with officially certified, nationally recognized, and often highly specialized qualifications. In conjunction with a comparatively weakly regulated labour market, the high signalling value of practice-based vocational training appears to be a major factor contributing to a fairly successful transition to gainful employment and low youth unemployment by international standards, as is true in other countries with dual VET systems as well (Breen 2005). A good 40% of dual VET graduates remain employed with the company that trained them upon completing their training. The fact that companies display a great willingness to offer their trainees permanent employment is yet another important factor in the success of the Swiss VET system. Despite the regular steps taken to adapt the VET system to a changing economic environment, the reform efforts so far have remained *within* the confines of the given institutional framework (Stalder and Nägele 2011). In the context of our study, with its focus on developments in the 21st century, we will essentially take this framework as given accordingly.

2. Data Sources

Our study centers on new entrants to the workforce, i.e. youths who first enter the labor market after completing basic VET. The focus is on their risk of unemployment and the demand side factors that influence it. We omit from consideration youths who have not completed any form of post-compulsory education or have acquired a tertiary-level degree. The following analyses rely on various data sources that we refer to only in summary fashion (for a detailed account of datasets and methods, see Sacchi and Salvisberg 2011). Depending on the issue addressed, we use data from the following sources:

The job placement and labor market statistics information system (*Informationssystem für die Arbeitsvermittlung und die Arbeitsmarktstatistik – AVAM*) provides microdata on a monthly basis on the unemployed who are registered with the regional job placement centers (exhaustive sample). Our analyses of unemployment among VET graduates are based on these official statistics.

⁵ A separate analysis of dual and school-based VET would be an interesting endeavor in this context but is not possible based on the data currently available.

The *Swiss Federal Statistical Office's Statistics of Educational Certificates* collects data on the number and kind of upper secondary certificates acquired. This source provides annual data on the size and composition of cohorts completing basic VET.

The *Swiss Labor Market Survey* (SAKE) regularly surveys a sample of Swiss residents on education and income issues in the second quarter of each year. It includes new entrants to the labor market and other youths who have completed basic vocational training. We use the information given on unemployment and the individual labor market situation in the first few years after completing VET. SAKE additionally provides the population estimator necessary to calculate unemployment rates.

The *Swiss Job Market Monitor* (SJMM) in March of each year collects a random sample of job openings that are advertised in the press, on company websites, and online job portals.⁶ The data set covers the period since 2001 for the whole of Switzerland and reaches back to 1950 for German-speaking Switzerland. The following analyses are based on nearly 23,000 job advertisements from 2001 to 2011, among them 14,000 job openings for skilled workers with basic VET.⁷ The differentiated data on job and company characteristics and the requirements expected of job applicants allow us to create a detailed picture of the skills required by companies over time.

Based on the minimum requirements stated in the job ads, the job offers were classified according to three levels of education: the lowest level comprises jobs requiring no post-compulsory education, the medium level includes jobs requiring basic VET, while the highest level presupposes basic tertiary-level education.⁸

To identify the job openings suitable for new entrants to the workforce ('jobs for new entrants'), we classified the ads according to requirements that jobseekers who recently completed basic VET can and cannot meet. According to our definition, suitable positions are those that do not require experience or further education beyond basic VET, do not involve managerial or supervisory functions, and do not explicitly exclude young workers because of age. Table 1 shows the distribution of job openings in our dataset by level of education and jobs for new entrants.

The aggregate number of published job advertisements with similar requirements is a very sensitive and highly valid indicator of companies' personnel needs – and hence conversely of the labor market situation for the group in question.⁹ No matter whether the requirements stated in the ads are ultimately fully met or not, it is in every company's best interest to compose the ad in a way to target the group best

⁶ Detailed information about the Swiss Job Market Monitor at the Institute of Sociology at the University of Zurich can be found on the project website: www.stellenmarktmonitor.uzh.ch.

⁷ SAKE and SJMM data are disproportionately stratified complex random samples, which require using sample weights in the analyses and suitable methods for estimating variance.

⁸ In this study, tertiary-level vocational training (advanced vocational or master craftsman certificates, technical college, etc.) and post-graduate study programs are considered forms of further education, which build on the foundations of basic vocational training or general education.

⁹ For information concerning the external validation of the SJMM data, see Sacchi & Salvisberg (2011: 67ff) and Sacchi, Salvisberg & Buchmann (2005: 130).

suitable for the job as effectively as possible (since, among other things, filtering out unsuitable candidates costs time and effort; see Mencken and Winfield 1998). We can expect new labor market entrants to have slim chances at best when the vacancies to be filled have one or more critical requirements (this is also confirmed by an exploratory qualitative study by Müller 2011). Moreover, many newcomers to the workforce are likely to refrain from applying for the job in the first place in the face of requirements they cannot fulfill.

TABLE 1. Distribution of job openings, 2001-2011

		Level of education			
		low	VET	tertiary	
Jobs for new entrants	no	7.5%	44.9%	16.3%	68.7%
	yes	12.5%	15.1%	3.7%	31.3%
(n = 22,833)		20.0%	60.0%	20.0%	100.0%

3. Unemployment among new labor market entrants

Our theoretical considerations lead us to expect an above average risk of unemployment for new workforce entrants that climbs sharply in periods of economic downturn and displays an increasing trend in the long term. Figure 1 compares the development of the unemployment rate among VET graduates by month to the respective rate for the total population from 1990 to 2010.¹⁰ The following observations merit particular attention:

Labor market entrants have a higher vulnerability to unemployment in periods of economic downturn: Thus we observe a much sharper increase in unemployment among new entrants during periods of crisis while unemployment among this group approximates the general unemployment rate in times of economic boom.

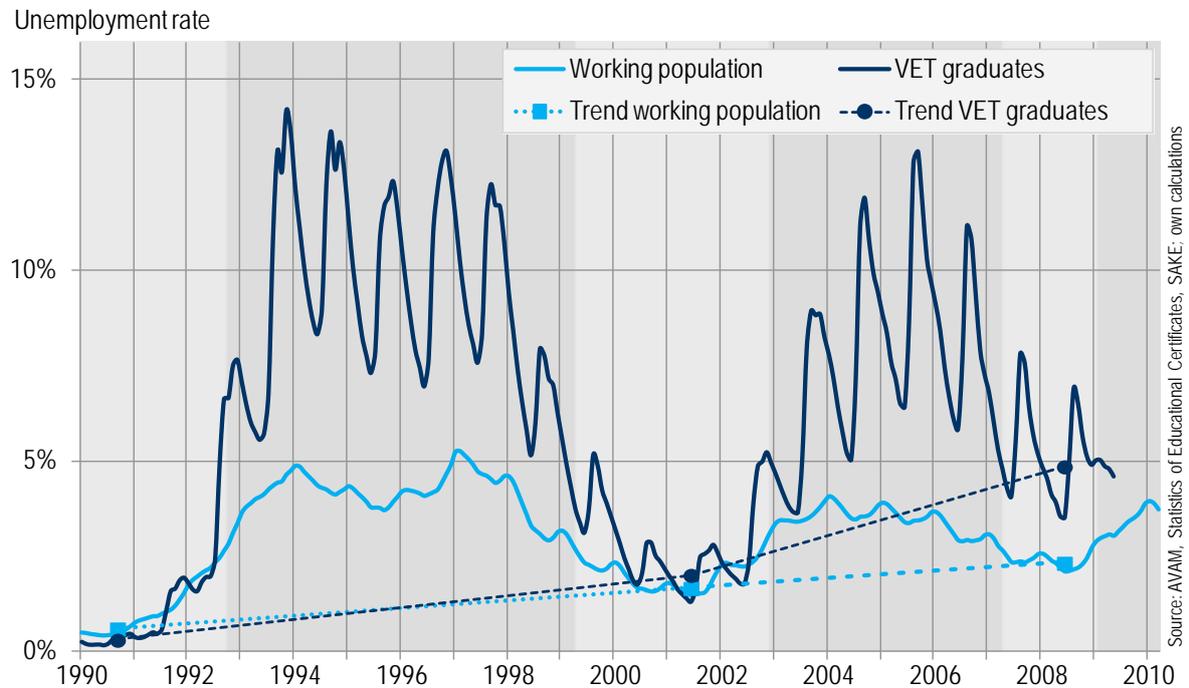
Strong seasonal fluctuations: Every September a large number of VET graduates enter the labor market at the same time upon completing final examinations. The transition of the entire entry cohort at once boosts unemployment for a short period of time.

Long-term increasing difficulties in entering the labor market: When we compare the average unemployment rate in the economic boom periods of 1990, 2001, and 2008, we notice an increasing gap to the detriment of VET graduates. While the unemployment rate among the latter was only about half the rate of the working population at large in 1990, it was already slightly higher than the average rate in 2001 and even

¹⁰ Unfortunately, the data does not allow an analysis for the entire population of VET graduates since 1990. Therefore Figure 1 refers only to career entrants with a dual apprenticeship. The unemployment figures are from the official Swiss unemployment statistics (AVAM), the population estimates for the gainfully employed population are based on the Swiss Labor Market Survey (SAKE), and the figures for VET graduates are provided by the Swiss Statistical Office's education statistics. However, the unemployment figures for VET graduates from 1990-1993 involve some uncertainty (for details concerning the calculations, see Sacchi & Salvisberg 2011: 14f).

more than twice the average rate in 2008. We can conclude that there has been a clearly disproportionate rise in hard-core unemployment among VET graduates.

Figure 1. Unemployment trend; monthly series for 1990-2010¹¹



More comprehensive series of measurements across the whole range of vocational education programs, available only for the period since 2001, point in the same direction. For instance, the unemployment rate for skilled young workers with basic VET aged 15 to 24 was 1.3 times higher during the economic boom in 2001 than for skilled workers of 25 to 54 years of age. As the economy peaked in 2008, the unemployment rate was already 1.6 times higher than for the 25- to 54-year-old segment of the skilled workforce (Sacchi and Salvisberg 2011: 12). Even for unemployment according to the ILO definition, which includes jobseekers not officially registered with the employment office, the analysis of SAKE data confirms a long-term structural shift to the disadvantage of young workers with VET. For the entire period from 1995 to 2009, the unemployment rate of 18- to 25-year-olds with basic VET shows a clearly positive trend (Sacchi and Salvisberg 2011: 19ff).

4. The significance of changes in labor demand at workforce entry

Based on our theoretical considerations outlined in section 1.1 to 1.5, we will now examine the possible explanations for the disproportionately growing unemployment among career entrants.

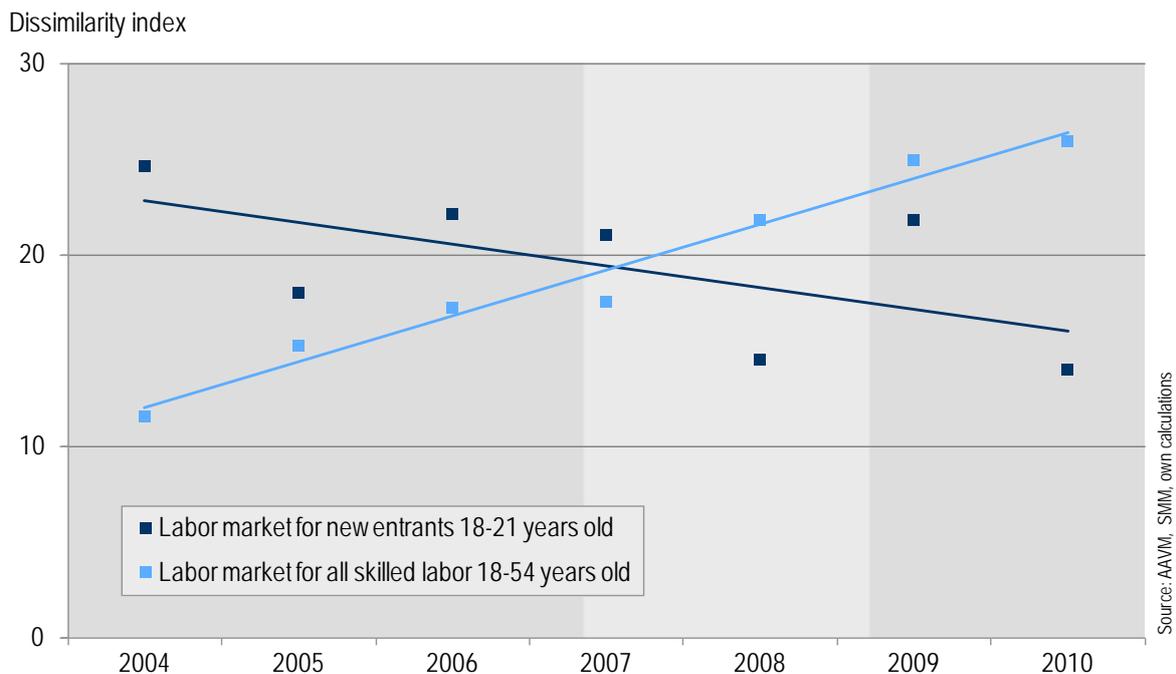
¹¹ In the figures, periods of above average total unemployment ('crisis periods') are indicated by a darker and below average unemployment ('economic boom periods') by a lighter shade.

4.1 Growing occupational mismatch

A changing composition of demand for different occupations can lead to structural discrepancies between supply and demand in the labor market for workers with VET. We would expect such an *occupational mismatch* when significant numbers of youths choose to train for occupations other than those demanded in the labor market.

We employ a dissimilarity index to capture the magnitude of skills mismatch in the labor market (formula 3 in Ragni 2004, for a detailed account, see Layard et al. 1991: 285ff). This allows quantifying and graphically illustrating mismatch: The index indicates the percentage of unemployed jobseekers who would have to retrain for another occupation to offset current imbalances between supply of specific VET degrees and the respective demand as documented in the job ads.¹² The dissimilarity indices shown in Figure 2 illustrate the level of overall mismatch based on seven broad categories of occupations (for details, see Sacchi and Salvisberg 2011: 48ff).

Figure 2. Occupational mismatch for skilled labor, 2004-2010



The microdata on unemployed VET graduates required for this analysis is available only for the period since 2004, which is of course a rather short time span in terms of the structural shifts that we are attempting to capture here. Nonetheless, the series of measurements allows assessing the structural discrepancies for the year at the begin-

¹² The calculations are again based on AVAM unemployment figures. The 'labor market for all skilled labor' includes the entire working population aged 18-54 years with basic VET; the 'labor market for new entrants' comprises all 18-21-year-olds with the same education. The vacancy figures are based on data provided by the Swiss Job Market Monitor. The vacancies for new entrants were determined according to the criteria described in section 2.

ning and at the end of the period under consideration (i.e., 2004 and 2010), which were quite similar in terms of labor market tension.

The development of the dissimilarity index displays an increasing occupational mismatch in the labor market for workers with VET since 2004. The labor market for new entrants with VET, however, shows no signs of a growing occupational skills gap. Quite to the contrary, the index declined from 25 to 14 points over the entire period, thus indicating that the occupational mismatch has even become smaller.¹³ Even though we should exercise caution in interpreting these findings due to the short time span and the limited number of occupational categories considered, there is no evidence in support of a growing mismatch with respect to labor market entrants. Supply and demand for occupational skills tends to match even better today than in the past.

4.2 Increasing educational requirements

The labor market trend towards higher education may imply that demand for workers with tertiary-level qualifications has been rising at the expense of workers with basic VET. In this case, we would expect fewer vacancies for people with basic VET, whether they are newcomers or experienced workers.

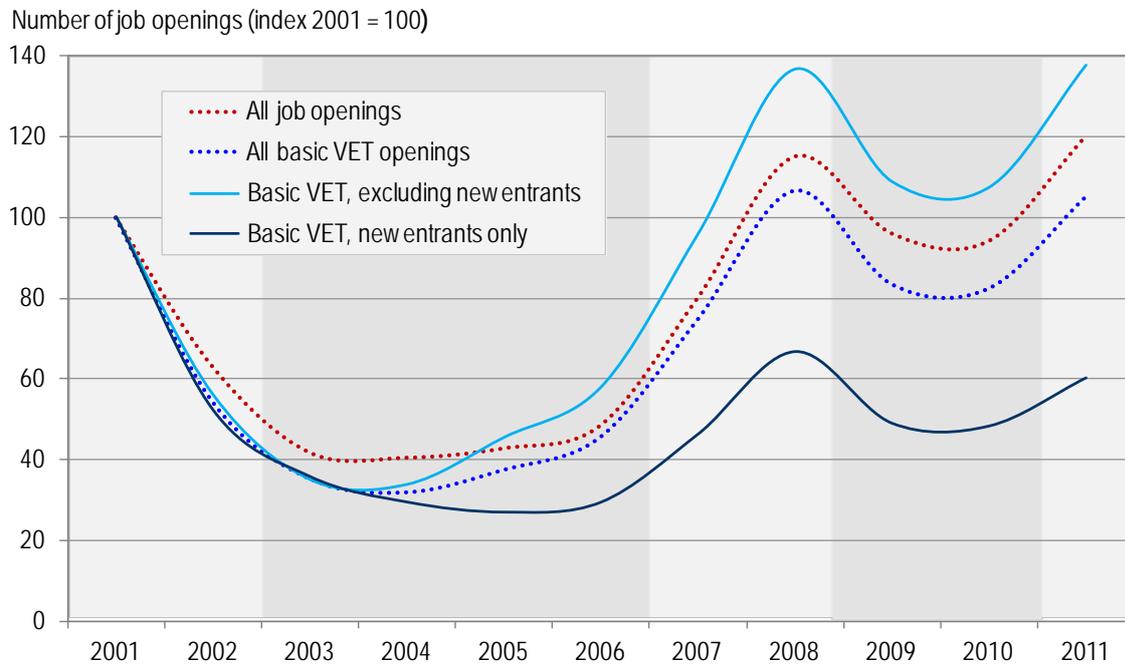
Figure 3 displays the indexed development of advertised job openings for various categories of jobs for the period from 2001 to 2011 based on the data from the Swiss Job Market Monitor. It clearly stands out that the volume of job openings strongly depends on the business cycle. Moreover, there is indeed a slight relative decline in the number of jobs requiring basic VET in the period under observation. However, once we differentiate between job openings for workers with VET suitable for new entrants and other job openings, it becomes apparent that the decline must be attributed exclusively to fewer jobs for new entrants. Job openings for skilled workers requiring additional qualifications beyond what VET graduates can usually be expected to meet display an above average increase to 15% above the overall index in 2011. It is therefore not true that there is less demand for basic VET in principle, rather there exist fewer and fewer jobs for which basic VET *alone* is sufficient as a qualification.

It needs to be mentioned, however, that the job market has developed even more favorably for people with tertiary qualifications. In line with our hypothesis, this points to a gradual shift in skills requirements toward tertiary qualifications. In terms of volume, however, this shift is considerably smaller than the decline in the job openings available to labor market entrants with VET. Consequently, the gap between the unemployment rates of new labor market entrants and older workers with VET increases. However, as Wyss and Weder's (2010) findings show, there is no widening gap between the unemployment rates of workers holding secondary and ter-

¹³ While the annual estimates are not very precise in this case, the observed decline between 2004 and 2010 is statistically valid ($p < .05$).

tiary certificates. In sum, the available findings on the composition of labor demand suggest that, at best, only a minor part of the growing unemployment among workforce entrants with VET can be attributed to employers' rising demand for higher levels of formal qualification.

Figure 3. Development of job openings, 2001-2011



4.3 Growing entry barriers for new labor market entrants

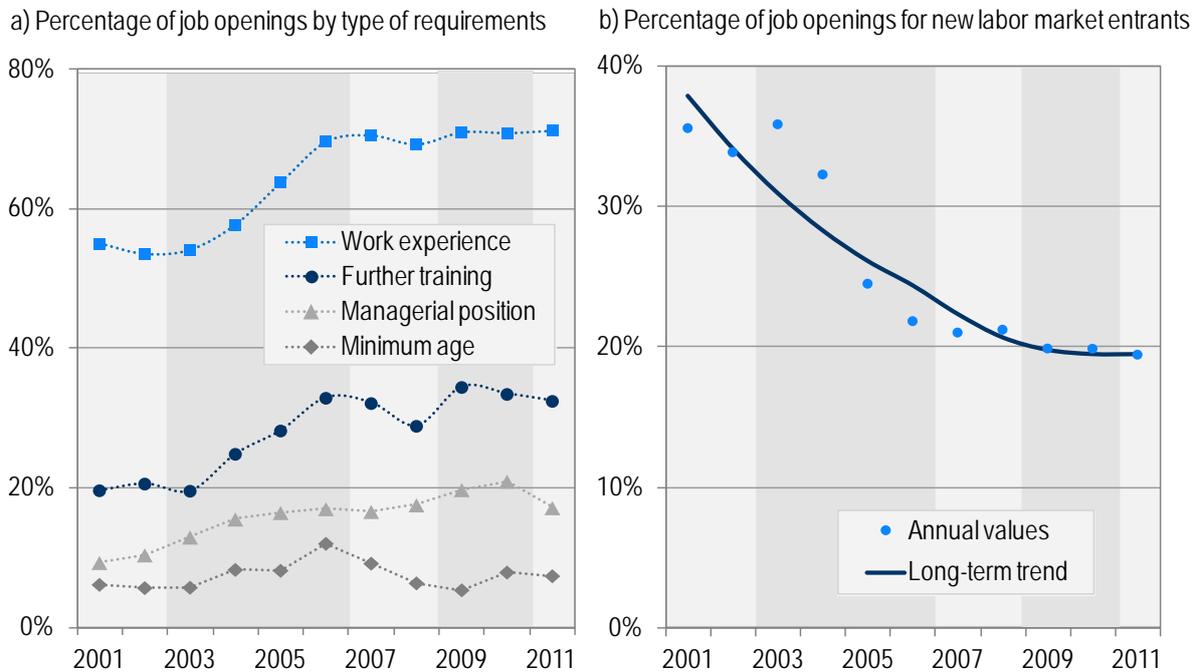
Increasing performance and efficiency demands in the workplace may result in employers attaching greater importance to workers being able to contribute quickly when hiring new staff. Work experience and further training in relevant areas can lower the costs of initial training for new employees and reduce uncertainty regarding job applicants' soft skills. For this reason both can become important hiring criteria.

Figure 4 shows the percentage of job openings aimed at workers with basic VET for the period 2001-2011 that, due to the job requirements, are hardly suitable for new entrants. On the left side, the graph illustrates the share of advertised job openings with four critical requirements that more or less explicitly exclude newcomers to the workforce (Figure 4a).

The most common requirement called for in job openings is work experience. In the last few years, this was the case in about 70 percent of the job openings suited for workers with VET. Approximately one third of the job openings require further training in addition to VET. The share of positions requiring leadership qualities reaches 20%. Finally, about 8 percent of the job openings for workers with VET exclude new labor market entrants from applying based on specific age requirements. Age is the only hiring criterion that was not mentioned significantly more frequently

in the period under consideration. Many of the job openings include several of the four critical requirements; in most of these cases, requiring work experience goes hand in hand with one of the other requirements. In sum, the findings suggest that lack of work experience is the major obstacle to new entrants finding a suitable job.

Figure 4. Requirements of job openings for workers with basic VET, 2001-2011



All in all, the additional job requirements resulted in a decline in the proportion of advertised jobs for workers with VET that is suitable for labor market entrants: from 36 percent in 2001 to 19 percent in 2011 (Figure 4b).¹⁴ Notably, the decline was particularly strong during the economic downturn from 2003-2006. The rapidly mounting barriers to labor market entry for newcomers observed during the years of recession and the subsequent stabilization of this trend at a higher level is a pattern typical of previous periods of economic downturn as well. Since the 1970s, we observe a regular increase in the respective entry barriers by an additional increment during each economic downturn (Sacchi and Salvisberg 2011: 38). Thus, while companies seem to sharpen their selection criteria in times of excess labor supply, they are not relaxed again in periods of growing labor demand. Against the backdrop of this long-term pattern, the job market for new entrants remained surprisingly robust during the most recent economic downturn in 2009. This may be due to a much less drastic and prolonged decline in labor demand compared to previous recessions in Switzerland (see the development of the overall index in Figure 3).

The proposed explanations for the growing importance of work experience and further training in selecting new staff focus on changes *within* companies at the level of

¹⁴The downward trend is highly significant ($p < .001$).

individual jobs. However, the aggregate long-term trend might also be a mere concomitant of structural changes in the economy that cause the rise and decline of different job categories. In this case, we would expect job losses primarily in those sectors, companies, and areas of business that traditionally have a high proportion of jobs suitable for new entrants while at the same time those job categories would gain importance that have always had high demands for, among other things, work experience and further training.

In the following, we will therefore take a closer look at the extent to which structural economic change accounts for the long-term decline in the proportion of jobs suitable for career entrants in relation to all jobs requiring VET, as illustrated in Figure 4b. For this purpose, we use logistic regression to model the change in the *share of entry-level jobs* for the period 2001-2011. The model allows assessing the long-term trend of job openings for career entrants irrespective of the economic fluctuations that affect the *absolute* number of job offers in general.

The dependent variable takes the value (1) in the case of jobs suited for new entrants with VET (according to our definition in section 2) versus (0) in the case of all other jobs for workers with VET. *Model I* considers a quadratic temporal trend, which provides a sufficient approximation of the non-linear decline for the period under consideration, as follows from Figure 4b.¹⁵ *Model II* incorporates additional indicators for the composition of the pool of available jobs by company and job characteristics.¹⁶ Comparing the two models allows assessing to what extent the long-term trend in the share of entry-level jobs can be attributed to structural changes in the composition of job openings.

As expected, Model II in Table 2 show substantial differences in the share of jobs for new labour market entrants in various occupations and sectors, large and small enterprises, and companies in the private and the public sector. The same holds true for various types of jobs. The long-term decline in the share of jobs for new entrants, however, can *clearly not* be attributed to the changing structural composition of the jobs advertised: Even if we comprehensively take into account both the composition of the underlying population of companies advertising jobs and the composition of the pool of jobs posted, we still observe the same long-term decline as indicated by the nearly identical regression coefficients for the two trend variables in Model I and Model II.

Accordingly, the coefficients pertaining to the time trend do not differ significantly between the two models.¹⁷ Adding interaction terms between time and structural

¹⁵ Estimation of a cubic function does not significantly improve the model.

¹⁶ The additional indicators included in Model II are based on the information included in the job advertisements. In order to control for changes in the data base caused by the integration of new advertisement media in 2006, we have added a control variable accordingly. Interactions between the control variable and the time trend are neither substantial nor significant.

¹⁷ A design-adjusted Wald test was performed using 'seemingly unrelated estimation' ($F [1,560] = 0.22$; $P = .64$) to test the hypothesis of identical pairs of Bs.

variables to Model II does not affect this result either.¹⁸ The observed long-term decline thus holds across all sectors and all kinds of job openings for the entire economy and is not merely a concomitant of structural economic change. This finding indirectly supports the explanations in section 1.3 and 1.4, which focus on the *processes within companies*.

TABLE 2. Job market structure and the availability of jobs for new labour market entrants (2001-2011)

Logistic regressions ¹⁾ (n = 14,133)	Model I (trend only)			Model II (trend & structure)		
	B	(SE)	Sig.	B	(SE)	Sig.
Trend (based on survey year)						
Linear term	-0.083	(0.015)	***	-0.086	(0.014)	***
Quadratic term	0.009	(0.004)	*	0.009	(0.004)	*
Occupational groups [ref. = mean]						
Occupations in finance, human resources management, and marketing	/			-1.261	(0.131)	***
Technical occupations	/			-0.708	(0.101)	***
Commercial occupations	/			-0.500	(0.094)	***
Occupations in teaching, health, and culture	/			-0.230	(0.133)	+
Occupations in retail and transportation	/			-0.220	(0.111)	*
Occupations in the hotel and restaurant ind. + the field of personal hygiene	/			-0.073	(0.176)	
Other occupations	/			0.654	(0.245)	**
Other industrial occupations	/			0.689	/	
Occupations in construction	/			0.718	(0.120)	***
Occupations in the metal, mechanical, and electrical industry	/			0.931	(0.110)	***
Type of employment [ref. = permanent, full-time]						
Part-time (50-90%)	/			0.307	(0.133)	*
Temporary employment	/			0.681	(0.139)	***
Secondary employment (less than 50%)	/			0.739	(0.252)	**
Internships	/			3.004	(0.374)	***
Sector [ref. = mean]						
Other industries and trades	/			-0.366	(0.106)	**
Business services	/			-0.356	(0.101)	***
Chemicals, metal, mechanical, electrical, clock and watch industry	/			-0.269	(0.100)	**
Commerce, transportation, communications	/			-0.027	/	
Social services	/			0.262	(0.110)	*
Unknown, private households	/			0.282	(0.137)	*
Personal services	/			0.475	(0.171)	**
Public sector [ref. = private sector]	/			-0.574	(0.150)	***
Company size [ref. = medium enterprises]						
Large enterprises	/			-0.492	(0.092)	***
Small enterprises	/			0.324	(0.176)	+
Expansion of the sample in 2006	-0.798	0.104	***	-0.684	(0.097)	***
Constants	-0.851	0.083	***	-0.615	(0.092)	***

1) Regression coefficients (B), robust standard errors (SE), level of significance (sig.). Legend sig.: *** $P \leq .001$; ** $P \leq .01$; * $P \leq .05$; + $P \leq .10$. SE takes the complex sample design into account (sample weights, clustering of job ads within advertising media, stratification, finite population correction for PSU).

¹⁸ We find a weakly validated interaction effect at a 10% level for only one group of occupations, namely for the metal, mechanical, and electrical industry; in this case, the decline in entry-level job openings is somewhat larger over time.

5. Summary and conclusions

Our research focus is on the long-term changes in the demand-side conditions for labor market entry for VET graduates in Switzerland. Although the Swiss dual VET system has fared quite well by international comparison in enabling a fairly smooth transition from education to the labor market, we are witnessing a persistent trend across business cycles of increasing unemployment among new entrants to the workforce. In the empirical section of our article, we checked the plausibility of various explanations for the growing difficulties in making the initial transition to the labor market. We paid particular attention to the little investigated role of change in the number and composition of jobs available to new labor market entrants.

In our analyses, we found no evidence for a growing occupational mismatch in the job market for new entrants nor for a general shift in qualification requirements to the disadvantage of vocational qualifications. There is little in the respective findings that questions the role of the dual VET system as the established institutional form of qualifying skilled labor. Our analyses of the job market, however, suggest that successfully completing a VET program *alone* no longer guarantees employment in today's labor market. Companies have increasing *requirements, especially in terms of work experience and further training*, that fresh VET graduates, by the very nature of being new to the workforce, cannot meet. As a result of this development, the number of job openings suitable for new entrants has been cut nearly in half from 2001 to 2011. Our results underscore that this trend is *not* the result of structural change causing a loss in the significance of business sectors, occupational fields, or categories of jobs that traditionally employ a high percentage of new labor market entrants. Rather, the proportion of jobs for new entrants has declined throughout the entire Swiss economy, across all sectors and job categories.

Taken together, our findings suggest that the increasing significance of job requirements that result in excluding labor market entrants provides the most convincing explanation for the long-term rise in structural unemployment among labor market entrants with VET in Switzerland.

Based on our theoretical considerations, there are two developments that could underlie the sharp increase in companies' requirements especially with respect to work experience: On the one hand, we argue that while tasks are becoming more demanding and require more extensive initial training, the capacity available to train new employees is declining as a result of companies' attempts to achieve greater personnel flexibility and meet growing market pressures. Firms will be more likely to hire the formally best qualified and most experienced skilled workers with additional knowledge in relevant areas, whom they assume to require little initial training on the job. On the other hand, there is sizable evidence suggesting that, due to changes in the organization of work, there has been a significant rise in companies' job requirements in regard to soft skills. To the extent that recruiters take work experience as an indirect signal for specific soft skills (e.g. negotiating skills) acquired in previ-

ous jobs, they may favor experienced workers over fresh VET graduates and advertise jobs accordingly.

Both explanations for growing job requirements can be interpreted as expressions of a single phenomenon that we might refer to as the spread of 'high performance work systems'. Our assumption that this type of work organization is relatively widespread in Switzerland corresponds with the findings of a comparative study on working conditions (Krieger et al. 2011). According to this study, employees in Switzerland, compared to other European countries, have the most flexible working hours, rank above average in terms of being involved in decision-making, work independently to a high degree, and are given more opportunities to pursue further training by their employers. On the other hand, in no other country is the strain arising from the pace of work and tight work schedules perceived to be higher than in Switzerland. Moreover, both stress factors have increased substantially from 2005 to 2010. In our interpretation, the expansion of such 'high performance work systems' is reflected in hiring criteria that impair the chances even of skilled labor market entrants.

Irrespective of how we explain growing company demands for work experience and further training in detail, our analysis of a longitudinal database representative of the Swiss job market suggests that there are growing hurdles which have to be overcome in the transition from VET to the labor market. However, young workers with VET who manage to overcome them are still very much in demand once they have collected some years of work experience. According to our analysis, growing unemployment among VET graduates entering the labor market is, thus, a consequence of increasing difficulties in finding the first job and not the result of a generally shrinking demand for skilled workers without tertiary education.

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