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*Comparative Analysis of Transitions from Education to  
Work in Europe*

**A ROUTE TO SKILLS**  
**A Comparative Analysis of the Position of**  
**Apprenticeship in Transition Systems in France,**  
**Ireland, the Netherlands and Scotland**

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**WORKING PAPERS**

## **1. Introduction**

Not fully integrated into the labour market and no longer within education, apprenticeships might easily fall into an area avoided in studies of education systems on one side and labour market research on the other. However, continuing to learn and commencing work, apprentices in fact deserve special attention in the study of transitions from school to work. For many young people this intermediate period is central to their transition. And, although apprenticeship is an ancient, even pre-historic form of training, it is by no means out-dated.

In discussions on present-day issues of bridging learning to work experience, of linking education systems and rapidly changing labour markets, apprenticeship programmes cannot be overlooked. The crucial and relatively recent view of learning as a lifelong process leads to a specific interest in apprenticeships, as in principle there is no reason why apprenticeship programmes should only be targeted at young people on the fringe of secondary education or be largely confined to certain skilled manual occupations, as they often have been. The specific combination of learning and working may be relevant to other sectors, occupations and age groups as well. Paradoxically, although in some cases apprenticeship schemes are embraced by pupils as a welcome opportunity to leave the classroom as soon as possible, they could be developed into one of the pillars of life-long learning.

Judgements on the relative merits of apprenticeship programmes much depend on the alternative they are compared to (school-based education, employment, unemployment or labour market programmes), on the criteria used (e.g. earnings, job-search period, number and length of employment and unemployment spells; occupational stability or mobility), and on the time-point of evaluation (e.g. one or five years after completion). Moreover, observed and unobserved selection bias remains hard to deal with, and comparison of apprenticeship to full-time vocational education is especially difficult because they are rarely actual alternatives in a given national context leading to identical or comparable sectors and occupations. And comparing ex-apprentices in one country to former full-time students in another leaves too many other things unequal.

While the overall outcomes of national evaluations and micro-data analyses of the relative merits of apprenticeship programmes (for an overview see Ryan, 1998) have thus not been unambiguous, cross-national comparisons of macro-indicators

have turned out favourably for countries with extensive apprenticeship systems. An OECD report (1996), for example, found that youth unemployment rates in countries with dual systems of vocational training were on average four percentage points lower than in countries with classroom-based vocational education. It is perhaps such findings, more than micro-level research, that seemed to justify the conclusion that the ‘German-speaking dual system’ may be the best way to optimise education-labour market matching and tackle youth unemployment, and has led to rather general policy-recommendations to promote apprenticeship (e.g. EC, 1997; EC, 1996; OECD, 1994: part 3b).

The enthusiasm for ‘the German system’ as the best solution in a certain part of the transition system seems to have faded somewhat recently, at least among scholars (see e.g. Bonnan, Mendes & Sofer, 1999; Durand-Drouhin, McKenzie & Sweet, 1998; Groot & Plug, 1998). On a practical level this may be related to general problems appearing in the German economy in the 1990s, and to doubts about how well the apprenticeship system is functioning in a *Wirtschaft* which is not performing so exemplarily *wunderbar* anymore. The relationship between youth unemployment and the quantitative size of the apprenticeship system (number of apprenticeship places at firms) may partly work in a direction that has often been overlooked: in a booming economy with labour-market shortages, employers may simply have more incentives and means to provide apprenticeship places than during recessions.<sup>1</sup> On a more theoretical level, the recognition – enhanced by comparative micro-level analyses in projects like CATEWE and renewed attention for the ‘institutional embeddedness’ (Müller & Shavit, 1998) of transition processes – has grown that the structure of educational systems and labour markets, and thus transition systems, varies so significantly across countries that national conclusions and ‘best solutions’ are not easily transferable from one system to another. What works very well in one country does not necessarily do so in others. This does not mean that cross-national comparisons are not interesting for scientists and useful for policy-makers, on the contrary. It does mean, however, that one should be very careful with general recommendations.

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<sup>1</sup> See e.g. Groot en Plug (1998). Although Steedman (1993) regards the German apprenticeship system as a good remedy against youth unemployment, she also observes the presence of pro-cyclical fluctuations in the number of apprenticeship places provided by firms.

The recognition that an apprenticeship-system ‘à la Germany’ is not a generally applicable magical key to smooth transitions from vocational education and training to work may provide the freedom to compare different apprenticeship systems to each other as well as to their alternatives, to treat apprenticeship as one of several ways to combine learning and working<sup>2</sup>, and to regard it as one possible element in life-long learning strategies. ‘Soft’ comparative studies of the position and role of apprenticeship programmes in their national contexts looking for ‘good ideas’ may prove fruitful alongside ‘hard’ econometric evaluations in search of ‘best solutions’.

### *Subject*

This paper will outline general cross-national differences and similarities in the position of apprenticeship programmes within the respective transition systems of France, Ireland, the Netherlands and Scotland, and compare basic characteristics of apprentices, using the ‘current’ CATEWE SLS database which integrates several recent national school-leaver surveys (see *data and methods* below).

The starting point of this study (and of a future, more elaborate, analysis that will study changes over time) is that the national ET and transition systems in the countries under study all somehow succeed in ‘producing’ manageable levels of knowledge and competencies required for specific occupations. However, the systems vary in the way they prepare young people for entry to these occupations: through apprenticeships, school-based vocational tracks, youth programmes, work schemes, on-the-job training or any combination of these.

We will analyse how the educational systems differ in the solutions they offer to certain equivalent labour-market demands, and in the role apprenticeship programmes play in ‘producing’ the knowledge, skills and competencies required for access to certain specific occupations: in which sectors and countries is apprenticeship the ‘high-way’ to certain skills, where is it one of the possible routes, where is it non-existent or negligible, and which tracks other than apprenticeship lead to similar destinations, in the same transition system or elsewhere?

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<sup>2</sup> Welters and Wolbers (1999), for instance, distinguish double statuses of ‘dual-system students’, ‘working students’ and ‘studying workers’.

‘Is apprenticeship better?’ (Ryan, 1998) is a question we will not ask here. Leaving aside the general problems in evaluating the relative merits of apprenticeship programmes, the apprentices in the dataset we used were still apprentices at the time they were surveyed, so it is impossible to answer the question as it is usually understood: which alternative is most successful in producing certain skills and abilities, operationalised as degree of subsequent ‘employment success’ in a longer or shorter period following the alternatives under evaluation. Not dealing with labour-market outcomes or the level or quality of skills acquired, the modest aim of this paper is to give a general overview of apprenticeship programmes and a basic quantitative description of apprentices in four European countries that have apprenticeship programmes, but not as extensive and significant as the ‘German speaking’ systems.

### *Research questions*

‘What is currently the relative importance, role and position of apprenticeships within the transition systems of France, Ireland, the Netherlands and Scotland?’ We will attempt to provide an answer to this general question by giving a description of apprenticeship programmes and apprentices along the following criteria:

- general characteristics of apprenticeship programmes in terms of entry requirements, duration, examination and types of occupation for which they are trained;
- overall size of apprenticeship programmes in terms of percentage of school-leavers in apprenticeships 1 – 1.5 years after leaving secondary school;
- relative importance of apprenticeships as a route to specific occupations, in terms of the representation of apprentices among all school-leavers in a certain occupation;
- basic characteristics of apprentices and school-leavers in other ‘statuses’ in terms of their gender, age, level and type of education and earnings.

### *Data and methods*

The data used in this study derive from the ‘current’ comparative school leavers’ surveys (SLS) database that has been constructed as part of the CATEWE project and integrates the 1997 surveys of 1995-1996 school-leavers from Ireland and

the Netherlands, the 1995 survey of 1993-1994 leavers in Scotland, and the 1996 survey of 1993-1994 leavers in France. The database has been constructed on the basis of known sample/population definitions and a common set of definitions of over 120 variables to capture commonalities and national peculiarities of transition pathways. Included are in principle all 'second level system leavers', i.e. those who left full-time secondary education and did not return to full-time education at second level within six months.

The most important differences in sample/populations definitions are the following: the *French* survey is in fact a 'labour-market entrants survey' and excludes leavers who continued in full-time education (at second or third level) without a break, as well as leavers from General Baccalauréat and agricultural courses. The survey was conducted in April-June 1996, but the 'destination data' refer to November 1995, about 1.5 years after leaving second level education. The *Irish* and *Dutch* samples refer to all young people who left full-time second-level education in 1995-1996, surveyed in autumn 1997, 15-18 months later. The *Scottish* leavers in the database left 'general' secondary school in 1993-1994 and were surveyed in Spring 1995, thus usually about 10 months after leaving. The Scottish sample does not include leavers from courses in Colleges of Further Education, which may be at second level. All FE courses count as destinations. The level of FE courses is not specified in the data, but Iannelli and Raffe (2000) estimate the proportion of school-leavers in the Scottish sample that subsequently enrolled in second-level FE courses at 12-13 per cent. (See CATEWE (2000) for a more detailed description of the surveys and the integrated data.)

The database includes a fifth country that will not be dealt with here: Sweden. The fact that Sweden had no apprentices would in itself not be a reason for exclusion, on the contrary: it would be interesting to study what routes lead to occupations for which other countries have apprenticeship programmes. However, for one of the possible alternatives, 'Youth programmes, Training and Employment schemes' (containing 12 per cent of the Swedish sample), there is no information for Sweden on social class (EGP) and occupation (ISCO). Moreover, because school-leavers were surveyed four years after they left compulsory education, the Swedish data differ in that lower-level leavers were surveyed much longer after leaving school than upper-secondary leavers. This may give incomparable results in studying routes to certain occupations.

Apprenticeship is indeed “notoriously difficult to define consistently across time and place” (Ryan, 1998: 289). In this paper, apprentices are defined as those who are classified as ‘apprentices’ on the variable ‘principal activity at the time of the survey’. We thus follow the national terminology of the countries under study: programmes categorised as apprenticeships in their respective countries are regarded as apprenticeships here. Classification of education and training programmes according to a standardised definition of apprenticeship would require more detailed information on the content of the programmes and other combinations of learning and working than is available in the database. Moreover, if such a new ‘objective’ classification would not match the national nomenclature, the drawbacks of causing confusion would probably outweigh the advantages of standardisation.

It should be stressed that in the data apprenticeship programmes are included as a ‘destination’ of secondary school-leavers, like ‘working for payment or profit’, ‘unemployed’ or ‘student’ (in general full-time third-level), not as a type of education left. In itself this seems to be more consistent with the position of apprenticeship programmes in the Irish and Scottish transition systems than with the French and especially the Dutch systems, where apprenticeship partly or mainly features as a distinct type of vocational upper secondary education. The French data also identify, in a separate variable, apprenticeship programmes as a type of secondary education left, for those students who became apprentices immediately after completing lower secondary education. These ‘apprenticeship leavers’ form 13.9 per cent of the French sample. One fifth of the French ‘post-secondary’ or ‘destination’ apprentices had left a ‘secondary apprenticeship’ earlier. For reasons of cross-national comparability, but also because there is no information on occupational class and sector for the ‘secondary apprentices’ in France, only the ‘post-secondary’ French apprenticeships, those included as a ‘destination’, will be dealt with here.

In the following sections we will give a general description of apprenticeship programmes in France, Ireland, the Netherlands and Scotland, followed by an overview of the type of occupations in which school-leavers in apprenticeships can be found: for which jobs are apprenticeships the normal route in some countries, a possible route in others and no route at all in other countries? (Unfortunately we cannot compare apprentices with ‘normal workers’ or school-leavers in Youth Programmes, training and employment schemes in terms of grades, since we have no information on grades for France, and we only have this information for leavers from

academic tracks in the Netherlands. Moreover, the information on grades available is difficult to compare cross-nationally. Another interesting point in comparing ‘different routes to skills’, the extent to which non-apprentices in occupations receive job-related or workplace training, similarly can not be analysed: the information is not available for France, and the content of the variable varies substantially for the other countries.) Consequently we will compare apprentices - cross-nationally as well as with other categories of school-leavers in the same country - on ‘individual characteristics’: gender, type and level of education, age, and earnings. Finally specific occupational categories will be analysed separately, comparing apprentices to ‘others’ in the same or similar jobs.

First, however, we will briefly contemplate the relationship between apprenticeship programmes and other parts of the education and training system. After all, the position and role of one element of a transition system can hardly be understood or analysed fruitfully without taking the overall structure and characteristics of other elements into account.

## **2. The relationship between apprenticeship and other parts of the ET system framework**

In the emerging theoretical framework for cross-national comparisons of education and transition systems in Europe, three ‘meta-variables’ have gained a central position in the comparative classification of upper-secondary education: standardisation, differentiation and school-to-work linkages or labour-market linkage (see e.g. Hannan, 1999a; Hannan, Raffe and Smyth, 1997; Müller and Shavit, 1998).

*Standardisation* refers to the degree to which curricula and certification are standardised nationally. As standardisation is generally high in all European educational systems – with some exceptions and ambiguity concerning the UK - this characteristic is often left aside, as it will be here. *Differentiation* denotes the existence of and separation between different tracks in secondary education, and the degree to which the education and training system “ranks or ‘sorts’ individuals” (Hannan, 1999a: 14). The main form of differentiation is the distinction between general/academic and vocational education, but differentiation may also apply to separate tracks within vocational education. In the latter case differentiation usually correlates with the ‘occupational specificity’ of vocational education and training (see

Müller and Shavit, 1998): strong differentiation between academic and vocational tracks is usually accompanied by strong differentiation within vocational secondary education, although in principle the ‘granularity’ of the latter may vary even across systems with the same degree of differentiation between academic and vocational tracks. Although the emphasis often lies on the ‘horizontal axis’, i.e. differentiation between tracks in content and subject, ‘vertical ranking and sorting’ (sometimes denoted by ‘stratification’) in terms of levels and hierarchies is also included in the concept<sup>3</sup> (see Hannan, 1999a). The hierarchical subdivision of general secondary education into MAVO, HAVO and VWO in the Dutch system is a strong example of early and formal vertical differentiation within a system that is highly differentiated horizontally too. *School-to-work or labour-market linkage*, finally, refers to the extent to which employers are involved in the education and training system, and includes the role and organisation of work-based provision.

In general, secondary education in Ireland can be classified as having low or moderate track differentiation and weak linkages to the labour market; in the Netherlands as highly differentiated with strong school-to-work linkages; in Scotland as moderate on both points; and in France as moderately/highly differentiated and lowly/moderately ‘linked’ (Hannan, 1999a. See also Hannan, Raffe and Smyth, 1997; Müller and Shavit, 1998; Schröder, 2000; Iannelli and Raffe, 2000). While academic and vocational secondary education are clearly separated in both France and the Netherlands, differentiation can be regarded as stronger in the Netherlands. This is partly because track differentiation starts at upper-secondary in France while in the Netherlands the ‘lowest stratum’ of lower-secondary is split into VBO (vocational) and MAVO (academic)<sup>4</sup>. In addition to this, the different vocational tracks in the Netherlands are more skill- and occupationally specific than in France.

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<sup>3</sup> Hannan, Raffe & Smyth (1997: 430-431), for example, write: “In countries with undifferentiated ET systems, employers tend to pay more attention to the ‘level’ of education achieved. Where the system is also standardised in terms of curriculum and certification, employers tend to use examination performance (grades) as a criterion for recruitment (see Breen *et al.*, 1995).” While differentiation between academic and vocational tracks is often vertical as well as horizontal, ‘occupational specificity’ of vocational education may decrease vertical differentiation between academic and vocational tracks. Vocational tracks may then be viewed as different, rather than ‘lower’ (see e.g. Müller & Shavit, 1998). Iannelli and Raffe (2000) make a similar point in relation to ‘education logic’ versus ‘employment logic’ in upper-secondary education.

As Hannan (1999: 14-15) points out, Allmendinger’s (1989) concept of stratification seems too imprecise “to assess the way in which the education/training system ‘ranks’ or ‘sorts’ individuals at the end of each stage.” Its usability may also vary widely between (parts of) educational systems. ‘Outcome differentiation’ (Hannan, 1999: 15), however, may overlook vertical differentiation before the end of the stage. Müller & Shavit (1998) seem to use stratification for both horizontal and vertical differentiation. Vertical differentiation thus still appears to deserve cross-national conceptual elaboration.

<sup>4</sup> This horizontal differentiation at lower secondary is now being decreased, as VBO and MAVO merge into VMBO.

The relationship between secondary education and apprenticeships - or the role and position of apprenticeships within the transition system - depends on where apprenticeship itself is placed theoretically: inside or outside vocational upper-secondary. The CATEWE SLS database includes apprenticeship as a destination and the structure of the data thus induces a view of apprenticeships as post-secondary education and training programmes. This definition, however, seems more accurate for Scotland, and most notably, Ireland than for the Netherlands and France. (In some cases the overall classification of an education and training system on the differentiation and labour-market linkage dimensions might change depending on whether apprenticeship programmes are included as a part of the system or not.)

Leaving this general problem of inclusion or exclusion of apprenticeships in typifications of secondary education aside, what is of specific interest for the position of apprenticeship programmes within the transition system is the degree of (horizontal) *differentiation* and the *school-to-work* or *labour-market linkage* in 'school-based' upper-secondary education. Where there are highly differentiated vocational tracks with strong linkages to the labour market for a broad variety of sectors and occupations, like for instance MBO in the Netherlands (whose curricula include periods of work placement), there is less 'space' and need for apprenticeships to produce occupational skills. To a lesser extent this is also true for France, where school-based upper-secondary is quite differentiated, but not strongly linked to the labour market. Where school-based secondary education is not very occupationally-specific and weakly linked to the labour market, as in Scotland, there should be a specific function and need for apprenticeships (and other 'post-school' training schemes). Although in Ireland secondary education has become more 'track-differentiated' than in Scotland (the recent introduction of the Leaving Certificate Applied Programmes and Vocational Programme (LCAP and LCVP) and Post-Leaving Certificate vocational courses (VPT) further contribute to this), it is much less so than in the Netherlands and France and not strongly linked to the labour market.

As Müller and Shavit (1998: 5) remark, in strongly differentiated systems like Germany or the Netherlands "a large number of occupational specialisations are taught in specific school tracks. In such systems, the occupations specialised for would not just be carpenter, but cabinet maker or construction carpenter..." In countries where school-based secondary education is more general, as in Scotland and

Ireland, most students follow mostly ‘academic’ courses, and vocational subjects or modules are less specific: in such systems cabinet makers and construction carpenters have to obtain their specific skills in another way, on the job, in apprenticeships or in training programmes. (Concerning school-leavers in ‘normal jobs’, outside apprenticeships and training programmes, we would indeed, like Müller and Shavit (ibid.), expect fewer school-leavers in unskilled occupations in systems where school-based vocational education is more skill-specific than in less differentiated systems.)

Thus, would we expect more apprentices in Scotland and Ireland than in the Netherlands and France? Perhaps not so much as the previous line of reasoning would suggest. Firstly, if we view apprenticeships – very differentiated and very ‘linked’ – as part of the secondary education system, the same historical origins and processes, logic, mechanisms or school-to-work institutional linkages that lead to differentiated school-based vocational education may also lead to more extensive apprenticeship programmes. Apprenticeships and occupationally specific school-based vocational tracks may then not only be functional alternatives but also branches from the same root, elements of one structure of vocational education and training. Secondly, in the Netherlands and France apprenticeship forms an alternative to full-time vocational education comparatively early in school careers, before the age limit of (partial) compulsory education, and may therefore attract students who do not have the desire or ability to remain in the classroom. Apprenticeship may thus be a popular exit route from school.

Concerning the relative position of school-based vocational education and apprenticeships, in education systems where the former is rather skill-specific as well, one may find a difference in status similar to the one often observed between academic and vocational tracks in undifferentiated systems: “[V]ocational education is less prestigious than academic education. The more successful students tend to attend the academic programmes, whereas the less successful turn to vocational education. Thus, having attended a vocational programme of education constitutes a signal that the job applicant is neither bright nor disciplined” Müller & Shavit (op. cit.: 6). Apprenticeship may then be less prestigious than school-based vocational education, and the horizontal differentiation between academic and vocational education may be accompanied by vertical differentiation between full-time vocational education and apprenticeship. On the other hand, the perceived difference between apprentices and full-time vocational students may also simply be that some

young people learn better at school, some others in a job. Or even that apprentices have proven their abilities, discipline and suitability for the labour market by finding and keeping their apprenticeship place. Unfortunately the relative status of apprentices and full-time vocational students is hard to identify from the data we use, and for France and the Netherlands we lack information on school-performance for the earlier point in time at which some students entered school-based vocational education, others apprenticeships. Moreover, we should stress once again that for France we analyse the ‘post-leaving’ apprenticeships only.

### **3. Apprenticeships in France, Ireland, the Netherlands and Scotland: a general overview**

#### *General characteristics of apprenticeship programmes<sup>5</sup>*

In all four countries apprenticeships last typically around 3 years (4 in Ireland) and, if completed, lead to nationally recognised and regulated certification after examination. The duration of the apprenticeship is not fixed in terms of years, but depends on the skills acquired. Apprentices usually receive a fee or a small wage, directly or indirectly subsidised by the state, but employers are free to pay more than the minimum.

In *Ireland* the apprenticeship system is nationally regulated by the State Training and Employment Agency (FÁS), which in some cases may also provide training places if none are available at firms. Traditionally craft apprenticeship has been of the time-served type, without mandatory attainment of predetermined standards, but since 1995 (following agreement between the social partners and the government on the Programme for Economic and Social Progress in 1991) a new ‘Standards-Based Apprenticeship’ system has been introduced, making the National Craft Certificate a requirement for recognition as a craftsworker. The number of apprentices, which reached lows in the mid-1980s and mid-1990s, has increased considerably since 1995. The new Apprenticeship Rules established in 1997 specify minimum entry requirements and regulate training, assessment and attendance of off-the-job training. The minimum age is 16 and there is no formal upper age limit. Aspiring apprentices have to find an employer to offer them an apprenticeship in their chosen trade and can be assisted by employment offices. The Irish apprenticeship system has recently become ‘post-upper-secondary’ in practice rather than ‘post-lower-secondary’, partly because of the selectivity of employers, who may require minimum Leaving Certificate qualifications (grade D in five subjects in the Junior Certificate examination is the official entry minimum). Theoretical instruction is based in either FÁS training centres, colleges of education or, for some ‘sophisticated’ subjects like electronics, Institutes of Technology. Costs concerning on-the-job training, including wages, are funded by the employer, costs related to off-the-job training (usually in 3 phases together not exceeding 40 weeks), including the training

allowance, are met from state funding, with employer contributions through the Apprenticeship Training Levy. ‘Modular assessment’ (off-the-job) and ‘competence assessment’ (on-the-job) form the basis of the certification. Apprenticeship programmes only extend to certain industrial and occupational sectors (personal and protective services; extraction and building; metal and machinery; and wood treating and cabinet making are the main sectors), predominantly training skilled manual workers. Apprenticeships in the hotel, catering and tourism industry (under the responsibility of the State Tourism Training Agency CERT) and agricultural apprenticeships (administered by the Farm Apprenticeship Board) are part of separate schemes, to which different rules and practices apply.

In *the Netherlands* an apprenticeship may be generally regarded as a special type of vocational upper-secondary training, although a lower secondary diploma (MAVO or VBO) is not an entry requirement, except for the highest of three levels of apprenticeship - which accounts for a small proportion of apprentices<sup>6</sup>. The majority are trained at the lowest level (‘basic occupations’), while roughly one third are trained at the second level. Apprenticeship has in general a lower status than the highly valued MBO (school-based vocational upper-secondary education) and is partly regarded as a way to keep potential ‘drop-outs’ inside the educational system. Apprentices have to be a minimum of 16 years, the age limit of full-time compulsory schooling. As a rule, apprentices work four days a week and receive education in school the fifth day. Off-the-job training is funded by the state, employers receive tax subsidies on the wage costs of the apprentices. Together with other forms of vocational education and training like MBO, apprenticeship programmes are now organised within Regional Training Centres (ROC), where apprentices receive their ‘classroom schooling’. The government, the institutes of education and the social partners (employer organisations and trade unions) are jointly responsible for the apprenticeship system and negotiate its content and curriculum. The Dutch apprenticeship system is rather extensive in terms of the range of sectors and types of occupations it covers, however its quantitative importance does not compare with, for

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<sup>5</sup> The descriptions are largely based on Hannan et al. (1999b), EURYDICE/CEDEFOP (1995), CEDEFOP (1999), and additional information provided by the CATEWE partners.

<sup>6</sup> Formerly the distinction was between ‘primary’, ‘secondary’ and ‘tertiary’ apprenticeships. Since August 1997 four levels are distinguished (for MBO as well as apprenticeships), the lowest of which (training for ‘assisting occupations’) did not previously exist. ‘Primary’ has become level 2, ‘secondary’ level 3 (‘independent occupations’), ‘tertiary’ level 4 (‘middle management’) and 5 (‘specialist’). However the reforms of which these changes form an element did not yet apply to the leavers in our data.

instance, the German equivalent. The system has changed significantly following the new Education and Vocational Training Act (WEB). From August 1997 students in upper-secondary vocational education and training can choose at different levels between a track in which the emphasis lies on learning at school (the BOL pathway, similar to former MBO) and a track which is primarily based on learning on-the-job (the BBL pathway, closer to the former apprenticeship route LLW). Although the aim of the reforms is to offer both pathways for in principle each subject (occupation), in practice often only one pathway to a certain qualification is offered (SER, 1999).

The situation in *Scotland* underwent important changes with the introduction of 'Modern Apprenticeships' in 1995. The new apprenticeship programme is primarily targeted at 16-year-old school leavers, provides a level of vocational training somewhat higher than the basic Youth Training in the 'Skillseeker' programme, aims at a nationally recognised certificate at level 3 of the Scottish Vocational Qualifications (SVQ), and is organised through Local Enterprise Companies (LEC). Modern apprenticeships are standards-based but usually last around 3 years (i.e. longer than most other Youth Training programmes) and have to be completed before age 25. Apprenticeship programmes are more limited in the range of occupations than the Skillseeker programme as a whole, and largely train for the same jobs as Irish apprenticeships (except wood treaters and cabinet makers), with the addition of clerks. The 'theoretical component' of the apprenticeship programme is provided at FE colleges, firm training centres or group training centres. The responsibilities of apprentice and employer are outlined in national training agreements that set minimum standards for each sector, but the final qualifications are not externally assessed. Entry requirements largely depend on employer selectivity and vary by sector and occupation. The introduction of 'modern apprenticeships' has revived apprenticeship in Scotland, which had been in a long-term decline due to a reduction in the size of 'apprentice-friendly' industries, high levels of unemployment and the growth of alternative training structures such as the Youth Training scheme. 'Traditional apprenticeships' were less regulated and standardised than their modern equivalent, and time-served rather than standards-based. There was no legal requirement for the apprentice to be given vocational education and training leading to a qualification, although most employers would enable their apprentices to follow off-the-job education and pursue a vocational qualification.

In *France* apprenticeship programmes form an upper-secondary track parallel to school-based vocational education and usually lead to a Certificate of Vocational Aptitude (CAP), for which apprenticeships form the main route. However, successive contracts and higher-level apprenticeships give apprentices access to all levels of vocational qualifications, up to an engineer's diploma (levels I and II). Anyone between 16 and 26 years of age can enter an apprenticeship, as well as anyone younger than 16 who has completed lower secondary education. National evaluations have shown that about half of the apprentices had experienced difficulties in school since entering secondary education. The number of apprentices fluctuated somewhat above 200,000 from the 1980s onwards, but has steadily increased since 1993. Less than half of the apprentices enter programmes immediately following lower-secondary school, others enter after a period outside the educational system. In the latter case apprenticeship programmes may be regarded as an alternative to training schemes such as the Qualification Contract. Apprentices have a right to a minimum wage and are subject to the same rules and regulations as other employees. Employers are obliged to enrol their apprentices in a national or regional Apprentice Training Centre (CFA), which provides the off-the-job education. Most CFAs are run by Chambers of Industry and Commerce or Craft Chambers. As a rule one week at a CFA is alternated with two weeks at the enterprise. Since 1993, education, training and research institutions can also offer apprenticeship training, after signing a contract with a CFA or through setting up a special apprenticeship section under contract with the Regional Council. Employers are subsidised through tax and social insurance exemptions or, as of 1996, through a global compensatory bonus, paid in part on signature of the apprenticeship contract, in part at the end of each year. Off-the-job training is state-funded, partly through an apprenticeship tax paid by employers. Apprenticeships do not usually aim at the same occupations as school-based vocational education, although some qualifications can be reached through both routes. Apprenticeships are still predominantly the concern of craft businesses and small enterprises, but they are nevertheless more heterogeneous in terms of occupational sectors than the Irish or Scottish systems.

Given the differences between apprenticeship programmes in the four countries, the percentage of apprentices in our sample - second level education leavers 1 to 1.5 year after leaving school - does not vary as much as one may expect: from 8.2

per cent in Ireland to 14.4 per cent in France (Table 1). The figure for France is not comparable as the French data are taken from a labour market entry survey, not a school-leaver survey, and therefore do not include students who continued their education in third level. If they had been, the percentage of apprentices might well be around 10 per cent for France as well.

### *Apprenticeship occupations*

If one thinks of apprenticeship as one possible route to skills, and of skilled jobs as typical apprenticeship occupations, Ireland comes closest to the ideal type: on the EGP scale of social class position almost nine out of ten Irish apprentices are classified as 'skilled manual workers', against two thirds in Scotland, one third in the Netherlands and only one fifth in France (Table 2). Contrary to other countries, in France apprentices in manual jobs are in principle classified as 'semi- or unskilled workers', regardless of the skill level of the occupation they are being trained for, unless they have already acquired a vocational diploma or certificate. As a result, almost half of the French apprentices in the school-leaver sample are 'semi- or unskilled workers', an EGP class which comprises roughly fifteen per cent of apprentices in Scotland and twenty per cent in the Netherlands, and is almost empty for Ireland. Upper and lower routine non-manual workers (EGP class IIIa and IIIb), finally, make up less than six per cent of all apprentices in Ireland and more than one third in the Netherlands. In general, the distribution of apprentices on the EGP classification is clearest in Ireland and most diffuse in the Netherlands. Because of the different categorisation of 'manual apprentices' mentioned above and a slightly different coding in general in France, but also because the EGP scale gives a rather rough picture of types of occupation, we will turn to the finer ISCO classification now.

If we look at the distribution of apprentices across ISCO categories (Table 3), again the situation is clearest for Ireland and least so for the Netherlands. More than three quarters of Irish apprentices are 'craft and related trades workers', another fifteen per cent 'service workers and market sales workers'. These are the largest categories for the other three countries as well, but in the Netherlands significant numbers of apprentices can also be found in 'technicians and associate professionals' (mostly nurses and midwives), 'elementary occupations' and 'plant and machine

operators and assemblers’; in Scotland in ‘clerks’; and in France in ‘plant and machine operators and assemblers’.

A finer breakdown of occupational position, using 2- and 3-digit ISCO-88 categories, reveals greater differences within the main categories mentioned. For instance, in Ireland and Scotland all ‘service workers and market sales workers’ (category 5) are ‘service workers’ (51), in the Netherlands and France many are ‘sales workers’ (52); one fifth of all Irish apprentices are in a 3-digit category which is empty elsewhere: ‘wood treaters and cabinet-makers’ (742); the main category 8 holds about the same percentage of apprentices in the Netherlands and France, but in the Netherlands half of these are ‘drivers and mobile plant operators’, against almost none in France. Thus, not only do the countries under analysis differ significantly in what are typical ‘apprenticeship occupations’, one also has to be careful in comparing groups of apprentices who are in the same main category (1-digit ISCO groups) across countries: they may well be in rather different occupations.

#### **4. Individual characteristics of apprentices**

The proportion of school-leavers in apprenticeships 1 to 1.5 years after leaving the second level system is around 10 per cent in all four countries, but the position of apprenticeship programmes within the transition systems may be said to vary significantly. Roughly schematised, apprenticeships may be placed largely beside post-school education and training in Ireland and beside vocational upper-secondary in the Netherlands. In France both (ideal-type) positions are present, but the data have led us to restrict ourselves to ‘post-school’ apprentices. In Scotland apprentices are situated next to (predominantly general) upper-secondary students as well as next to ‘normal’ labour-market entrants and trainees. Regarding the type and array of occupations for which apprentices are educated and trained, Ireland’s skilled manual jobs are on one side, while the broad range of sectors and occupations of the Netherlands are on the other side.

Turning from programmes to individuals, we will now discuss the basic characteristics of apprentices (in terms of gender, age, type and level of education and earnings) in Ireland, the Netherlands, Scotland and France, in comparison with school-leavers in other ‘statuses’, and in a cross-national perspective. In the following

section we will then review different routes to similar destinations, by comparing apprentices to others in specific occupational positions.

### *Gender*

Apprentices are predominantly male in the four countries, but some variation does occur: in Ireland only 13 per cent of all apprentices are female, in France and the Netherlands more than one third are female (Table 5). However, if we look at specific occupational sectors, little cross-national variation according to gender is apparent. Of apprentices in ‘crafts and related trades’ (ISCO 7), by far the largest apprenticeship sector in all countries, 0.6 per cent are female in Ireland, 2.1 per cent in the Netherlands, 2.7 per cent in Scotland and 3.0 per cent in France. In all four countries most female apprentices are to be found among ‘service workers and market sales workers’ (ISCO 5): 82.1 per cent in Ireland, 42.9 per cent in the Netherlands, 51.3 per cent in Scotland and 74.0 per cent in France. The greater proportion of female apprentices in the Netherlands and France is partly related to the relative size of ‘ISCO 5’ (see Table 6). In addition, around 70 per cent of apprentices in ISCO 4 (‘clerks’) in the Netherlands, Scotland and France and almost 90 per cent of apprentices in ISCO 3 (‘technicians and associate health professionals’) in the Netherlands and France are female, while these ‘female apprentice categories’ are absent in Ireland.

To illustrate the strong ‘gendering’ of apprenticeships in the four countries: when we apply a >66 per cent gender criterion<sup>7</sup> (i.e. tracks with more than 66% males are ‘male tracks’, tracks with more than 66% females ‘female tracks’, tracks with a more equal gender distribution are ‘mixed’) and restrict ourselves to 2-digit ISCO occupational categories with at least 3.0% of all apprentices, we find no mixed apprenticeships in any of the countries. When we broaden the limits to 75 per cent, in total 5 mixed 2-digit ISCO categories appear with at least 3.0 per cent of all apprentices in the respective country: ‘office clerks’ (ISCO 41) in Scotland; ‘personal and protective services’ (ISCO 51) in Ireland, the Netherlands and France; and ‘models, salespersons and demonstrators’ (ISCO 52) in the Netherlands. All of these ‘mixed’ categories are predominantly female. In other words: some of the predominantly female categories are to a certain extent ‘mixed’, whereas none of the

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<sup>7</sup> The criterion was borrowed from Smyth (2000).

male categories have a substantial number of female apprentices. Apparently female apprenticeships are less female than male apprenticeships are male. Although most are too small for a reliable analysis, the general tendency of strong gendering also holds in the finer grid of 3-digit ISCO occupational categories: none of the 3-digit categories with more than 5 per cent of all apprentices are mixed in any of the four countries.

### *Educational background*

In general the educational attainment of apprentices in Ireland, Scotland, the Netherlands and France is lower than that of non-apprentices who left secondary education the same year: the proportion of apprentices who passed upper second-level exams is much lower, the proportion who took no formal exams or failed lower second-level exams higher than of non-apprentices (Table 4, Table 5). However, there are significant differences between the four countries here.

On average the level of education of apprentices in our sample is highest in Ireland (mean 4.03 on a VTLMT scale<sup>8</sup> from 1 ‘incomplete lower secondary’ to 5 ‘passed upper second-level exam’) and lowest in France (3.05; see Table 5). In Ireland more than half of the apprentices passed upper second-level exams, against a quarter in the Netherlands, a third in France and one-sixth in Scotland. Almost half of the French apprentices did not finish lower secondary education. In Scotland and the Netherlands about sixty per cent of apprentices come from the ‘passed lower secondary’ and ‘failed upper secondary’ categories (Table 4). The variation in the level of education of apprentices is highest in France and lowest in Scotland. Of course the overall level of French school-leavers in the data is significantly lowered by the exclusion of people continuing their education. To a much smaller degree, the overall Scottish levels are deflated because secondary-level vocational courses at FE colleges count as a destination, as mentioned earlier.

Considerable cross-national differences also appear in the *type* of secondary education (general/academic or vocational) achieved by apprentices: Ireland and France have an almost perfect 50-50 distribution, in the Netherlands apprentices are

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<sup>8</sup> The ‘VTLMT scale’ of highest educational stage distinguishes five categories based on highest level (lower or upper secondary) and on whether one passed an exam, failed an exam or left before the exam. For example, students who enrolled in upper-secondary education but left school before upper-secondary examination are categorised as ‘passed lower secondary’. See Hannan et al. (1998) for the background of the VTLMT classification.

predominantly from vocational (VBO or uncompleted MBO) secondary tracks, in Scotland four-fifths left a primarily general track (but in Scotland type of education is overwhelmingly academic for all leavers<sup>9</sup>).

Comparing the scores across ‘principal activity’ within each country, we find that in the Netherlands and especially France the overall level of educational attainment of apprentices is much lower than that of school-leavers in ‘normal’ jobs at the time of the survey, and also lower than that of unemployed and people in Youth Programmes, Training and Employment Schemes (‘YP/T/ES’ in Table 4 and 5). In Scotland and Ireland the difference in the level of education between apprentices and ‘workers’ is much smaller (in Ireland it is not significant at  $p < .05$ ), and Scottish and Irish apprentices are on average ‘more educated’ than school leavers who were unemployed or in programmes and schemes at the time of the survey, although the difference is much smaller for Scotland.

In type of secondary education followed there are substantial differences between ‘normal workers’, apprentices and those in ‘programmes and schemes’ only for France, where 49 per cent of the apprentices left an academic track, against 19 per cent of the ‘workers’ and 27 per cent of those in youth programmes, training and employment schemes. This is, of course, related to the level of French apprentices, since vocational programmes are rare at lower-secondary level and almost half of the French apprentices left at ‘failed lower second-level exam’ or below. Because of the existence of lower-secondary vocational VBO in the Netherlands, this relationship does not hold for the Netherlands.

### *Age*

In all four countries the mean age is lower for apprentices than for ‘normal workers’, but the difference is much larger for the Netherlands and France (around two years) than for Ireland and Scotland (less than six months). Differences in age are of course related to differences in level of education as mentioned above, which are much larger for the Netherlands and France than in Ireland and Scotland. In addition, the vocational upper-secondary tracks that typically lead directly to the labour market in the Netherlands and France last longer than the mixed (Ireland) or academic

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<sup>9</sup> This has to do with the absence of vocational secondary schools (lower- and upper-) as well as with the categorisation of tracks based on the mixture of ‘modules’ and ‘Highers’ in upper-secondary. Curriculum type was set to academic in the data for all who are qualified to enter Higher education.

(Scotland) secondary schooling most Irish and Scottish ‘workers’ have completed. Compared to school-leavers in ‘programmes, schemes and training’, apprentices are on average almost two years younger in France (and one VTLMT level ‘less educated’), one-and-a-half years younger in the Netherlands (and half a level lower; but the percentage of school-leavers in schemes is negligible in the Netherlands), roughly the same age (and level) in Scotland and almost a year older in Ireland (and more than a level higher). Dutch apprentices were almost two years younger than their Scottish counterparts at the time of the survey. About half of this difference is a survey artefact, since most Dutch school-leavers were surveyed about one-and-a-half years after leaving school, while the Scottish were surveyed after 9 months. The age of apprentices varies much more in the Netherlands and France than in Ireland, and especially, Scotland.

### *Earnings*

Earnings are difficult to compare cross-nationally due to differences in the way the questions were phrased or understood. Moreover, the number of valid observations is much lower than for the other variables reviewed, especially for Ireland and the Netherlands. Our data (listed in the national currencies in Table 5) show that in Ireland and the Netherlands mean earnings for apprentices are around 70 per cent of the mean for ‘workers’, in Scotland around 60 per cent and in France around 45 per cent. Of course, because apprentices do not work full-time, they do not earn full-time salaries. Even considering this the income data for French apprentices seem questionable. Apprentices earn more than school-leavers in Youth programmes, Training and Employment schemes in all countries except France, where their mean earnings are substantially lower. However, it is difficult to estimate how well these findings reflect real ratios, most importantly because we do not know which values are missing.

In summary, the general quantitative overview of gender, age, type and level of education of apprentices in comparison to school-leavers in other ‘statuses’ is consistent with the position of apprenticeship programmes reviewed in the previous section. More precisely, in Ireland apprenticeship may be roughly classified as ‘post-secondary’ education and training (on average apprentices are not much younger than

those working or continuing in full-time education and they already have a comparatively high level of education). In the Netherlands, on the other hand, apprenticeship operates as a distinct type of upper-secondary education, which it formally is (apprentices have a much lower level of education and are much younger than 'normal workers'). French apprentices are close to Dutch apprentices in this respect, which is somewhat surprising given the fact that the French apprentices we included in our study are those who had left the secondary system for a certain period before entering an apprenticeship programme, not those who became apprentices immediately following lower-secondary education. On this dichotomy, Scotland seems closer to Ireland if differences between 'normal workers' and apprentices form the main criterion, but closer to the Netherlands and France if the average level of education of apprentices is used as the main basis for the classification. Concerning the first criterion it is important to stress that the characteristics of 'normal workers' in Scotland, and thus the comparison between this group and apprentices, would have changed if leavers from upper-secondary vocational courses at FE colleges had been included in the sample.

Concerning other 'principal activities', in Scotland 'Youth Programmes, Training and Employment Schemes' seem close to apprenticeship in terms of average age and highest stage of education (but not in terms of gender: the distribution is much more balanced here than for apprentices). In Ireland school-leavers in 'programmes' are on average much younger than those in other categories, and have a much lower level of education. In France school-leavers in programmes are somewhat younger than those working or unemployed, but almost two years older than apprentices, and on average a whole VTLMT level higher. In short, 'Youth Programmes, Training and Employment Schemes' seem to form a route parallel to apprenticeship in Scotland, differing in gender composition but not in terms of average age or level of education (apprentices may indeed be viewed as a specific type of 'Skillseeker'); a 'safety net' for lower level leavers in Ireland; and an extra step after full-time schooling (or apprenticeship) in France, for relatively highly educated youth who feel the need and have the chance to improve their 'labour marketability'. Since 'YP/T/ES' is a very heterogeneous category, its content varying highly from one country to the other (containing more training in Scotland than in France and particularly Ireland), it is doubtful whether it is useful to compare the differences between apprentices and school-leavers in this category cross-nationally.

## **5. Different routes to skills: a comparison of apprentices and others in specific occupational positions**

How do the overall comparisons of characteristics of apprentices versus school-leavers in ‘normal jobs’ and ‘programmes, training and schemes’ hold across specific occupational categories? And what are the alternative routes to ‘apprenticeship occupations’, within one country as well as cross-nationally?

Not unlike the Braun-Blanquet scale used in vegetation studies, Tables 6 and 7 provide a general overview of main routes, apprentices and a basic comparison between apprentices and ‘normal workers’ for each occupational category (main, 1-digit ISCO groups in Table 6, 3-digit groups in Table 7). With regard to the tables, we should note two things. First, for reasons of comparability the ‘total working population’ of which the percentage in each ISCO category is given in the tables (‘% in class’) consists only of those who had ‘apprenticeship’, ‘working for payment or profit’ or enrolment in ‘Youth programmes, Training and Employment schemes’ as their main activity at the time of the survey. Full-time students with part-time jobs have not been included in the comparison, since their ‘occupation’ is not their main activity, and – given the nature of ‘student jobs’ – many will eventually find (or look for) employment in a different occupational class and position. If all cases with an ISCO code in the database were simply included in the total, more than 30 per cent of the total for the Netherlands would consist of students with ‘student jobs’, against 13 per cent for Ireland and only 3 per cent for Scotland.<sup>10</sup> (For Ireland only one-third of those in ‘programmes and schemes’ have values for ISCO in the database, but the distortions this may create for comparison purposes are much smaller than would have been the case for Sweden, because in Ireland this category represents only 3 per cent of all school-leavers.) Secondly, one should not forget that the total ‘working population’ in our sample is a very particular one, as it consists solely of ‘entrants’, young people in an occupation about one year after leaving school.

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<sup>10</sup> Van der Velden & Wolbers (2000: 9) also point to the possible bias related to cross-country variation in the proportion of students that have a job. The inclusion of students with part-time jobs in analyses of youth employment, as in the ECLFS data set which follows ILO conventions, may lead to anomalous findings, e.g.: “[T]he expansion of the education system has a negative effect on the integration of young people into the labour market in the sense that a large educational participation is associated with a high rate of part-time employment” (Van der Velden & Wolbers, 2000: p.1).

The first column in these tables gives the percentage of the total working population (as described above) in each ISCO class. Cross-country differences in these proportions may reflect cross-national variations in the structure of labour markets – e.g. the Dutch labour market may simply count fewer ‘craft and related trades workers’ than Ireland – which we will not discuss here. In addition it may reflect differences more specifically related to the transition system: if in one country school-based secondary vocational tracks and apprenticeships lead directly to an occupational class which is ‘filled’ with third-level leavers in other countries or with people who enter that occupational class later in their labour-market career, the percentage of the working population in that ISCO class in our sample will be higher for that country than elsewhere. This is the case with ‘nursing and midwifery associate professionals’ (ISCO 323), which holds 6 per cent of the total ‘secondary school-leavers working population’ in the Netherlands (who have arrived there through apprenticeships as well as vocational upper-secondary routes), and 0 in the other three countries (Table 7).

The second column gives the share apprentices form of the total working population in the ISCO category. Here Table 6 gives a picture that roughly resembles Table 3 in the main apprenticeship categories, without of course being identical (Table 3 gives column percentages, Table 6 row percentages for apprentices). Irish apprentices form a significant share (46 per cent) of ‘craft and related trades workers’ only, while in the other three countries apprentices form sizeable proportions of more categories, although they are most strongly represented in ISCO 7 everywhere.

The third column presents the ‘main route’ to the occupational categories, the modal category. For apprenticeship and YP/T/ES the route is taken to be apprenticeship or YP/T/ES itself, for ‘normal workers’ the educational track left (academic, vocational or mixed) is given as the route. While for the 1-digit ISCO groups apprenticeship forms the main route only for ‘crafts’ in Scotland and France, the more refined 3-digit breakdown is more illuminating (Table 7). In Ireland apprenticeship programmes are the main route to 4 categories (all within ‘crafts’); for the other occupations listed most people in the job are ‘normal workers’ who left academic or mixed – and in one case vocational - secondary tracks, and most likely receive on the job training. In the Netherlands apprenticeship is the modal route for three categories of builders and painters only, despite the fact that apprentices are found in a much broader array of occupations. Vocational secondary education

(mostly MBO) is the main route to all other groups in the table (only occupational categories with more than 5 per cent of all apprentices in at least one of the countries are listed<sup>11</sup>). In Scotland apprenticeship forms the main route to most of the categories in which apprentices are found, with three categories having a proportion of 80 per cent or more. Apprenticeship thus forms an almost exclusive route to occupations in the building, metal and electrical industry in Scotland. Ireland and France each count only one category to which apprenticeship is not just the main route but in practice the single ‘highway’ (723 and 720), while there are none in the Netherlands, where apprentices form around 40 per cent of most categories. In both France and the Netherlands vocational secondary education forms the main route to all occupations where apprentices are not predominant. Although we only listed occupations ‘with apprentices somewhere’, there is only one occupational category for which apprenticeship is the typical track in all four countries (ISCO 713: ‘building finishers and related trade workers’). This coincides with our initial assumption that transition systems vary significantly in the way they produce skills, even in four Western European countries with apprenticeship schemes but without a ‘German-type system’.

As discussed in the previous section, apprentices within one category are either predominantly female or overwhelmingly male (Table 7, fourth column): there are no categories with a male-female proportion less unbalanced than 67-33.

Returning to the comparison between apprentices and ‘normal workers’, we see in the last four columns of Table 7 (in Table 6 one would often compare ‘normal workers’ and apprentices in different specific occupations, because apprentices and others are not distributed over subcategories within the main ISCO classes in the same way) that the general differences between the two groups discussed above also tend to hold within specific occupational categories: apprentices earn less; apprentices did not follow academic tracks more than others except for French apprentices (who mostly left undifferentiated lower secondary); apprentices have a lower level of education in France and the Netherlands, but not in Ireland and Scotland; and French and Dutch apprentices are significantly younger than ‘normal workers’ in all occupational categories, while Irish and Scottish apprentices are not. The distinction between the Netherlands and France on the one hand and Ireland and Scotland on the other

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<sup>11</sup> ISCO category 512 (‘housekeeping and restaurant service workers’) has been excluded, as the category proved too ambiguous.

appears even clearer now, because the differences between ‘normal workers’ and apprentices in Ireland and Scotland on level of education and age are smaller in the comparison by occupational group than they are in general. For some ISCO classes the small differences remain significant, for others they become insignificant (which, of course, also has to do with the small number of cases), while for some Table 7 shows differences opposed to the general comparison (although these are always insignificant). Of course the general differences discussed earlier are interesting in their own right, not least because these differences, especially on level of education, are likely to affect the distribution across ISCO categories.

## **6. Conclusion**

Apprenticeship programmes in France, Ireland, the Netherlands and Scotland differ significantly in their role and position within the national transition systems. In a rough dichotomy, apprenticeship programmes form an alternative to school-based vocational education in France and the Netherlands, and a type of post-school vocational training in Ireland and Scotland. Since France and especially the Netherlands have rather differentiated school-based vocational tracks in comparison with Ireland and Scotland, the need or the functional space for apprenticeships and other training programmes seems more limited in the former two countries than in the latter. Especially in the Netherlands - where vocational upper-secondary schooling is highly occupation- and skill-specific, has comparatively strong linkages to the labour market and includes work-placement - there seems to be no specific ‘skill producing’ function for apprenticeship programmes. Given the high status of MBO education, apprenticeship may be said to be ‘vertically differentiated’ from school-based vocational education. In Ireland and Scotland, on the other side, most youngsters leave secondary school without specific occupational skills. Those who do not continue into third-level education thus have to acquire these skills after leaving, in training schemes, apprenticeships or solely on the job.

Considering these differences, as well as the variation in the range of occupations and sectors at which apprenticeship programmes are aimed (largely limited to ‘skilled manual occupations’ in Ireland; extended to a broad array of jobs in France and especially the Netherlands), the percentage of school-leavers in our sample in an apprenticeship programme is surprisingly close to 10 per cent in all four

countries, if we correct the French figure for the fact that full-time third-level students were not included in the sample. We have mentioned the possibility that French and Dutch apprenticeship programmes may mainly attract students that are ‘tired’ of the classroom or not bright enough for full-time upper-secondary but have to remain in the educational system because they have not yet reached the upper age limit of (partial) compulsory education. We cannot test this with our data, but the background information and the comparisons we have made seem to point in this direction.

Comparing characteristics of apprentices, ‘normal workers’ and people in employment schemes, training, and youth programmes, we found that apprentices differ substantially and significantly from ‘normal workers’ in France and the Netherlands: they are much younger and have a much lower level of education. In France apprentices also have a more ‘general’ secondary educational background (since most of them left at an undifferentiated stage). In Ireland and Scotland on the other hand, these differences are significant but small if the two groups are compared in general, and absent or non-significant if the groups are compared within specific occupational classes. This confirms the post-school-training character of apprenticeships in Ireland and Scotland, and the post-lower-secondary position of apprenticeships in France and the Netherlands.

Finally, comparing different routes to specific occupations in the four countries, we found only one category (‘building finishers’) where the main route was the same – apprenticeship – for France, Ireland, the Netherlands and Scotland. In Scotland and Ireland some occupations are predominantly ‘filled’ with apprentices, in the Netherlands and France apprenticeships lead to a broader spectrum of jobs, but rarely form the single typical track. In Ireland and Scotland the apprenticeship system is thus more specific, meaning narrower as well as more exclusive. In France and the Netherlands vocational secondary education is the main route to the occupations we have studied in more detail – occupations with a sizeable group of apprentices in at least one of the four countries – in Ireland and Scotland the secondary routes are much more academic.

Indeed, transition systems vary significantly in the way they produce specific skills for certain occupations, and the role and position of apprenticeships does not vary less, even in four Western European countries with modest apprenticeship programmes.

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Table 1: Principal Activity of School-Leavers at the Time of the Survey

	Ireland	Netherlands	Scotland	France	Sweden
Working for payment or profit	37.3	42.3	21.1	30.3	22.7
<b>Apprenticeship</b>	<b>8.2</b>	<b>12.0</b>	<b>12.6</b>	<b>14.4</b>	
Youth programmes, Training, Employment schemes	3.0	0.8	11.7	18.7	12.1
Unemployed	9.2	2.2	8.5	20.7	5.6
Student	40.2	41.9	43.9	1.9	33.4
National service				10.9	
Other	2.1	0.8	2.2	3.1	26.2
Total	100.0	100.0	100.0	100.0	100.0
N	2654	10731	3192	3502	6406

Table 2: Occupational Class (EGP) by Principal Activity at the Time of the Survey

	<b>Ireland</b>		<b>Netherlands</b>		<b>Scotland</b>			<b>France</b>		
	Working	<b>Appr</b>	Working	<b>Appr</b>	Working	<b>Appr</b>	<i>YPTES</i>	Working	<b>Appr</b>	<i>YPTES</i>
I - Upper service class	0.3	<b>0.5</b>	0.3		0.9	<b>1.5</b>				
II - Lower service class	5.7	<b>1.4</b>	17.5	<b>4.4</b>	2.9	<b>2.8</b>	<i>1.9</i>	2.6	<b>4.4</b>	6.3
IIIa – Upper routine non-manual	18.3	<b>1.4</b>	31.0	<b>14.6</b>	29.3	<b>11.8</b>	<i>33.5</i>	*37.2	<b>*24.7</b>	40.2
IIIb – Lower routine non-manual	27.3	<b>4.2</b>	12.3	<b>18.6</b>	20.2	<b>4.8</b>	<i>20.2</i>	*	*	
IVa – Small proprietors	0.5	<b>0.5</b>	0.5					*0.5		
IVb - Self-employed	1.3	<b>0.5</b>	0.6					*		
IVc – Farmers	0.2		2.2	<b>0.1</b>	0.4			0.2	<b>0.2</b>	
V - Lower tech./manual supervisory	1.5	<b>0.5</b>	5.6	<b>3.3</b>	1.3		<i>1.2</i>	4.4	<b>0.6</b>	3.6
VI – Skilled manual workers	22.6	<b>88.9</b>	13.0	<b>33.7</b>	13.1	<b>64.5</b>	<i>24.2</i>	23.0	<b>21.5</b>	27.3
VIIa – Semi-/unskilled manual w.	18.2	<b>1.4</b>	11.8	<b>19.4</b>	27.7	<b>14.0</b>	<i>14.0</i>	29.5	<b>47.1</b>	21.6
VIIb – Agricultural workers	3.9	<b>0.9</b>	5.3	<b>5.9</b>	4.3	<b>0.8</b>	<i>4.7</i>	2.7	<b>1.4</b>	1.1
Total	100.0	<b>100.0</b>	100.0	<b>100.0</b>	100.0	<b>100.0</b>	<i>100.0</i>	100	<b>100.0</b>	100.0
N	981	<b>216</b>	3220	<b>1034</b>	559	<b>400</b>	<i>360</i>	1057	<b>497</b>	496

\*France: IIIa/IIIb = III; IVa/IVb = Ivab (no distinction)

YPTES: Youth programmes, Training, Employment schemes

Table 3: Occupational Position (ISCO) of Apprentices

	Ireland	Netherlands	Scotland	France
<b>1 – Legislators, senior officials and managers</b>	<b>1.4</b>	<b>0.2</b>	<b>1.2</b>	
<b>2 – Professionals</b>	<b>1.4</b>	<b>0.1</b>	<b>2.7</b>	<b>0.2</b>
<b>3 – Technicians and associate professionals</b>	<b>1.8</b>	<b>16.6</b>	<b>4.0</b>	<b>4.8</b>
32 - Life science and health associate professionals		13.0	0.2	4.0
323 – nursing and midwifery associate professionals		10.4		
<b>4 – Clerks</b>		<b>4.0</b>	<b>11.2</b>	<b>3.4</b>
41 – Office clerks		2.7	10.5	2.8
419 – other office clerks		0.3	5.2	0.4
<b>5 – Service workers and market sales workers</b>	<b>14.7</b>	<b>22.5</b>	<b>18.7</b>	<b>33.0</b>
51 – Personal and protective services workers	12.8	11.3	17.0	20.5
512 – housekeeping and restaurant service workers	3.7	3.4	3.0	9.8
513 – personal care and related workers		7.2	2.2	0.8
514 – other personal service workers	9.2	0.6	11.7	10.0
52 – Models, salespersons and demonstrators	1.8	11.2	1.7	12.4
522 – shop, stall and market salespersons and demonstrators	1.8	11.2	1.7	12.4
<b>6 - Skilled agricultural and fishery workers</b>		<b>5.1</b>	<b>2.0</b>	<b>2.8</b>
61 – Skilled agricultural and fishery workers		5.1	2.0	2.8
<b>7 - Craft and related trades workers</b>	<b>77.1</b>	<b>33.5</b>	<b>55.2</b>	<b>46.7</b>
71 – Extraction and building trades workers	16.5	17.5	28.4	20.1
712 – building frame and related trades workers	2.8	9.2	14.4	6.4
713 – building finishers and related trades workers	11.5	4.7	9.0	13.2
714 – painters, building structure cleaners and related tr.w.	1.8	3.6	5.0	0.6
72 – Metal, machinery and related trades workers	34.4	11.5	22.2	14.5
720 – metal, machinery and related trades workers				9.8
721 – metal moulders, welders, sheet-metal workers etc.	6.9	2.1	4.0	1.0
723 – machinery mechanics and fitters	13.3	4.7	11.4	2.6
724 – electrical and electronic equipment mechanics and fitters	14.2	4.0	5.5	0.8
73 – Precision, handicraft, craft printing and related tr.w.	5.0	0.6	2.2	0.2
74 – Other craft and related trades workers	21.1	3.8	2.5	11.0
741 - food processing and related trades workers		3.5	1.7	11.0
742 – wood treaters, cabinet-makers and related trades workers	20.2	0.1	0.2	
<b>8 - Plant and machine operators and assemblers</b>	<b>1.4</b>	<b>7.4</b>	<b>3.0</b>	<b>8.0</b>
82 – Machine operators and assemblers	1.4	3.5	1.7	6.6
83 – Drivers and mobile plant operators		3.3	1.0	0.4
<b>9 – Elementary occupations</b>	<b>2.3</b>	<b>10.7</b>	<b>2.0</b>	<b>1.0</b>
91 - Sales and services elementary occupations		6.5	0.5	0.8
913 – domestic and related helpers, cleaners and launderers		6.2		0.8
93 – labourers in mining, construction, manufacturing and trade	1.4	3.8	1.0	0.2
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>N</b>	<b>218</b>	<b>1164</b>	<b>402</b>	<b>497</b>

(shown: all 1 digit groups,

2 digit groups with  $\geq 3.0\%$  in at least one country,

3 digit groups with  $\geq 5.0\%$  in at least one country)

Table 4: Highest Educational Stage (VTLMT) by Principal Activity at the Time of the Survey

	<b>Principal activity: time of survey</b>							
<b>Ireland</b>	<b>Working</b>	<b>Appr.</b>	<b>YPTES</b>	<b>Unempl.</b>	<b>Student</b>	<b>Nat. ser.</b>	<b>Other</b>	<b>Total</b>
Inc. lower s.	5.1	2.3	36.7	18.3	0.2		17.5	5.3
Failed lower	5.3	9.2	6.3	6.2	0.6		10.5	3.9
Passed lower	16.1	26.1	17.7	22.0	1.8		31.6	12.1
Failed upper	11.8	8.7	5.1	10.4	5.1		5.3	8.3
Passed upper	61.8	53.7	34.2	43.2	92.4		35.1	70.4
	100.0	100.0	100.0	100.0	100.0		100.0	100.0
N	986	218	79	241	1067		57	2648
<b>Netherlands</b>								
Inc. lower s.	2.6	5.9		11.3	0.9		7.1	2.5
Failed lower	3.4	8.5		1.3	1.4			3.1
Passed lower	26.2	53.4	44.3	40.8	7.1		37.6	22.1
Failed upper	10.6	6.0	19.3	16.7	6.7		15.3	8.7
Passed upper	57.1	26.2	36.4	30.0	83.9		40.0	63.7
	100.0	100.0	100.0	100.0	100.0		100.0	100.0
N	4535	1292	88	240	4493		85	10733
<b>Scotland</b>								
Failed lower	19.6	24.5	31.5	53.3	3.5		27.9	17.6
Passed lower	25.4	37.9	35.7	18.8	8.5		17.6	20.0
Failed upper	20.1	20.8	22.1	12.9	12.5		14.7	16.3
Passed upper	34.9	16.8	10.7	15.1	75.5		39.7	46.0
	100.0	100.0	100.0	100.0	100.0		100.0	100.0
N	673	404	375	272	1401		68	3193
<b>France</b>								
Inc. lower s.	0.9	19.1	3.9	3.9	5.6	0.5	3.7	4.8
Failed lower	11.9	29.1	16.0	22.5	13.0	17.4	40.4	18.9
Passed lower	8.0	13.9	12.2	6.6	22.2	8.2	9.2	9.6
Failed upper	3.4	3.8	4.5	6.2	7.4	5.3	8.3	4.7
Passed upper	75.8	34.1	63.4	60.8	51.9	68.6	38.5	62.1
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	1055	498	648	715	54	379	109	3458

Table 5: Gender, Age, Level of Education (VTLMT), Type of Programme and Earnings by Principal Activity at the Time of the Survey

	Principal activity: time of survey																				
	Working			Apprenticeship			Unemployed			Student			National service			Other					
	Mean	N	Std D	Mean	N	Std D	Mean	N	Std D	Mean	N	Std D	Mean	N	Std D	Mean	N	Std D	Mean	N	Std D
<b>Ireland</b>																					
Gender	0.51	989	0.50	0.13	217	0.34	0.39	80	0.49	0.47	243	0.50	0.55	1068	0.50				0.64	57	0.49
Age at time of interview	19.01	989	1.33	18.57	217	1.08	17.85	80	1.67	18.43	243	1.42	19.14	1068	0.85				18.72	57	1.55
Highest stage: VTLMT	4.20	986	1.19	4.03	217	1.17	2.95	80	1.73	3.53	241	1.53	4.89	1067	0.44				3.29	57	1.49
Type of programme	1.51	930	0.50	1.49	207	0.50	1.64	73	0.48	1.57	226	0.50	1.87	1023	0.34				1.66	50	0.48
EARN	154	545	58	110	95	42	99	12	61	72	5	60	55	134	37					0	
<b>Netherlands</b>																					
Gender	0.49	4533	0.50	0.38	1292	0.49	0.59	88	0.49	0.57	239	0.50	0.50	4489	0.50				0.46	85	0.50
Age at time of interview	20.66	4504	1.90	18.92	1285	1.63	20.27	88	1.30	20.40	236	1.90	19.60	4451	1.37				19.34	82	1.90
Highest stage: VTLMT	4.16	4534	1.08	3.38	1292	1.13	3.92	88	0.90	3.53	239	1.25	4.71	4493	0.73				3.80	85	1.19
Type of programme	1.09	4534	0.28	1.14	1292	0.35	1.09	88	0.29	1.07	239	0.26	1.68	4493	0.47				1.35	85	0.48
EARN	1990	3037	961	1405	860	1022	1155	72	401	997	19	482	480	1744	808				1216	11	752
<b>Scotland</b>																					
Gender	0.54	672	0.50	0.28	403	0.45	0.45	375	0.50	0.47	272	0.50	0.52	1401	0.50				0.73	69	0.45
Age at time of interview	17.35	672	0.82	16.96	403	0.73	16.88	375	0.75	16.90	272	0.78	17.82	1401	0.76				17.40	69	0.83
Highest stage: VTLMT	3.70	672	1.14	3.30	403	1.02	3.12	375	0.98	2.89	272	1.12	4.60	1401	0.79				3.67	69	1.26
Type of programme	1.84	672	0.37	1.79	403	0.41	1.81	375	0.39	1.88	272	0.32	1.90	1401	0.29				1.95	69	0.21
EARN	107	509	36	64	371	29	51	353	26	83	47	49	112	35	42				97	9	41
<b>France</b>																					
Gender	0.55	1061	0.50	0.34	503	0.48	0.62	656	0.49	0.60	725	0.49	0.60	65	0.49	0.02	383	0.15	0.73	109	0.45
Age at time of interview	20.56	1061	1.38	18.30	503	1.67	20.15	656	1.60	20.28	725	1.62	19.67	65	1.70	20.43	383	1.33	19.91	109	1.40
Highest stage: VTLMT	4.41	1056	1.11	3.05	498	1.57	4.07	648	1.32	3.97	715	1.39	3.87	55	1.35	4.24	379	1.20	3.37	109	1.43
Type of programme	1.19	1061	0.40	1.49	503	0.50	1.27	656	0.44	1.22	723	0.41	1.50	65	0.50	1.17	383	0.37	1.20	109	0.40
EARN	4594	746	1955	2040	440	1134	3203	386	1412		0		0	0		0				0	

Gender: 0=male, 1=female.

Highest stage: see Table 4

Type of programme: 1=vocational, 2=general/academic

EARN: earning in local currency (see text)

Table 6: Share of apprentices within main occupational categories (ISCO), main route, characteristics of apprentices relative to workers

Occupation: ISCO-88 eq. 1 digit	% in class				% apprentices				main route				Gender				apprentices compared to 'normal workers'															
																	younger				lower vtlmt				more a2				earn less			
	I	N	S	F	I	N	S	F	I	N	S	F	I	N	S	F	I	N	S	F	I	N	S	F	I	N	S	F	I	N	S	F
3 – Technicians and associate professionals	3	20	6	6	12	18	22	19	2	v2	a2	v2		F	MF	F		<b>x</b>	<b>x</b>	<b>x</b>		<b>x</b>	<b>x</b>	<b>x</b>		<b>x</b>	0	x		<b>x</b>	<b>x</b>	<b>x</b>
4 – Clerks	15	13	25	16	0	7	14	5	2	v2	a2	v2		F	F	FM		<b>x</b>	<b>x</b>	<b>x</b>		<b>x</b>	<b>x</b>	<b>x</b>		x	0	x		<b>x</b>	<b>x</b>	<b>x</b>
5 – Service workers and market sales workers	29	24	21	27	9	21	26	30	2	v2	a2	v2	F	F	F	F	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>0</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
6 - Skilled agricultural and fishery workers	0	6	3	2	0	20	21	31		v2	a2	v2		M	M	M		<b>x</b>	<b>x</b>	<b>x</b>		<b>x</b>	<b>x</b>	<b>x</b>		0	x	x		<b>x</b>	<b>x</b>	<b>x</b>
7 - Craft and related trades workers	30	17	28	26	46	43	61	43	2	v2	A	A	M	M	M	M	x	<b>x</b>	<b>x</b>	<b>x</b>	0	<b>x</b>	0	<b>x</b>	0	<b>x</b>	<b>0</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>	<b>x</b>
8 - Plant and machine operators and assemblers	6	8	6	13	4	19	15	15	2	v2	a2	v2		M	M	M		<b>x</b>	0	<b>x</b>		<b>x</b>	<b>x</b>	<b>x</b>		0	0	<b>x</b>		<b>x</b>	<b>x</b>	<b>x</b>
9 – Elementary occupations	13	9	9	9	3	26	7	3	2	v2	a2	v2		M	M			<b>x</b>	0			<b>x</b>	0			x	0			<b>x</b>	<b>x</b>	

**% in class:** % in the ISCO category of all having 'working for payment or profit', 'apprentice' or 'Youth programmes, Training, Employment Schemes' as principal activity at the time of the survey ('column %')

**% apprentices:** % apprentices form of 'all' in the ISCO category ('row %')

**main route:** modal category for 'all' in the ISCO category;

A: apprenticeship

v2: vocational secondary (>66% vocational)

a2: academic/general secondary (>66% academic/general)

2: mixed secondary

(Youth programmes, Training, Employment Schemes do not appear anywhere as main route)

**gender:** gender of apprentices

M: >66% male

F: >66% female

MF, FM: mixed

**Apprentices compared to 'normal workers':** relates to statement in column heading ('normal workers' are 'working for payment or profit')

x: statement is true for apprentices as compared to workers in the ISCO category

0: statement is not true (no difference or opposite)

**bold x or 0** indicates significant (p<.05) difference

