



Role of Apprenticeships in Combating Youth Unemployment in Europe and the United States

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Five years since the global economic crisis began in 2008, many of the world's advanced economies are still struggling with sluggish growth and high levels of joblessness, especially among younger workers. In June 2013 the European Council expressed concern that "youth unemployment has reached unprecedented levels in several Member States" and called for "urgent action."¹ Much of the debate in Europe and the United States has focused on fiscal and monetary measures; while macroeconomic policy can address cyclical problems, a wide consensus recognizes the need to address structural challenges. One such challenge is a mismatch between the skills demanded by employers and those

available among the population, especially younger workers. This mismatch can be addressed in part through the implementation of apprenticeship programs. The European Council recently concluded that "high quality apprenticeships and work-based learning will be promoted, notably through the European Alliance for Apprenticeships."² However, in the United States, where many are struggling to find jobs after graduating, apprenticeship programs hardly draw government and private-sector resources. Boosting apprenticeships could give both European and US workers the much-needed skills and competitive edge.

Germany, Austria, and Switzerland, three countries with low youth unemployment, offer valuable policy lessons in apprenticeship education. An expansion of vocational training through apprenticeships in advanced economies with high youth unemployment would have several benefits. First, it would increase the chances of employment for students who do not pursue a university degree. Second, it would provide the private sector with a skilled and competitive labor force. Third, a greater emphasis on apprenticeships would be more affordable for the state since the cost of running apprenticeship programs is shared with private enterprises.

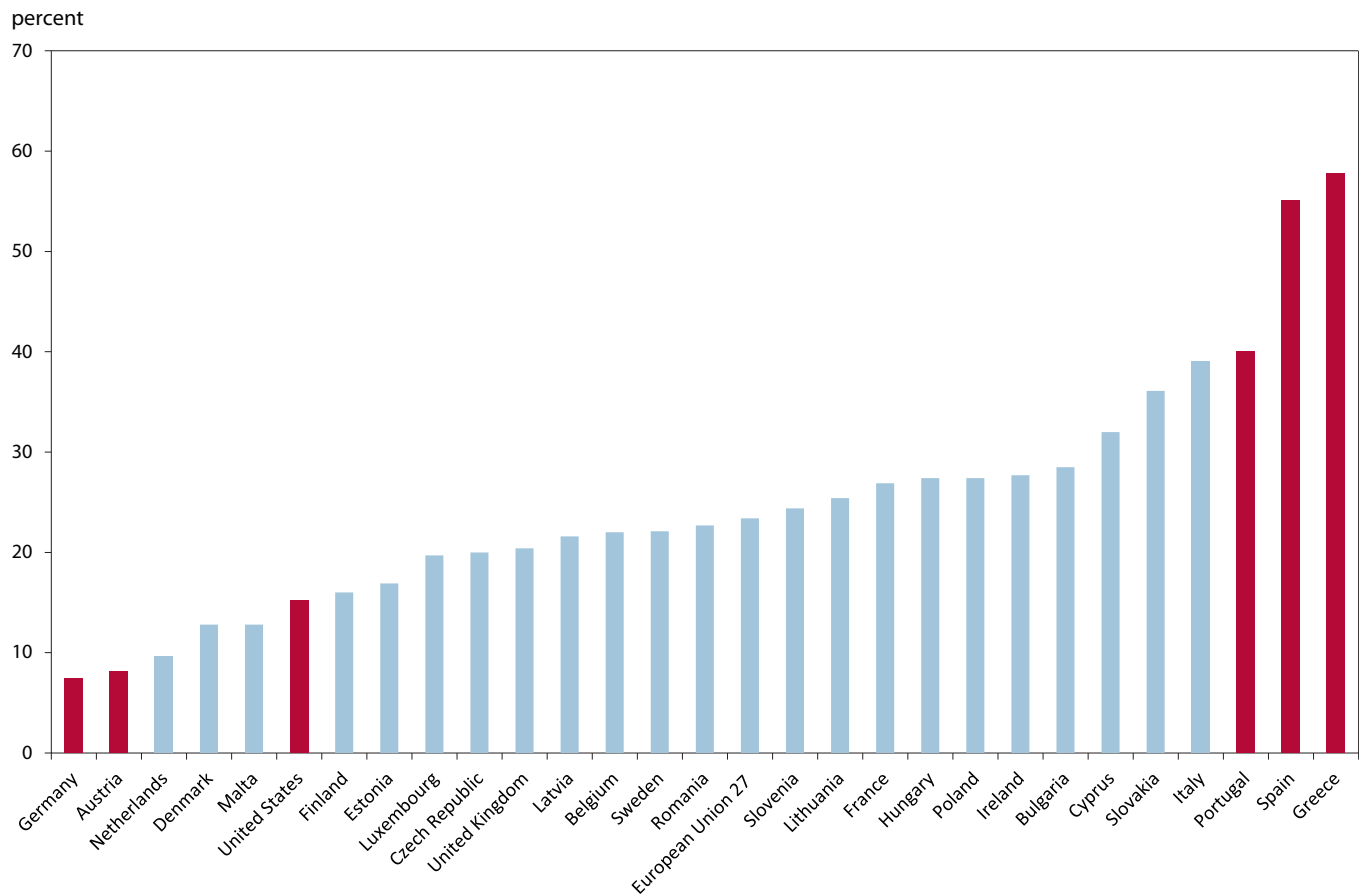
Boosting apprenticeships could give both European and US workers the much- needed skills and competitive edge.

To implement successful apprenticeship programs, governments should pass legislation to create nationally recognized apprenticeship-completion certificates as well as regulate apprenticeship content to ensure quality and transferability of skills. Apprentices should be given a stipend (typically one-third to one-half of the wage of a regular employee in that sector) and other benefits such as health insurance. Minimum wage laws must therefore be revised to exclude apprenticeships. Critical to the success of apprenticeships is participation of labor unions and private businesses. To attract firms they must be given considerable autonomy in developing the on-the-job training

1. European Council, *Conclusions*, June 28, 2013, Brussels, <http://register.consilium.europa.eu/pdf/en/13/st00/st00104-re02.en13.pdf>.

2. *Ibid.*

Figure 1 Youth unemployment rates (ages 15 to 24), 2012Q4



Source: Eurostat Statistical Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed on May 28, 2013); author's calculations.

components of apprenticeships. If necessary, firms can also be offered tax incentives and training subsidies.

This Policy Brief addresses only formal apprenticeships in advanced economies. Other countries, especially in the developing world, maintain systems of informal apprenticeships that resemble medieval European apprentice systems and are often susceptible to abuse (ILO 2012).

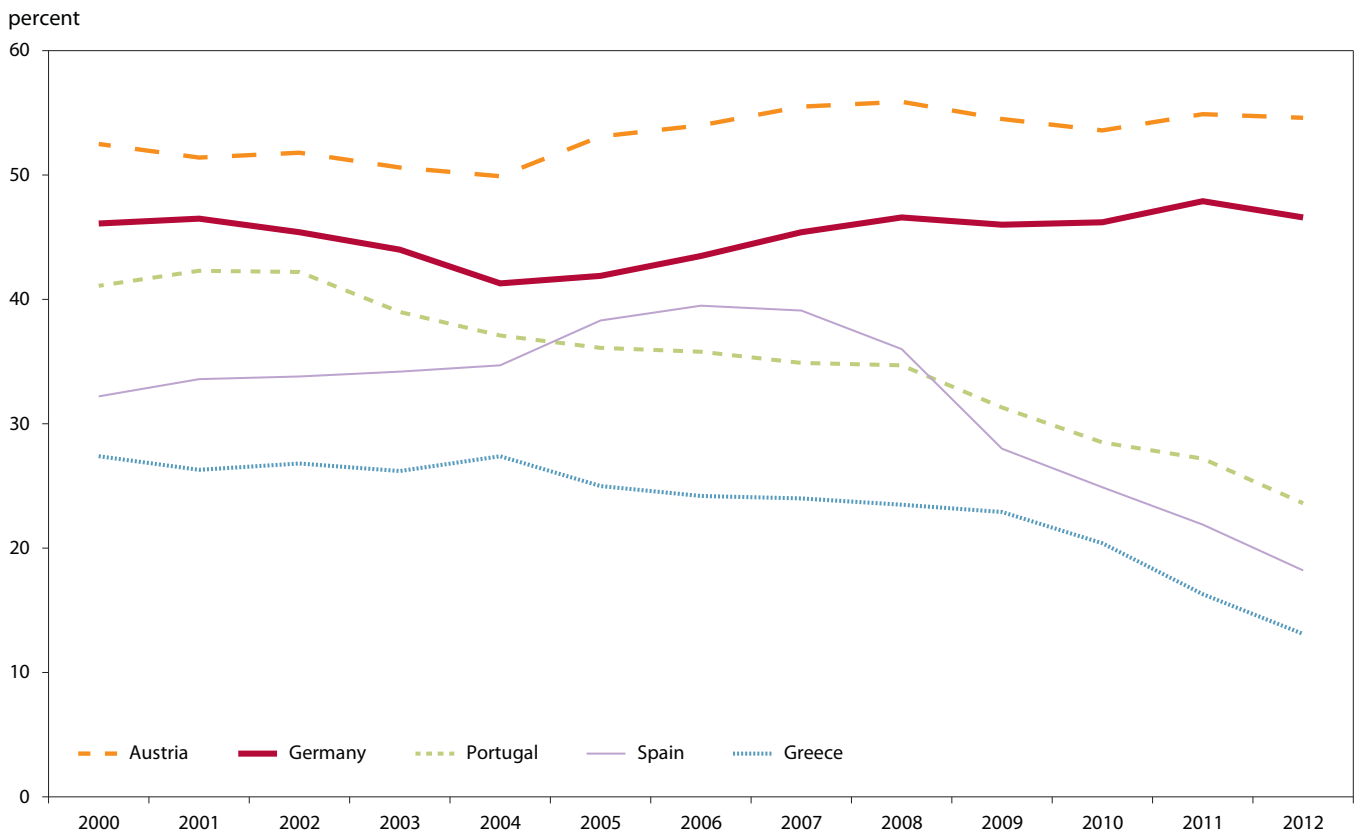
THE PROBLEM: HIGH YOUTH UNEMPLOYMENT AND SKILLS MISMATCH

Youth unemployment is high in several advanced economies (figure 1). At the end of 2012, Greece had the highest rate at 57.8 percent, followed closely by Spain at 55.1 percent and Portugal at 40 percent. While better than most EU countries, youth unemployment in the United States, at 15.2 percent, is still high. By contrast, Germany and Austria have some of the

lowest rates in Europe at 7.4 and 8.1 percent, respectively. Some have suggested that these high rates are overstated because they do not take into account low labor force participation among the young.³ The youth unemployment rate is derived by dividing the number of youth who are unemployed by the number of youth who are in the labor force, which is to say actively seeking jobs.⁴ Since youth often put off entering the labor force until completing their education, the overall ratio appears artificially inflated. While this criticism may be true, younger workers in many advanced economies, nevertheless, face a difficult labor market and are at a considerable disadvantage compared with their German and Austrian counterparts. The Organization for Economic Cooperation and Development (OECD) computes

3. Daniel Gros, "Europe's Youth Unemployment Non-Problem," *Project Syndicate*, June 6, 2013.

4. European Commission, "Youth Unemployment," http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Youth_unemployment.

Figure 2 Youth employment rates (ages 15 to 24), 2000–2012

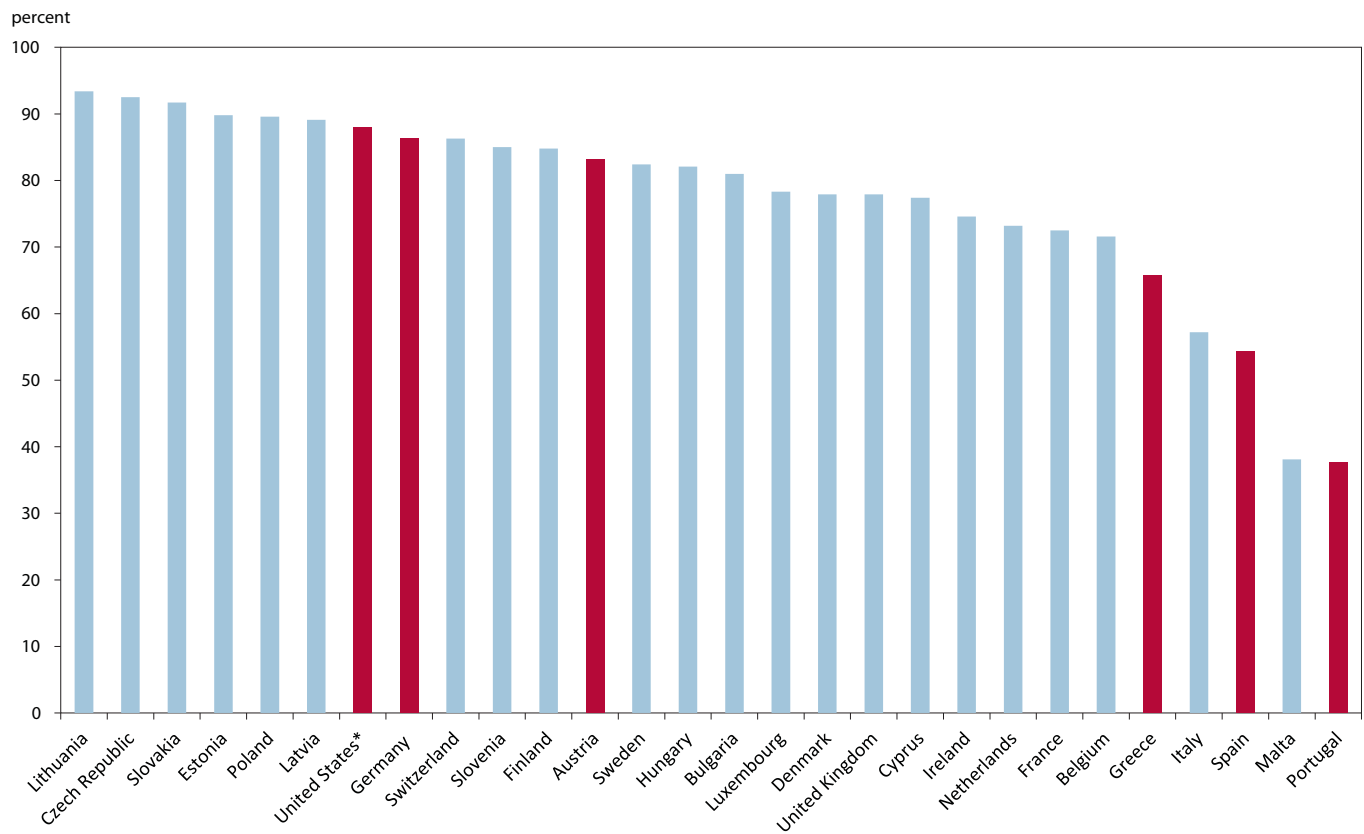
Source: Eurostat Statistical Database, <http://epp.eurostat.ec.europa.eu> (accessed on July 2, 2013).

the share of 15- to 29-year-olds who are not in employment, education, or training (NEETs). In Austria and Germany the share of youth in this category is 10 and 11 percent, respectively. By contrast, in Portugal and the United States, between 15 and 16 percent of youth are NEETs. In Greece and Spain the figures are 22 and 24 percent, respectively (OECD 2013).

Part of the reason for high unemployment, both among youth and adults, is a mismatch between the skills they possess and those sought by employers. While the recent crisis resulted in low growth and high unemployment, a significant skills shortage is further deteriorating competitiveness. The Council of the European Union (2013) asserts that “skill mismatch in the EU is increasing” and that “one out of three European employees is either over- or under-qualified, with the mismatch especially high in Mediterranean countries.” Such mismatches are a serious structural component of unemployment in Europe. The Beveridge curve, a graphical representation of the relationship between job vacancies and unemployment, offers supporting evidence. A rightward shift in the Beveridge curve suggests an increase in structural unemployment. Indeed,

the curve has recently shifted rightward in several countries, including the United States, Spain, and Portugal (Hobijn and Sahin 2012). In Germany, on the other hand, the Beveridge curve has shifted leftward, suggesting a decrease in structural unemployment (European Commission 2011).

Figure 2 shows the employment rate for 15- to 24-year-olds in five EU countries since 2000. The youth employment rate is the percentage of youth employed out of the total age group. This distinguishes the measure from the unemployment rate, which considers only individuals in the labor force. Youth employment has nose-dived in Spain, Portugal, and Greece since the onset of the financial crisis in 2008, but the rates in all three countries had been far below those in Germany and Austria well before the crisis began. Portugal’s youth employment rate peaked in 2002 at 42 percent and has declined every year since. In Greece it has remained below 30 percent for more than a decade. This is an important problem because extended periods of youth unemployment leave a particularly damaging “wage scar,” in terms of deteriorating skills and decreased lifetime earnings. Studies find that even 20 years after such a

Figure 3 People with upper secondary or tertiary education (ages 25 to 64), 2012

* = Data are from 2011.

Sources: Eurostat Statistical Database, <http://epp.eurostat.ec.europa.eu> (accessed on April 26, 2013); National Center for Education Statistics, *Digest of Education Statistics*, Table 8, http://nces.ed.gov/programs/digest/d11/tables/dt11_008.asp (accessed on April 30, 2013).

period, individuals can experience a wage scar of 9 to 11 percent (Gregg and Tominey 2005, Kahn 2010).

Data on educational attainment also reveal a skills shortage. Figure 3 shows the percentage of 25- to 64-year-olds who have attained upper secondary or tertiary education. (Upper secondary education is approximately equivalent to a high school education in the United States.)⁵ Portugal's low education rate is truly shocking at 38 percent. Spain and Greece are also subpar with rates of 54 and 66 percent, respectively. By contrast, Germany has a rate of 86 percent and the newer EU members lead the pack. The United States performs well with a high school education rate of 88 percent.⁶ These

statistics highlight a general skills shortage in the labor force in southern Europe. Less educated workers may struggle to compete in the global labor market that increasingly demands more advanced skills.

Despite its good performance on educational attainment, the United States also shows symptoms of a skills mismatch. A 2011 survey of American manufacturers conducted by Deloitte Consulting showed that 600,000 manufacturing jobs were unfilled because companies could not find workers with the right skills.⁷ Siemens chief Eric Spiegel complained that his company could not find workers with the correct skills and blamed a weak US education and training system.⁸ At a time of historically high unemployment in the United States, 3.8

5. National Center for Education Statistics, *Education Indicators: An International Perspective, Indicator 3: Secondary Education Enrollment*, <http://nces.ed.gov/pubspubs/eiip/eiip3s01.asp>.

6. National Center for Education Statistics, *Digest of Education Statistics*, Table 8, http://nces.ed.gov/programs/digest/d11/tables/dt11_008.asp (accessed on June 17, 2013).

7. Thomas A. Hemphill and Mark J. Perry, "U.S. Manufacturing and the Skills Crisis," *Wall Street Journal*, February 27, 2012, <http://online.wsj.com/article/SB10001424052970204880404577230870671588412.html>.

8. "Siemens Chief Warns on US Skills Shortage," *Financial Times*, June 20, 2011.

million job openings remain unfilled, according to the Bureau of Labor Statistics,⁹ while approximately 11.8 million people are unemployed, suggesting a mismatch between the supply of labor and the demand for skills.

In Spain, the risk of unemployment is two times higher for low-skilled youth (those who have not obtained an upper secondary education) than for their high-skilled counterparts. In the United States, the difference is even more dramatic, with low-skilled youth being 4.5 times more likely to be unemployed than someone with at least a high school education (OECD 2010). To combat high youth unemployment, an education policy that delivers marketable skills is vital.

PART OF THE SOLUTION: APPRENTICESHIPS

One way of addressing structural unemployment is to help workers acquire the skills that employers need most. To encourage skill-based economic growth, advanced economies must ensure that youth who do not choose to pursue a university degree can acquire marketable skills. These skills will not only increase the likelihood of lifetime employment but also encourage productivity growth in the economy. Apprenticeships have proven to be successful in imparting these necessary skills to individuals. Several studies show that in the United Kingdom, the completion of an apprenticeship significantly increased an individual's chances of employment (Institute for Employment Research 2012). One such study by Steven McIntosh (2007) found that British workers who completed apprenticeships could expect both higher wages and a greater chance of being employed. He looked at youth below 26 years of age and found that that "a recognized apprenticeship is associated with a 15 percentage points higher probability of employment amongst young men (17 percentage points amongst young women)." Similarly, both genders could expect wage increases after completion of an apprenticeship, though the gains were far less equal. "Men under 26 who have completed a recognized apprenticeship earn on average 23% more than similar men..." while for women who completed an apprenticeship the observed wage increase was 8 percent.

Germany and Austria, two countries with long-standing and well-developed apprenticeship programs, have been successful in educating and employing their youth largely because of their "dual" education system. Students pursuing vocational training participate in apprenticeships, which consists of (1) on-the-job training provided by firms and (2) classroom instruction

imparted in vocational schools. Apprentices typically spend one or two days a week in a vocational school where they are taught based on a federally agreed program of both general and occupation-specific instruction. The rest of the workweek is spent on the job, in a training program designed by the specific firm in collaboration with education authorities, sector employers, and employee organizations. Apprenticeships last two to four years, depending on the profession, and are followed by a final examination. In Germany, 59 percent of apprentices are then employed by the firm that trained them. Apprenticeships are offered in over 300 occupations, of which 60 percent are in the service sector and 40 percent are in industrial production (Steedman 2010).

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Countries such as Austria and Germany target young people under the age of 25 for their apprenticeships (ILO 2012). According to the OECD (2010), in 2008 the largest share of youth jobs (23 percent) in the OECD area were in the wholesale and retail trade sectors. The two other large employers of youth were manufacturing with 17 percent of jobs and hotels and restaurants at 11 percent. In 2006, the top two apprentice occupations in Germany were automotive mechanics and retail sales. In Austria, the most popular apprentice occupations were retail trade, office work, and heavy goods and automotive maintenance (Steedman 2010). Retail trade and manufacturing are more likely to employ youth, and apprentices in Austria and Germany are smartly choosing to enter those sectors. Little wonder then that German and Austrian youth, already professionally trained in the sectors most likely to employ them, have an easier time finding work.

The popularity of such apprenticeship schemes varies across the European Union. All advanced economies have vocational training programs, but in many countries the majority of instruction takes place in the classroom. The most valuable aspect of dual-system apprenticeships is the emphasis on workplace experience and training (box 1). Definitions of apprenticeship vary across countries, which makes cross-country comparisons somewhat cumbersome. But according to a

9. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey, <http://data.bls.gov> (accessed on June 20, 2013).

Box 1 Benefits of Dual-System Apprenticeship

Dual-system apprenticeship programs, where students spend most of their time in workplace training while also attending formal classes, have multiple benefits. Such arrangements comprise three main participants: the student, the firm, and the government. All three benefit when an apprenticeship program is well set up.

For students, apprenticeships ease the school-to-work transition, allowing them to gain highly relevant and marketable skills. As is evident in figure 1, youth in countries with dual-system apprenticeship programs are less likely to experience unemployment.

Apprentices do not pay for tuition during their training but instead receive a modest salary. An Austrian apprentice receives approximately one-third the salary of an average blue-collar worker. In 2008, the average German apprentice received approximately \$230 per week as training allowance (Steedman 2010, author's calculations). While these sums are not huge, the apprentice does not have to pay tuition and receives valuable skills training.

The government enjoys both fiscal and social benefits from encouraging apprenticeships. Because dual-system apprenticeship programs are a public-private partnership, they reduce the fiscal burden on the government. The government finances in-class instruction, while the firm pays for the on-the-job training program. By easing the transition from school to work, apprenticeship programs also reduce the likelihood of social discontent and political unrest among the unemployed youth. Furthermore, higher employment and productivity among workers reduce the fiscal burdens of welfare spending and increase tax revenue for the state.

Firms also enjoy several advantages. For example, British firms participating in apprenticeship programs experienced the following benefits (Hasluck, Hogarth, and Adam 2008):

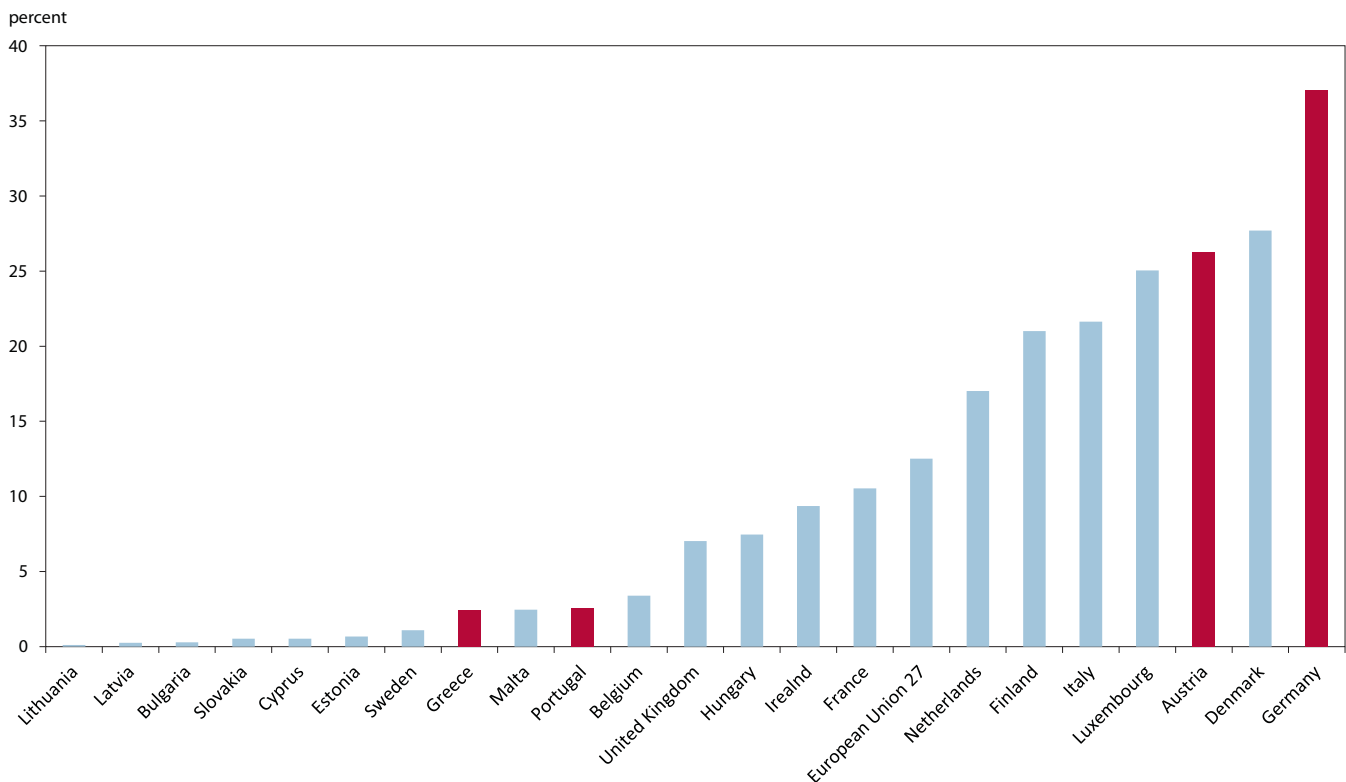
- a supply of labor with the necessary skills that were otherwise difficult to find in the labor market;
- lower recruitment and training costs, which are high when hiring external workers;
- readily available pool of potential recruits at all levels of the company;
- lower employee turnover and demonstrated commitment to the firm by apprentices;
- control over skills shortages, which might otherwise push up wages; and
- enhanced reputation of the company both within the industry and community.

Countries with high youth unemployment rates and low apprenticeship participation rates, such as Spain, Portugal, and Greece, should focus on expanding apprenticeship programs for the benefit of young workers, firms, and the state. Since apprentices don't pay tuition but earn a small amount for their services, apprenticeships in countries like the United States, where rising tuition costs have drawn much criticism, are an attractive proposition.

European Commission (2012) report, if the national definition of apprenticeship is used, in Germany, 37 percent of all people between the ages of 15 and 19 participate in an apprenticeship (figure 4); the share in Austria is 26 percent. By contrast, Greece and Portugal have participation rates of 2.4 and 2.5 percent, respectively. Spain does not have an apprenticeship program in the strict sense but does have a program of mainly classroom-based vocational training, which involves some on-the-job experience.

Rise and Fall of Apprenticeships: A Historical Overview

Apprenticeships are rooted in the guild system of Europe and have been a part of European history at least since the Middle Ages. Originally, a "master" would take on a young boy to live with him and train in a given craft, usually for a period of seven years. The apprentice hoped to eventually become a master and similarly train the next generation. Apprenticeships changed throughout European history, increasingly spreading

Figure 4 Students in apprenticeships as a percent of population aged 15 to 19, 2009

Note: National definition of apprenticeships used. This definition is narrower than that of vocational training.

Sources: European Commission (2012); Eurostat Statistical Database, http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (accessed on May 24, 2013); author's calculations.

from artisan trades, such as printing, to industries such as shipbuilding, plumbing, and electrical work.¹⁰ By the mid-19th century, the live-in model of apprenticeships had all but disappeared and had been replaced with a live-out model resembling an employer-employee relationship.

In practice, guilds often abused the apprenticeship system and used it to monopolize their trades and give preference to sons of guild members. By restricting the number of apprenticeships offered, guilds could control competition and restrict entry of “outsiders.” Guilds also excluded women, persons of illegitimate birth, foreigners, and members of certain religions (Ogilvie 2004).

Economic changes between the 18th and 20th centuries, such as increased emphasis on free trade and laissez-faire, posed several challenges for the guild system and apprenticeships. In his *The Wealth of Nations*, Adam Smith argued that the exclu-

sivity of apprenticeships was oppressive and shrank the supply of labor, resulted in high wages and prices, and prevented free movement of labor (and therefore goods)—all detrimental to economic growth and free trade. This critique was the first blow to guilds and their apprentices. In the late 19th century, technological change further undermined guilds, which were often unwilling to reform and adopt new technologies. As industries such as footwear, papermaking, and furniture increasingly adopted division of labor, an apprenticeship period of seven years seemed to make little sense (Gospel 1995).

Apprenticeships came under further pressure in the interwar years and attracted much criticism from trade unions. Faced with depressed economies, firms increasingly exploited apprentices as cheap labor and often did not provide them with adequate training (Gospel 1995). As a result, trade unions and other labor organizations often opposed the conditions in apprentices' contracts. Daniel Jacoby (1991) pointed out that in the United States “by the 1930s, apprenticeships had gradually been transformed: no longer a contractual arrange-

10. National Apprenticeships Service, “History of Apprenticeships,” www.apprenticeships.org.uk/About-Us/History-of-Apprenticeships.aspx.

ment that bound boys to their masters, it had become an institution controlled by unions.” Trade unions demanded that companies give written assurance on the quality and duration of training. Such measures were meant to prevent exploitative practices by firms. Similar criticism emerged in Britain by the 1960s. Apprenticeships were commonly seen as involving “a large amount of time serving rather than training to standards” (Steedman, Gospel, and Ryan 1998). Another shortcoming was that they did not include women and minorities. In the face of these criticisms, apprenticeships started waning in popularity, which was only hastened by the decline in manufacturing in countries such as the United Kingdom.

The increased emphasis on national education also contributed to the decline in apprenticeships. Governments emphasized the expansion of traditional public in-class education and not only made it compulsory but also gradually increased the age at which children were supposed to complete school. In England, for example, compulsory education was introduced in 1870. In 1973, the age at which a child was to complete compulsory education was raised to 16.¹¹ As a result of such education reforms, students who may have pursued apprenticeships increasingly chose to follow a traditional education route instead.

To sum up, three main factors contributed to the decline in apprenticeships until recently. First, new technologies and free trade replaced mercantilism and the guild system. Second, trade unions opposed potentially exploitative practices of companies employing apprentices. Third, a greater emphasis on compulsory, public education decreased interest in apprenticeships among youth.

Apprenticeships Make a Comeback

The modern apprenticeship system, as exemplified by Germany, has addressed many of the shortcomings of the earlier systems by emphasizing contractual labor standards and ensuring a high level of standardized vocational training that firms demand. A new consensus has emerged, with firms, governments, and trade unions supporting modern apprenticeships.

Despite opposing them in the past, modern trade unions in Europe now vocally support apprenticeship schemes. The European Trade Union Confederation, which represents 85 National Trade Union Confederations from 36 European countries, states that it:

particularly agrees with the objective of making European VET [Vocational Education and Training]-systems world-class by expanding the supply of traineeships and apprenticeships and by promoting work-based learning, which will make the VET-system more attractive to young people—especially those young people who potentially might be early school leavers and/or unemployed. (ETUC 2013)

Similarly, the International Labor Organization (ILO 2012) has expressed support for dual-education systems as a means for students to acquire necessary skills. The ILO also stressed the importance of trade unions, which “play a vital role...by negotiating apprentice pay levels below those of fully-skilled workers while at the same time insisting on high quality training with substantial elements of transferable skills and knowledge.”

In Germany, apprenticeship systems were successfully reformed with the 1969 Vocational Training Act, which laid the groundwork for the modern German dual-education system. As a result, Germany’s modern apprenticeships are now supported by trade unions, government, and firms alike (box 2).

POLICY RECOMMENDATIONS

It would be naïve to think that Germany’s dual-education system can be wholly transplanted into another country. Apprenticeship systems should be molded to the unique economic, cultural, and social conditions in every country. Nevertheless, the German dual system does have several attributes that contribute significantly to its success and are worth replicating. The following are policy recommendations for a government to effectively implement an apprenticeship system.

- **Legislation** should be passed to create a **nationally recognized apprenticeship-completion certificate**, and the content of apprenticeships should be standardized to ensure quality and transferability of skills. The process to receive this certificate must be sufficiently academically rigorous to convince employers that a job applicant with this certification has valuable vocational skills that are transferable between firms and relevant to the industry. An official credential is also important to lend apprenticeships social recognition and prestige. Apprenticeship credentials should be offered in a variety of standardized fields, similar to the vocational profiles in Germany. At first these fields may be limited to the most obvious skills shortages in the country, but their number should be quickly expanded. Germany’s

11. British Broadcasting Corporation (BBC), “School Leaving Age Set to Be 18,” January 12, 2007, http://news.bbc.co.uk/2/hi/uk_news/education/6254833.stm.

Box 2 Apprenticeships in Germany

Apprenticeships in Germany are governed by national legislation known as the 2005 Law on Vocational Education and Training, which is a revised version of the 1969 Vocational Training Act. This law ensures standardization of the content of apprenticeships. It defines the various occupations in which apprentices can participate, more than 300 in total, and provides general guidelines for what an apprentice is expected to learn in each occupation. These descriptions of vocational occupations, called vocational profiles, then serve as a blueprint for designing exit exams and curricula. Such profiles allow the government to regulate what apprentices will learn as part of their training and ensure that a student who successfully completes an apprenticeship has received broad and valuable training that can then be applied in other companies. Firms, however, maintain a strong degree of independence in designing the on-the-job training programs.

The large number of vocational profiles in Germany is one of the defining characteristics of the German apprenticeship model and provides apprentices with a wide range of occupations in which they can be certified. The 2005 law also establishes standard lengths of apprenticeships (24, 36, or 48 months) in various sectors and allows for a one- to four-month initial probation period during which the apprentice contract can be broken. The legislation is implemented at the national level by the Federal Institute for Vocational Education and Training, which is under the supervision of the Ministry of Education.

Perhaps the most important aspect of Germany's dual-education system is the close cooperation among the government, private firms, and trade unions. This is the hallmark of the German apprenticeship system and its most valuable policy insight. At the national level, employers, trade unions, and the federal government cooperate in the Federal Institute for Vocational Education and Training to set wages and develop apprenticeship standards. Apprentices have a unique status as student-workers. While dual apprenticeship models encourage paying the apprentice for his/her labor, the wage is only a fraction (often one-third or one-half) of a regular employee in the sector.

At the *Länder* or state level, firms, trade unions, chambers of commerce, and the state government cooperate to develop a curriculum for in-classroom instruction (Tremblay and Le Bot 2003) and oversee the implementation and content of final examinations. Furthermore, firms and other institutions cooperate to organize logistics, such as places of instruction. This can be particularly complicated in sectors such as construction, where the location of on-the-job training shifts frequently.

Finally, firms have autonomy and flexibility in designing their workplace training programs, as long as the training provided fits into one of the vocational profiles outlined at the national level and prepares the apprentice to pass his/her final exams and receive the national qualification in that vocational profile. Autonomy in designing the on-the-job curriculum is often an important precondition for firm participation.

high number of vocational profiles is one of the reasons for its high apprenticeship participation rate. Some German companies in the United States have established their own apprenticeship system, but the US government does not offer a certificate upon completion.

- **A national regulatory agency**, possibly housed in the Ministry of Education, should be set up to regulate apprenticeship standardization and certification and approve examinations.
- **Apprentices should receive a stipend.** This compensation, as in other countries, should be between one-third and one-half of a regular employee's wage in that sector. Such a stipend lessens the financial burden on students while still designating the apprentice a "learner." However, such an arrangement can often contradict existing minimum wage

legislation, and the government should take measures to exclude apprentices from minimum wage requirements. At the same time, **trade unions should be involved to ensure that firms do not exploit apprentices**, fail to train them, or substitute them for regular workers. Such practices would undermine the goals of an apprenticeship system and would be counterproductive.

- **Attracting firm participation** is the linchpin of an apprenticeship system. To do so the government should allow firms a substantial degree of autonomy in designing the on-the-job training program, encourage private-sector representation in regulatory bodies and may offer financial incentives. The participation of all, or most, of the major employers in an industry is important to avoid the problem of free riding, a situation in which a firm poaches apprentices from

another firm instead of training its own. To avoid such problems, the government needs to engage closely with all, or most, major employers.

- The government can also encourage participation in an apprenticeship system through **financial incentives**. Firms that train apprentices can be **granted favorable tax status**, or the government can **directly subsidize firms' cost of training apprentices**, especially those who are “hard to place,” as is being done in Germany (Steedman 2010). The government should also extend a social safety net to apprentices by ensuring access to affordable health care and other social benefits.

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