

## Appendix C

This Appendix provides some basic evidence that, while Germany does clearly differ in its institutions, enough basic similarities in the labor market for young workers exist to make the results relevant for the understanding of U.S. labor markets.<sup>1</sup> We have used the administrative data to replicate several of the main results of Topel and Ward's (1992) seminal study on career patterns of young American workers. As in Topel and Ward's study, the sample consists of all men between 18 and 34 years who are in stable employment.<sup>2</sup> The results of the exercise suggest that while institutions and the degree of job mobility clearly differ, it is reasonable to suppose that, in the sense of Ryan (2001), the 'fundamental economic mechanisms' operating in the labor markets for young workers in the two countries bear some basic similarities.

The main points, shown in Appendix Table C can be summarized as follows. First, labor force attachment is slightly higher among Germans over the first two years of potential experience (the period during which a large fraction of German workers participates in apprenticeship training), but evolves similarly in Germany and the U.S. afterwards (Panel A of Table C). Second, while Americans do transit through more jobs in the first years of the labor market, job attachment is similar for jobs lasting at least six quarters.<sup>3</sup> Third, Panels B and C of Table C show that both wage growth within and between employers is important and of similar magnitude in Germany and the US.<sup>4</sup>

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<sup>1</sup> Critics of policy proposals based on the German apprenticeship scheme argue that the system is fundamentally linked to German labor market institutions absent in the US. For an overview of the arguments for and against establishing large-scale apprentice programs in the US, see Stern et al. (1994) or Heckman et al. (1996).

<sup>2</sup> The study is based on a 1% sample of the data set used in the main analysis provided by the Institut fuer Arbeitsmarkt- und Berufsforschung (IAB). The data, sample used, and approach are described in the notes to the tables and figures in Appendix C available from the authors' website.

<sup>3</sup> The difference in the overall hazard of job leaving is concentrated in the first six quarters of job attachment. This pattern is driven from differences in job-to-job transition rates; job-to-non-employment transition rates are similar. Similar differences in mobility rates among young workers are reported by Ryan (2001).

<sup>4</sup> Average within job wage growth for a restricted sample with at least six quarters of tenure in the US is 7.1%, average completed job duration is 7 years, and average rate of job change is 28% (Topel and Ward 1992, Table VI). The corresponding values in Germany are 9%, 7.3 years, and 25%. Average wage growth occurring between jobs (controlling for experience) is 19.9% in the US (TW, Table VII) and 20.6% in Germany.

Fourth, it is the first years in the labor market that matters most in both countries; in the US, two thirds of earnings growth occurs in the first ten years of the career (Murphy and Welch 1992). In Germany, counting the apprentice period, 41% of earnings growth occurs in the first 5 years, and 80% of earnings growth occurs in the first ten years.<sup>5</sup> Last, as will be seen in the next section, raw wage losses from leaving the training firm are a similar order of magnitude of wage losses of young displaced workers in the US.<sup>6</sup> In addition, Harhoff and Kane (1997) and Blau and Kahn (1997) find that apprentices occupy a similar position in the wage distribution, have similar wages, and similar wage-experience profiles as high-school graduates in the US.<sup>7</sup> Thus, while specific numerical results may not be directly transferable across labor markets, this comparison suggests that the mechanisms of early job and wage dynamics and the potential biases of estimation methods are similar enough for the current approach to provide useful insights into the study of young job losers' careers in the U.S.

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<sup>5</sup> If wage growth during apprenticeship is excluded, 70% of wage growth occurs in the first 10 years.

<sup>6</sup> No estimates for *young* displaced workers exist so far for Germany. As shown by Couch (1996), wage losses for mature displaced workers are similar to wage losses of workers in the US.

<sup>7</sup> See Harhoff and Kane (1997) Table 5 and Figures 3 and 4, or Blau and Kahn (1997) Figures 1b and 2b. The main difference between the US and Germany is the labor force participation rate and unemployment rate of very young workers (Ryan 2001, Blau and Kahn 1997). These results are consistent with the idea that the main impact of the German apprenticeship system is to reduce unemployment rate among young workers.

**Appendix Table C: Early Labor Market Experience of Young Men - US and Germany**

		Germany	United States
<b>Panel A: Men, Age 18-34</b>			
<b>Actual Years of Experience at 5 (10) Years of Potential Experience</b>	5 Years	4.30	3.73
	10 Years	8.91	8.19
<b>Average Number of Jobs at 5 (10) Years of Potential Experience</b>	5 Years	2.27	4.56
	10 Years	3.65	6.96
<b>Fraction Leaving Job at 2 (6) Quarters of Job Tenure</b>	2 Quarters	0.15	0.22
	6 Quarters	0.10	0.11
<b>Panel B: Men, Age 18-34, Jobs Lasting 6+ Quarters</b>			
<b>Average Completed Job Duration</b> (Standard Deviation)		7.29 (4.13)	7.00 (3.67)
<b>Fraction Changing Job</b> (Standard Deviation)		0.25 (0.43)	0.28 (0.45)
<b>Average Wage Growth on Job</b> (Standard Deviation)		0.09 (0.22)	0.07 -
<b>Panel C: Controlling for Experience and Tenure</b>			
<b>Average Wage Growth Within Jobs</b> (Standard Error)		0.20 (0.00)	0.14 (0.01)
<b>Average Wage Growth Between Jobs</b> (Standard Error)		0.21 (0.03)	0.20 (0.02)
<b>Fraction Growth After 10 Years</b>		80%	60%

Notes: Left Column- own calculations from IAB employment subsample including apprentices. Right Column - Topel & Ward (1992). To be consistent with Topel and Ward, the sample consists of West-German males who were at least 18 years old at entry into the sample and who entered the labor force between 1975 and 1980. Workers who were older than 34 at the end of the sample period were dropped. Moreover, it was required that workers did not spend more than two years out of the labor force or in unemployment.