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## ABSTRACT

### **A Socio-economic Analysis of Youth Disconnectedness\***

Disconnectedness among youth can have several dimensions. From a socio-economic viewpoint, failure in school, unemployment and the lack of an intimate relationship are among the most important ones. In our samples from SOEP youth questionnaires, approximately 13% of young people in Germany between the ages of 17 and 19 are disconnected. The percentage of disconnected youths has been on the rise since 2001. There is evidence that an adverse family background is the most important variable for being disconnected in young adulthood. Macroeconomic factors also contribute to disconnectedness. Recessions are followed by increases in the number of disconnected youth.

JEL Classification: D87, I12, I21, J13

Keywords: disconnected youth, unemployment, school failure, life adversity

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## 1 Introduction

Disconnectedness among youth can have several dimensions. From a socio-economic viewpoint, failure in school, unemployment and the lack of an intimate relationship are among the most important ones. Many youths in modern society lack networks to provide emotional support, financial assistance, and housing. Several problems for disconnected youths arise when loans are difficult to obtain due to imperfections in credit markets and family and friends are not available to provide support. This may specifically result in insufficient investment in human capital. Furthermore, successful integration into society is contingent upon the passage of a number of tests with formal and informal rules. Those who do not pass such tests or who do not adhere to social rules have a higher probability of future failure (McCurdy et al., 2006, among others). These two factors together can create a vicious downward spiral. Failure in an apprenticeship training programme, for example, has long-run negative effects on income, increases the likelihood of unemployment, and results in permanent instead of temporary earnings wounds (Franz et al., 2000, among others).

Despite the pertinacity of youth disconnectedness, there is a lack of empirical research on its extent and evolution in the last decades as well as on the main socio-economic factors behind youth disconnectedness in Germany.<sup>1</sup> This paper intends to close this gap in the following way. First concepts of disconnectedness are introduced that focus on not being employed, not being in school and not living together with a partner. We investigate the evolution of youth disconnectedness according to these concepts over a period of two and a half decades (from 1984 to 2008), and breakdown the data according to gender, immigrant status and region (East or West)

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<sup>1</sup> Economic studies, as a rule, have concentrated on the dimension of unemployment (see Franz, 1982) or on young adults entering the labour market (Franz et al., 2000). Gomez-Salvador and Leiner-Killinger (2008) investigate youth unemployment in the euro area, based on the European Labour Force Survey. According to their findings, German youth unemployment stood at 12.1% in 2007, compared to 15.3% for the entire euro area. For 15-to-24-year-olds, the long-term unemployment rate (over one year) was 27% in 2007. While this number has declined in most countries since 1995, it has increased in Austria, France and Germany. Ayllón (2009) investigates the relationship between poverty and employment among European youth.

for the years following German unification (from 1991-2008). The analysis is based on samples taken from the German Socio-Economic Panel (SOEP). Second, the relationship between youth disconnectedness and other socio-economic outcomes - school grades, class repeat, sport activities and the locus of control - is studied based on samples taken from the SOEP Youth Questionnaires (from 2000 to 2008). Finally, we examine family background variables as determinants of disconnectedness with probit models with these samples. Our results are compared with recent findings from the United States (Martinez and Wald, 2003; MaCurdy et al. 2006; Fernandes and Gabe, 2009).

Our assessment reveals that around 13% of adolescents between the ages of 17 and 19 are disconnected at any one time in Germany. We find a rising tendency in rates of disconnection after the economic recession of 2001-02 in our samples from the SOEP Youth Questionnaires. While Martinez and Wald (2003) also report an increase from 1982 to 2002, according to MaCurdy et al. (2006), the likelihood of suffering from periods of disconnectedness decreased in the United States (before the economic recession starting in 2007). There is only a moderate discrepancy in disconnectedness between males and females, if at all. While youths with immigrant backgrounds have a higher disconnection rate in Germany (see also Haisken-DeNew and Sinning, 2007), this rate has evolved in a manner similar to the entire youth population. Surprisingly, disconnection rates in East Germany were lower than in West Germany in the period after reunification and again after 2004.

Our probit estimates confirm that there is no statistically significant gender difference in disconnection rates. There is also no (strong) evidence that an immigrant background per se increases one's probability of becoming disconnected (a finding corroborated by Franz et al., 2000), or that East and West Germans differ. One of the most important variables in our samples from the SOEP Youth Questionnaires that increases the probability of being disconnected, however, is a low parental qualification and broken home, which confirms previous findings of

MaCurdy et al. (2006), Rasmussen (2009) and Martinez and Wald (2003), among others. Interestingly, the inequality in disconnection rates by parental qualification is slightly higher among the German youth, compared to the immigrant youth.

Our findings are in accordance with research on the long-term consequences of an adverse family environment (see Blomeyer et al., 2009; Heckman, 2007; among others). Part of disconnectedness in adolescence and early adulthood therefore has deep roots in childhood. Economic recessions also contribute to youth unemployment, in turn increasing the prevalence of youth disconnectedness (see also Bell and Blanchflower, 2009; Gomez-Salvador and Leiner-Killinger, 2008; Verick 2009). In this way, the consequences of job loss, credit market imperfections and a lack of emotional support culminate in periods following recessions. In sum, disconnectedness seems to result from low-quality adult mentoring in developmental and economic periods when mentoring is most needed.

The rest of the paper is organised as follows. Section 2 introduces the data and elucidates disconnectedness. Section 3 examines the evolution of disconnectedness from 1984 to 2008. Section 4 presents a breakdown of disconnectedness by gender, immigrant status and region for the period after German reunification. Section 5 studies the association with school grades, locus of control and sports activities. Section 6 examines individual determinants of disconnectedness, while section 7 concludes.

## **2 Data and concepts of disconnectedness**

Different samples taken from the German Socio-Economic Panel (SOEP) are used in this study. The SOEP is a representative national longitudinal data set which has surveyed households and individuals (Wagner et al., 2007) on socio-economic issues since 1984. In 2008, some 11,000 households comprising more than 20,000 persons were sampled by the SOEP. We generate a sample of young people between the ages of 17 and 25 (*Sample A*) to investigate the evolution of four different concepts of disconnectedness, and compare the results with findings from the United

States. Next we focus on adolescents aged 17 to 19 for an analysis of disconnectedness according to gender, immigrant status and region (East or West Germany) (*Sample B*), covering the period from 1991 to 2008 (in a unified Germany).<sup>2</sup> In a final step, determinants of disconnectedness are analysed on the basis of predetermined variables (*Sample C*). *Sample C* is a balance panel from the SOEP Youth Questionnaires introduced in 2000. It consists of one 17-year-old household member for each household that participated in the survey in the years 2000 to 2008 and allows an additional examination of youth disconnectedness and related socio-economic outcomes.

For comparison reasons we elucidate two concepts of disconnectedness introduced by MaCurdy et al. (2006) that focus on unemployment, non-enrolment in school and lack of an intimate relationship. Two additional concepts of disconnectedness are introduced. Table 1 summarises the four concepts of youth disconnectedness, which are referred to as DC1, DC2, DC3 and DC4.

[Table 1 about here]

According to the first concept, DC1, not being enrolled in school and not working constitutes disconnectedness. MaCurdy et al. (2006) find that 24% of all youths growing up in the United States experience at least one year of not working and not being enrolled in school by the age of 22. If the condition *not living with a spouse* is added (DC2) they estimate that 19.8% of all youths accumulate at least one year of disconnectedness, and 8.7% accumulate at least two years. Teen mothers, high-school dropouts, youths who have been convicted of a crime, and youths who spent time not living with their parents are overrepresented in this group. In the third concept, DC3, not living together with a partner is substituted for not living together with a spouse. Partners, and not only spouses, may provide financial and emotional support (Martinez and Wald, 2003). According to DC4, an individual is disconnected if he or she is, in fact, lacking a partner.

The concepts are constructed hierarchically. DC1 covers two dimensions. If respondents report that they are not employed, not in school (or not receiving vocational training), they are

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<sup>2</sup> Note that in this period the German economy suffered two major recessions, one in 1993-95 and one in 2001-03.

categorised as DC1. If they also report that they are not married, DC2 is used instead. The SOEP's marital-status question has changed over time. With the exception of 1985, the SOEP asked whether respondents live together with a partner in a serious long-term relationship. If respondents report that they are not living with a partner, the disconnectedness is defined to be DC3. In 1991, the SOEP split the question into two parts: participants were asked if they were in a long-term relationship, and then if they lived together with their partner. If respondents report that they do not have a long-term relationship, disconnectedness is defined to be DC4, which is only available from 1991 onward.

### **3 The evolution of disconnectedness between 1984 and 2008**

Figure 1 shows the evolution of our concepts of disconnectedness using *Sample A*. Although the level of disconnectedness differs significantly between the four concepts, they are highly correlated, documented in Table 2.

[Figure 1 about here]

[Table 2 about here]

Disconnection rates range from 4% (DC4) to 16% (DC1) in 1994, for example. The evolution of disconnectedness depends on the concepts chosen. According to DC1, the rate of disconnectedness decreases slightly between 1984 and 2008. This seems to be in line with the findings of MaCurdy et al. (2006) and Franz et al. (2000). The German youth unemployment rate declined until 1990, as the supply of apprenticeship positions was larger than the demand for them. However, DC2, DC3 and DC4 increase after 1992 and again after 2002. The reason is that the decline of the proportion of youths in a relationship and living with a partner or a spouse offset the rise of the number of youths not in school and unemployed.

All disconnection rates move cyclically. It turns out that disconnection follows the official unemployment rate but with a time lag. The correlation between DC3 and the lagged unemployment rate amounts to 0.38 in the time period under investigation (Table 2). Economic



recessions contribute to youth unemployment, in turn increasing the prevalence of youth disconnectedness (see also Bell and Blanchflower, 2009; Gomez-Salvador and Leiner-Killinger, 2008; Verick 2009). The consequences of job losses, credit market imperfections and a lack of emotional support culminate in periods following recessions.

Figure 2 illustrates the evolution of disconnection with the same concepts, this time for females only. It is demonstrated that the DC1 disconnection rate is much higher for females from 1984 to 2000, which is in line with the findings of MaCurdy et al. (2006) as well as Fernandes and Gabe (2009).

[Figure 2 about here]

However, the gender gap decreases afterwards. According to our understanding, this is part of an overall trend toward higher female participation rates in the labour market. Female labour market participation increased from 45.9% in 1968 to 63.6% in 2002 (Bartelheimer, 2005, 97). Since employment participation is not our main research focus we will disregard DC1 in what follows. Disconnectedness among females seems to be lower than among males for the other three concepts. Although females are more often unemployed and not in school the likelihood that they live together with a spouse or partner at this age is higher.

Youth disconnectedness as measured with DC2, DC3, and DC4 evolve similarly. We will focus in the further analysis on DC3 for the following reasons. Living together with a partner is a well accepted alternative to living with a spouse in the modern German society. The share of unmarried couples who live together, for instance, increased by 34% from 1996 to 2007 (Destatis, 2008). Furthermore, DC3 moves in accordance with DC2 and DC4 and always remains in between the two. Since the correlation rates are 0.87 or higher (see Table 2), a detailed examination of one concept is sufficient for the purpose of our investigation (see section 5 for further robustness-checks).

#### 4 A breakdown of disconnectedness

Figure 3 examines the evolution of disconnectedness (DC3) with samples of young adults within different age groups since 1991 (*Sample B*). In this figure we also add official youth unemployment rates. We compare the age group of 17 to 25 (*Sample A*) with the subsamples of disconnected youth in the age group of 17 to 19. Not surprisingly, the disconnection rate of the 17-to-19-year-olds in each year lies below the disconnection rate of the 17-to-25-year-olds. This confirms the findings by Franz et al. (2000). The German dual apprenticeship system contributes to lower unemployment rates among teenagers at the expense of delaying the onset of unemployment to young adulthood.

[Figure 3 about here]

The disconnection rates move in a similar way over time. For adolescents (17 to 19), the rate increased from 4.2% in 1991 to 7.19% in 2008 and for the whole sample the rate increased from 4.5% to 7.4%. Official unemployment rates and our measure of disconnectedness among adolescents move in a different way. While official unemployment rates decreased from 1997 to 2004, our disconnection rates increased slightly. The reason is that our measure covers social factors in addition to economic factors of disconnectedness as well. Both of these dimensions are important in their own right.

Table 3 contains the transition matrix for 18-or-19 year olds who were disconnected at time  $t$  and again at age 20 or 21 at  $t+2$ <sup>3</sup> between 1991 and 2008. The Chi-square test of independence for disconnectedness rates in  $t$  and  $t+2$  clearly rejects the null hypothesis that the rates are statistically independent at a 1%-significance level. Adolescents who are disconnected at the age of 18 or 19 have a probability of being disconnected two years later that is 15 percentage points higher than those who are not disconnected at 18 or 19.

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<sup>3</sup> We choose  $t+2$  (instead of  $t+1$ ) to ensure that an individual appears only once in the sample. See Table A1 in the appendix for the transition matrix  $t, t+3$  of the 17-, 18- and 19-year-olds. We employ the transition matrix of the 18- and 19-year-olds since this reduces missing values by 30 percentage points, Table A2.

[Table 3 about here]

This result seems to be in line with Allyón (2009), who report that the highest state dependence in the employment status among European countries is found in Germany (and Italy).

The further breakdown of disconnectedness reveals the following findings. The difference in the DC3 disconnection rate between females and males is only moderate, if existent at all (Figure 4), which is in line with MaCurdy et al. (2006).

[Figure 4 about here]

Youth with immigrant backgrounds more frequently belong to the disconnected in Germany (Figure 5), as well as in the United States (Martinez and Wald 2003, MaCurdy et al. 2006 and Fernandes and Gabe 2009). The gap varies with the business cycle and is lower in economic upturns.

[Figure 5 about here]

Furthermore, and surprisingly, youth disconnectedness has been less prevalent in East than in West Germany (Figure 6), with the exception of the period from 2001 to 2004. This is true despite the fact that youth unemployment rates have been higher in the East (12.7%) than in the West (5.7%) in 2008 (German Federal Labour Office, 2009).

[Figure 6 about here]

Lower rates of disconnectedness in East Germany seem to be an inheritance of the culture of early independence that characterised life in communist East Germany. East German youths marry sooner, start their own families earlier and are therefore more independent from their parents than West German youths (see Montada and Oerter 2002, 320). Another reason is that the share of youth with immigrant background is lower in East compared to West Germany.

## **5 Youth disconnectedness and related outcomes**

In a further step we examine the prevalence of disconnectedness with samples taken from the SOEP Youth Questionnaire (2000-2008), *Sample C*. DC3 now equals 1 if a person is unemployed,

not enrolled in school and not living together with a partner at the age of 17, 18 or 19; otherwise, it is 0. Siblings are excluded and only one adolescent from each household is examined to avoid composition effects. These restrictions leave us with 1,335 individuals, 676 females and 659 males. Disconnectedness in *Sample C* hovers around 12-13% and increases over time (Table 4, a). In the period 2006 to 2008, the rate was 17.7%.

One advantage of using the SOEP Youth Questionnaire is that it includes a number of related, yet different life outcomes. Since there is a lack of research on the association between disconnectedness and other outcome variables, we study the association of the occurrence of DC3 and average school grades, sports activities, Rotter's (1966) locus of control and class repeat. The locus of control measures general beliefs about one's capacity to influence one's environment and achieve goals. "Internalisers" tend to attribute outcomes to their actions, whereas "externalisers" attribute outcomes to outer circumstances. The intensity of sports activities, *Sports*, is constructed such that 0 means never; 1, less than once a month; 2, once a month; 3, once a week; and 4, daily sports activities.

[Table 4 about here]

Table 4b demonstrates that the group of disconnected youth on average perform significantly worse in school (note that in the German educational system, 1 is the best and 6 the worst grade), participate in sports activities less frequently and have lower locus of control scores. Moreover disconnected youths more often repeated a class at least once. This demonstrates that the track to disconnectedness starts already before young adulthood. Being disconnected goes hand in hand with a tendency to "externalise", confirming Coneus et al. (2009) who showed that lower locus of control scores are related to school failure. Some studies argue that a lower locus of control is related to lower levels of self-discipline or perseverance (Heckman and Rubinstein, 2001). If this interpretation is correct, our findings demonstrate that lower levels of self-discipline and disconnectedness are related.

Participation in sports activities indicates social integration and a concern for physical as well as mental health. For many people in the industrialised world, physical activities are no longer necessary for survival. Individuals require initiative to engage in activities that improve health and well-being. Lechner (2009), for instance estimates the rate of labour market returns for investments in sport activities at 5% to 10%. Since according to our findings sports investments of disconnected youth are lower, the probability of bad labour market outcomes will be higher as a consequence.

## **6 Determinants of disconnectedness**

Finally we examine individual determinants of disconnectedness with a probit model, based on *Sample C*. In the model only predetermined variables are used. As predictor variable a set of dummy variables for the parental educational level is included. If one parent is highly (medium) educated, and the other not, parental qualification is (*high*) *medium*. If mother and father are low educated, parental qualification is defined to be *low*.<sup>4</sup> In addition a dummy variable, *first 15 years not with both parents*, indicates whether the individual lived during the first 15 years of her life with both parents (0) or not (1). A further set of controls includes time indicators, a gender variable, *female*, a regional dummy variable, *West* (which equals 1 if the youth is from West Germany) and *immigrant*, which equals 1 if the youth has an immigrant background.

For the dummy variables a test of equal proportion was performed. There are significant (5%-level) differences in some of these variables among the disconnected and connected youth (Table 5) and none in others. More youths with immigrant backgrounds and more individuals from West Germany belong to the group of disconnected youth.

[Table 5 about here]

There is no statistically significant difference among males and females, although disconnection rates are slightly higher among females. Disconnected youths significantly more often have low

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<sup>4</sup> In preliminary work we used father's and mother's education separately. The conclusions are comparable.

qualified parents and grew up less often with both parents. Furthermore, we tested the role of parental qualification by migration status for youth disconnectedness. The parental qualification gap of disconnection rates is slightly more distinct for German compared to the immigrant youth. The differences in disconnection rates between youth with low and high parental qualification are 14.2% for Germans (20.2%-6.4%, Table 5, column DC-rates) and 13% for immigrants (24.2%-11.1%). Although disconnection rates are higher among immigrants youth the inequality in disconnections rates by parental qualification is slightly higher among the German youth.

To assess marginal probabilities three variants of probit equations have been estimated (Table 6). Variant (1) contains only dummies for sex, region and immigration background. In this model the only variable which remains significant (10%-level) is *West*, living in West Germany. West German youth have a 3.7% higher marginal probability of being disconnected compared to East German youth.

[Table 6 about here]

Variant (2) in addition contains our parental background variable (*Low parental qualification* serves as a reference category for parental qualification) and confirms the descriptive findings. If parental qualification is *medium (high)* the probability of being disconnected is reduced by 5.8% (10.6%), a finding that is in line with the literature (MaCurdy et al., 2006; among others). Furthermore, if the youth did *not grow up with both parents* until the age of 15 the probability that he/she is disconnected increases by 8.2%. Living in West Germany now no longer increases the marginal probability of being disconnected. The coefficient for *West* becomes insignificant. The finding suggests that parental background has been responsible for the significant regional coefficient in Variant 1.

The goal of variant (3) is to assess the relevance of parental qualification variable by migration status for being disconnected. First, the marginal effects (Table 6, variant (3)) suggest that there is no statistically significant difference between immigrant and German youth with low qualified

parents. Moreover the probability of being disconnected (compared to the reference group of immigrant youth with low qualified parents) is 5.5% (8.2%) lower for immigrant (German) youth with medium qualified parents and 7.4% (12.5%) lower for immigrant (German) youth with high qualified parents. Although the marginal effects are lower for immigrant youth at each qualification level, the differences at each qualification level are not statistically significant. Therefore we conclude that in our sample taken from the SOEP youth questionnaires parental qualification is more important for the probability of being disconnected than migration status. The higher disconnection rates in the group of immigrant youth mainly result, according to these findings, from the fact that parental qualification is lower among immigrants. Immigrant youth more often (33.7%) have parents with low qualification compared to their German peers (20.0%). Our conclusion is in line with Franz et al. (2000), who find no evidence for discrimination against foreign youths in the labour market. It also is in line with Aldashev et al. (2009), who demonstrate that language skills and not an immigrant background per se contribute to lower earnings among immigrants in Germany. Language skills are correlated with parental qualification.

For sensitive reasons we performed probit estimates with our remaining measures of disconnectedness, DC1, DC2, DC4 (see Tables A3-A5 Appendix). The results indicate for DC1 slightly larger marginal effects for parental qualification. Family background seems to be even more important for disconnectedness related specifically to labour market outcomes. Furthermore, the marginal effect for *immigrant* youth becomes significant at the 5%-level for DC4 in variant 1 and 2 now. An immigrant background therefore is associated with the probability of being disconnected in the sense of not having a partner at all. This may result either from a different cultural background or from more difficulties in establishing a partnership compared to Germans. To sum up the main empirical findings from the SOEP Youth Questionnaire, having low-skilled parents and absent parents are among the relevant variables that predict disconnectedness. The

findings demonstrate the more prominent role of family environments for development (see also Blomeyer et al., 2009) compared to the region of residence or an immigrant background.

## **7 Conclusions**

Many youths in modern society lack networks to provide emotional support and financial assistance. They fail in school, lack an intimate relationship or are not employed and may face serious problems during the transition to adulthood. Educational investment may suffer as well as integration into society, contributing to a vicious downward spiral.

In this paper we examined the prevalence of “disconnectedness” among adolescents in Germany. The definition of disconnectedness used in our paper is based on economic and social factors. Around 13% of young people between the ages of 17 and 19 are disconnected according to our definition. This figure has been on the rise since 2001. There is evidence that an adverse family environment (having parents with a low educational level and/or from living in a broken home) is the most important variable for being disconnected at 17-to-19 years of age.

A remark may be appropriate here. The paper does not contribute to an understanding of public programmes dedicated to helping disadvantaged youths. Surprisingly enough, in spite of many governmental efforts to assist disadvantaged adolescents (for the German programme see Deutscher Bundestag, 2009), the problem of disconnectedness is still present in many countries, as is noted by MaCurdy et al. (2006): “Despite the billions of federal, state local and private dollars spent on a wide range of programs aimed at helping disadvantaged youth, many still experience ‘disconnection’ leading them to fail in acquiring the skills necessary for establishment as independent adults.”

Our research demonstrates that part of disconnectedness in adolescence indeed has deep roots in childhood. Parents in disadvantaged families have difficulty providing emotional and material support for their offspring in times of developmental change as well as in times of economic hardship. Disconnectedness is significantly associated with weaker self-control and less sports



activities. While there is no (strong) evidence that an immigrant background contributes per se to disconnectedness, adolescents with an immigrant background are overrepresented among the disconnected, mainly because parental qualification is lower among immigrants. Interestingly, the inequality in disconnections rates by parental qualification is slightly higher among the German youth. Furthermore we have found evidence that economic downturns contribute to disconnectedness with a delayed effect. Following a recession, the disadvantaged youths seem to suffer most, presumably because recessions aggravate the wounds left from early life adversity.

Although our findings are corroborated by international research, some shortcomings remain. First, the magnitude of the problem of disconnected youth presumably is underestimated due to survey bias: we can assume that disconnected youths participate in the SOEP less frequently. Second, there are further dimensions and outcomes of disconnectedness not examined in our paper. Disconnectedness may also be associated with a bias to the present or developmental disorders, like anxiety or mood disorders. An investigation with such psychological dimension of disconnectedness is left for future research.

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## Tables

**Table 1:** Four concepts of disconnectedness

	DC1	DC2	DC3	DC4
Not Enrolled in School and Not Working	X	X	X	X
Not Enrolled in School, Not Working, and Not Living with a Spouse		X	X	X
Not Enrolled in School, Not Working, and Not Living with a Partner			X	X
Not Enrolled in School, Not Working, and Not Having a Partner				X

**Table 2:** Correlations among the concepts and the lagged unemployment rate

	DC1	DC2	DC3	DC4
<b>DC2</b>	0.95			
<b>DC3</b>	0.91	0.99		
<b>DC4</b>	0.87	0.93	0.92	
<b>Unemployment (t-1)</b>	0.14	0.32	0.38	0.18

Source: *Sample B* of 17-to-19 year old respondents from SOEP, 1991-2008; yearly official unemployment rates (statistics from the German Federal Labour Office); own calculations.

**Table 3:** Transition matrix t, t+2

DC3 in t	DC3 in t+2		Total
	0	1	
<b>0</b>	2,792	278	3,070
<b>%</b>	90.9%	9.1%	100.0%
<b>1</b>	124	39	163
<b>%</b>	76.1%	23.9%	100.0%
Total	2,916	317	3,233

Source: *Sample B* from SOEP 1991-2008, own calculations.

**Table 4:** The relationship between disconnectedness and other outcomes

a) Disconnectedness of 17-year-olds, 2001-2006, and by sex in %									
	All	Males	Females	2001	2002	2003	2004	2005	2006
<b>DC3=1</b>	12.7	12.1	13.3	6.6	9.2	15.9	14.5	13.7	17.7
b) Other Outcomes									
	Min	Max	Mean	DC3 = 0	DC3 = 1	t-Test			
School Grade	1	6	2.9	2.9	3.2	t = -4.3			
Class Repetition	0	1	0.22	0.20	0.33	t = -3.7			
Rotterscore	17	63	45.4	45.7	43.4	t = 3.8			
Sport	0	4	2.4	2.5	1.9	t = 4.9			

Source: *Sample C* taken from SOEP Youth Questionnaire, 2000-2008; own calculations.

**Table 5:** Descriptive statistics and tests

Variable [all variables 0,1]	All	Connected	Disconnected	DC-Rates	Test
<i>female</i>	50.6%	50.3%	52.9%	13.3%	$z = -0.6$
<i>West</i>	71.8%	70.8%	78.8%	14.0%	$z = -2.2$
<i>Immigrant</i>	18.4%	17.6%	24.1%	16.7%	$z = -2.0$
Parental qualification					
<i>low</i>	22.5%	20.3%	37.6%	21.3%	$z = -5.0$
<i>medium</i>	42.5%	42.5%	42.4%	12.7%	$z = 0.0$
<i>high</i>	35.0%	37.2%	20.0%	7.3%	$z = 4.4$
Parental qualification by migration status					
<i>low, German</i>	16.3%	14.9%	25.9%	20.2%	$z = -3.6$
<i>low, immigrant</i>	6.2%	5.4%	11.8%	24.1%	$z = -3.2$
<i>medium, German</i>	37.0%	37.2%	35.9%	12.3%	$z = 0.3$
<i>medium, immigrant</i>	5.5%	5.3%	6.5%	15.1%	$z = -0.6$
<i>high, German</i>	28.2%	30.3%	14.1%	6.4%	$z = 4.4$
<i>high, immigrant</i>	6.7%	6.9%	5.9%	11.1%	$z = 0.5$
Living with both parents					
<i>first 15 years not with both parents</i>	20.4%	18.9%	31.2%	19.4%	$z = -3.7$

Source: *Sample C*, 1,335 obs. from the SOEP Youth Questionnaire, 2000-2008; own calculations.

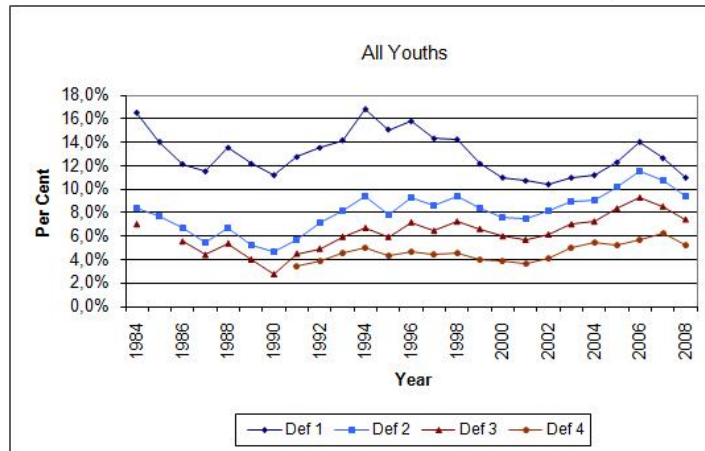
**Table 6:** Findings of the multivariate analysis (marginal effects)

<b>Probit Regressions: Disconnectedness (DC3)</b>						
<b>Model</b>	<b>(1)</b>		<b>(2)</b>		<b>(3)</b>	
<b>Variables</b>	<b>dF/dx</b>	<b>z</b>	<b>dF/dx</b>	<b>z</b>	<b>dF/dx</b>	<b>z</b>
<i>female</i>	0.0151	0.85	0.0123	0.71	0.0123	0.71
<i>West</i>	0.0371	1.78	0.0272	1.26	0.0283	1.29
<i>Immigrant</i>	0.0327	1.35	0.0367	1.53	-	-
<i>first 15 years not with both parents</i>	-	-	0.0815	3.61	0.0806	3.57
Parental Qualification (2)						
<i>medium educated family</i>	-	-	-0.0580	-2.67	-	-
<i>high educated family</i>	-	-	-0.1063	-5.02	-	-
Parental qualification by migration status (3)						
<i>family low educated German</i>	-	-	-	-	-0.0272	-0.83
<i>family medium educated immigrant</i>	-	-	-	-	-0.0552	-1.48
<i>family medium educated German</i>	-	-	-	-	-0.0816	-2.52
<i>family high educated immigrant</i>	-	-	-	-	-0.0739	-2.15
<i>family high educated German</i>	-	-	-	-	-0.1253	-4.26
	Obs. = 1,335		Obs. = 1,335		Obs. = 1,335	
	Ps. R <sup>2</sup> = 0.02		Ps. R <sup>2</sup> = 0.06		Ps. R <sup>2</sup> = 0.06	
	Wald = 19,89		Wald = 55,84		Wald = 55,60	

Source: *Sample C*, 1,335 observations taken from the SOEP Youth Questionnaire, 2000-2008; own calculations

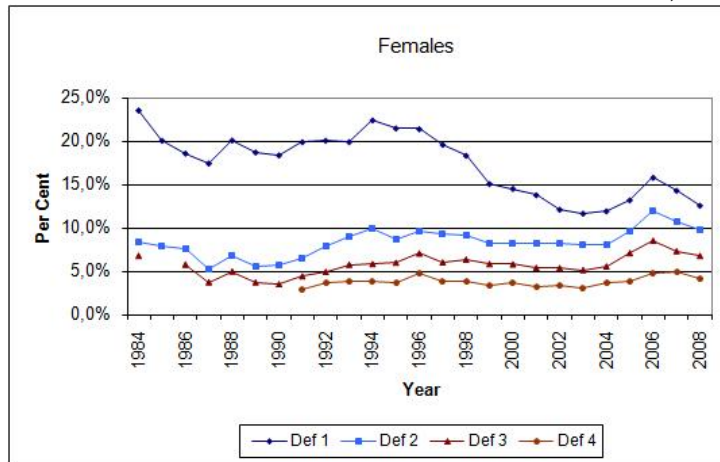
## Figures

**Figure 1:** The evolution of disconnectedness, 1984-2008



Source: *Sample A* from SOEP, 1984-2008; own calculations (DC3 not available in 85, DC4 since 91).

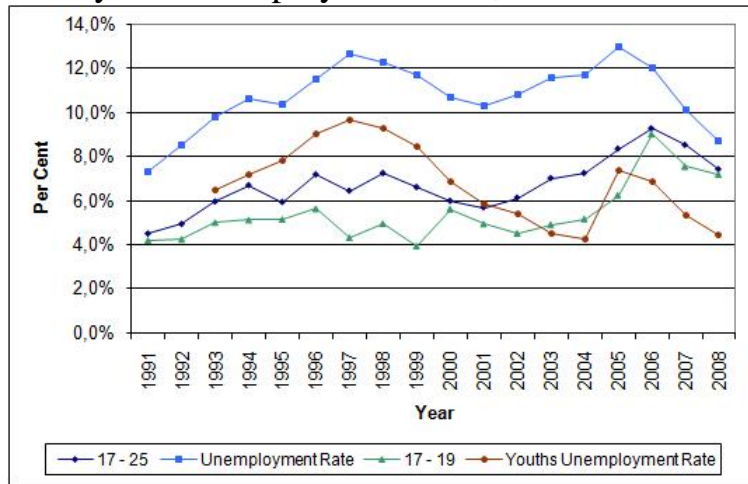
**Figure 2:** The evolution of female disconnectedness, 1984-2008



Source: *Sample A* from SOEP 1984-2008, own calculations (DC3 not available in 85, DC4 since 91).

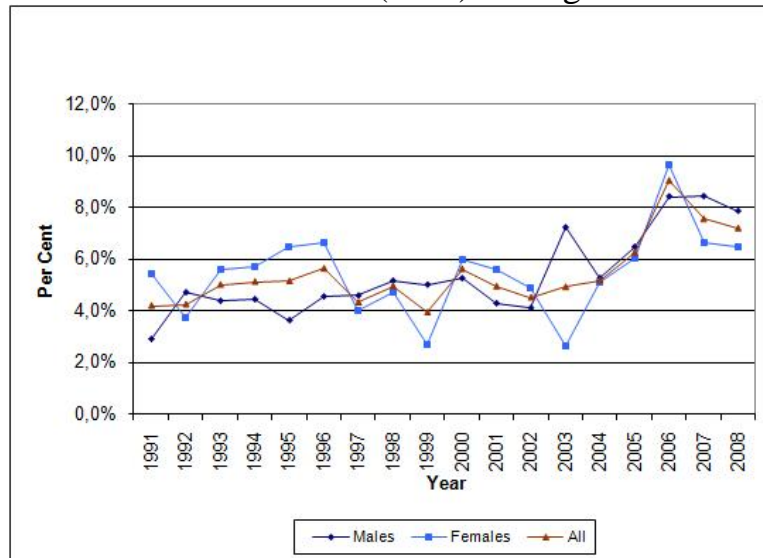


**Figure 3:** The share of disconnected youth (DC3) compared to youth unemployment rates, 1991-2008



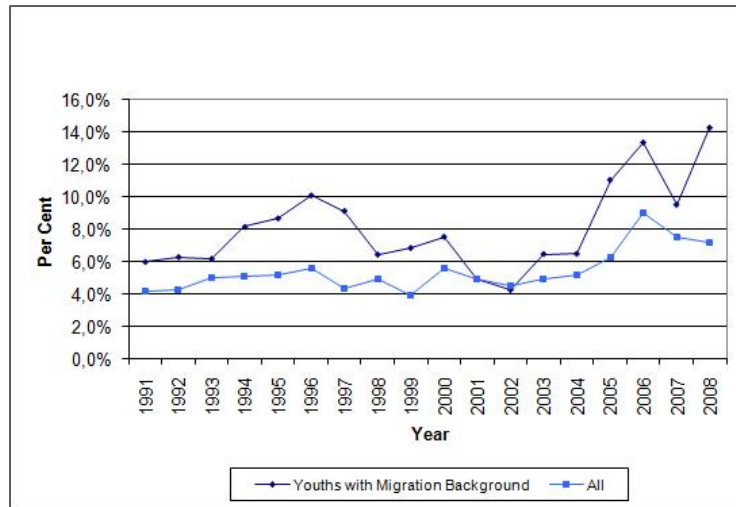
Source: *Sample B* from SOEP, 1991-2008; own calculations; Federal Labour Office statistics.

**Figure 4:** Disconnectedness (DC3) among males and females



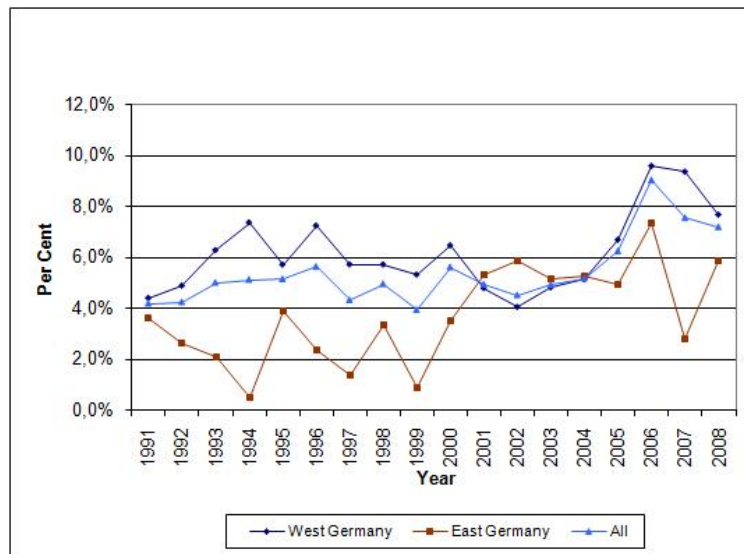
Source: *Sample B* from SOEP, 1991-2008; own calculations.

**Figure 5:** Disconnectedness (DC3) among immigrants and Germans



Source: *Sample B* from SOEP, 1991-2008; own calculations.

**Figure 6:** Disconnectedness (CD3) among East and West Germans



Source: *Sample B* from SOEP, 1991-2008; own calculations.

## Appendix

**Table A1:** Transition matrix for the 17-, 18- and 19-year-olds

		DC3 in t+3		
DC3 in t	0	1	Missings	Total
0	1,647	169	2,103	3,919
%	42.03%	4.31%	53.66%	100.00%
1	71	14	121	206
%	34.47%	6.80%	58.74%	100.00%
<b>Total</b>	<b>1,718</b>	<b>183</b>	<b>2,224</b>	<b>4,125</b>

Source: *Sample B* from SOEP, 1991-2008; own calculations.

**Table A2:** Transition matrix for the 18- and 19-year-olds

		DC3 in t+2		
DC3 in t	0	1	Missings	Total
0	2,792	278	932	4,002
%	69.77%	6.95%	23.29%	100.00%
1	124	39	72	235
%	52.77%	16.60%	30.64%	100.00%
<b>Total</b>	<b>2,916</b>	<b>317</b>	<b>1,004</b>	<b>4,237</b>

Source: *Sample B* from SOEP, 1991-2008; own calculations.

**Table A3:** Robustness of the findings of the multivariate analysis I

<b>Probit Regressions: Disconnectedness (DC1)</b>						
<b>Model</b>	<b>(1)</b>		<b>(2)</b>		<b>(3)</b>	
<b>Variables</b>	<b>dF/dx</b>	<b>z</b>	<b>dF/dx</b>	<b>z</b>	<b>dF/dx</b>	<b>z</b>
<i>female</i>	0.0285	1.55	0.0254	1.43	0.0255	1.44
<i>West</i>	0.0358	1.69	0.0262	1.19	0.0270	1.21
<i>immigrant</i>	0.0346	1.40	0.0384	1.56	-	-
<i>first 15 years not with both parents</i>	-	-	0.0815	3.55	0.0808	3.52
Parental Qualification (2)						
<i>medium educated family</i>	-	-	-0.0590	-2.67	-	-
<i>high educated family</i>	-	-	-0.1126	-5.20	-	-
Parental qualification by migration status (3)						
<i>family low educated German</i>	-	-	-	-	-0.0292	-0.87
<i>family medium educated immigrant</i>	-	-	-	-	-0.0551	-1.43
<i>family medium educated German</i>	-	-	-	-	-0.0851	-2.57
<i>family high educated immigrant</i>	-	-	-	-	-0.0805	-2.30
<i>family high educated German</i>	-	-	-	-	-0.1320	-4.39
	Obs. = 1,335		Obs. = 1,335		Obs. = 1,335	
	Ps. R <sup>2</sup> = 0.03		Ps. R <sup>2</sup> = 0.07		Ps. R <sup>2</sup> = 0.07	
	Wald = 25,27		Wald = 61,40		Wald = 61,17	

Source: *Sample C*, 1,335 observations taken from the SOEP Youth Questionnaire, 2000-2008; own calculations

**Table A4:** Robustness of the findings of the multivariate analysis II

Probit Regressions: Disconnectedness (DC2)						
Model	(1)		(2)		(3)	
Variables	dF/dx	z	dF/dx	z	dF/dx	z
<i>female</i>	0.0242	1.33	0.0215	1.22	0.0215	1.22
<i>West</i>	0.0340	1.62	0.0249	1.14	0.0263	1.19
<i>immigrant</i>	0.0287	1.17	0.0325	1.33	-	-
<i>first 15 years not with both parents</i>	-	-	0.0795	3.48	0.0785	3.44
Parental Qualification (2)						
<i>medium educated family</i>	-	-	-0.0568	-2.57	-	-
<i>high educated family</i>	-	-	-0.1087	-5.03	-	-
Parental qualification by migration status (3)						
<i>family low educated German</i>	-	-	-	-	-0.0251	-0.74
<i>family medium educated immigrant</i>	-	-	-	-	-0.0569	-1.48
<i>family medium educated German</i>	-	-	-	-	-0.0779	-2.35
<i>family high educated immigrant</i>	-	-	-	-	-0.0761	-2.15
<i>family high educated German</i>	-	-	-	-	-0.1261	-4.16
	Obs. = 1,335		Obs. = 1,335		Obs. = 1,335	
	Ps. R <sup>2</sup> = 0.02		Ps. R <sup>2</sup> = 0.06		Ps. R <sup>2</sup> = 0.06	
	Wald = 22,67		Wald = 57,73		Wald = 57,66	

Source: *Sample C*, 1,335 observations taken from the SOEP Youth Questionnaire, 2000-2008; own calculations

**Table A5:** Robustness of the findings of the multivariate analysis III

Probit Regressions: Disconnectedness (DC4)						
Model	(1)		(2)		(3)	
Variables	dF/dx	z	dF/dx	z	dF/dx	Z
<i>female</i>	-0.0090	-0.60	-0.0101	-0.69	-0.0099	-0.68
<i>West</i>	0.0244	1.36	0.0128	0.68	0.0118	0.62
<i>immigrant</i>	0.0414	1.97	0.0398	1.93	-	-
<i>first 15 years not with both parents</i>	-	-	0.0390	2.08	0.0385	2.07
Parental Qualification (2)						
<i>medium educated family</i>	-	-	-0.0540	-2.97	-	-
<i>high educated family</i>	-	-	-0.0811	-4.64	-	-
Parental qualification by migration status (3)						
<i>family low educated German</i>	-	-	-	-	-0.0223	-0.84
<i>family medium educated immigrant</i>	-	-	-	-	-0.0375	-1.23
<i>family medium educated German</i>	-	-	-	-	-0.0770	-2.92
<i>family high educated immigrant</i>	-	-	-	-	-0.0539	-1.98
<i>family high educated German</i>	-	-	-	-	-0.0973	-4.07
	Obs. = 1,335		Obs. = 1,335		Obs. = 1,335	
	Ps. R <sup>2</sup> = 0.02		Ps. R <sup>2</sup> = 0.05		Ps. R <sup>2</sup> = 0.05	
	Wald = 15,93		Wald = 42,11		Wald = 41,32	

Source: *Sample C*, 1,335 observations taken from the SOEP Youth Questionnaire, 2000-2008; own calculations