Understanding Children's Work
An Inter-Agency Research Cooperation Project

NEET youth dynamics in Indonesia and Brazil
A cohort analysis

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Rome
March 2013

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1 Introduction

1. The lack of decent work opportunities for youth is a growing concern worldwide. According to ILO estimates, of the world's estimated 207 million unemployed people in 2009, nearly 40 percent – about 81 million – were between 15 and 24 years of age. But unemployment does not capture the full hardship faced by youth, as many of those who have left education do not even appear in labour market statistics. In addition to the formally unemployed, in many countries there is a large number of youth that are absent from both the labour force and education (including training).[1] In the 26 OECD countries for which data are available, for instance, youth not in education or the labour force numbered 10 million in 2010.

2. Young persons not engaged in education, employment or training, expressed as the acronym "NEET", are being used increasingly in developed economies as a measure of youth marginalisation and disengagement. This measure captures both youth who are unemployed and youth who not in education or the labour force, and therefore is a more comprehensive alternative to narrower measures such as the youth unemployment rate and labour force participation rate for analyzing youth labour market difficulties. The expansion of the focus from unemployment to the broader concept of NEET responds to the need to also consider youth who have given up looking for work or who are unwilling to join the labour market.

3. NEET youth constitute a growing policy concern in developing and industrialised economies alike. Youth disengaged from both formal learning and work miss the opportunity to develop and grow at an age that heavily influences future outcomes. NEET status can permanently impair youths' productive potential and therefore influence lifetime patterns of employment, pay and job tenure. Young people falling into the NEET group, and particularly male youth in this group, frequently find themselves at the margins of society and more vulnerable to risky and violent behaviour. At a macro-economic level, NEET youth constitute unutilised productive capacity and a constraint to growth.

4. Use of the NEET concept for analysing youth labour market issues has to date been limited largely to industrialised countries. Little is therefore known about the situation of NEET youth in developing world. The current paper constitutes part of a three-part study aimed at beginning to fill this gap. It analyzes the dynamics of the NEET youth population in Brazil and Indonesia, drawing on data from the Brazil *Pesquisa Nacional por Amostra de Domicilios* Survey (*PNAD*) and the Indonesia National Labour Force Survey (Sakernas).

5. Brazil and Indonesia have recently experienced sustained growth and structural changes. They have, however, still very different productive structure and human capital stocks. They will offer, therefore, the opportunity to assess the difference in the characteristics of the NEET youth in to countries that are a varying stages of development. It would have been interesting, of course, also to look at the situation in some low income countries, especially in SSA, but the lack of data prevented us from extending the analysis in this direction.

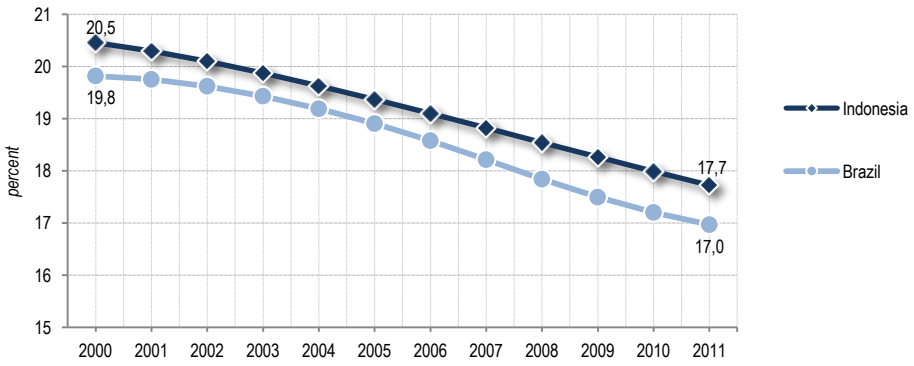
[1] "Education" for the purposes of this report is defined to also include training.

6. In particular, the paper presents a cohort analysis aimed at addressing the question of whether 15-24 year-olds in the two countries born in different years share an equal risk of NEET status. The remainder of the paper is structured as follows. Section 2 provides an overview of the youth population in Brazil and Indonesia and key labour market indicators. Section 3 reports the overall incidence and characteristics in the NEET youth population in the two countries. Section 4 assesses trends in the NEET youth population in the two countries. Section 5 presents descriptive evidence of whether these trends are the reflection of different behaviour across cohorts. Section 6 presents econometric evidence simultaneously taking into account cohort, age and time effects relating to the NEET youth population. Section 7 concludes.

2 Youth in Brazil and Indonesia

7. Youth constitute a large but slowly diminishing proportion of the population in the two countries. Young persons aged 15-24 years accounted for almost 18 percent of the population in Indonesia and 17 percent of the population in Brazil in 2011, in both cases down from the share a decade earlier (Figure 1).

Figure 1. **Youth aged 15-24 years as a percentage of total population, 2000-2011, Indonesia and Brazil**



Source: World Bank, World Development Indicators

8. Aggregate labour market indicators for Brazilian and Indonesian youth are reported in Table 1. Youth labour market participation is especially high in Brazil where almost two of every three young persons are in the labour market. Education participation rates are also higher in Brazil – almost one in two Brazilian youth are still in education. Youth unemployment is high in both countries, accounting for 18 and 19 percent of the active youth in Brazil and Indonesia, respectively.

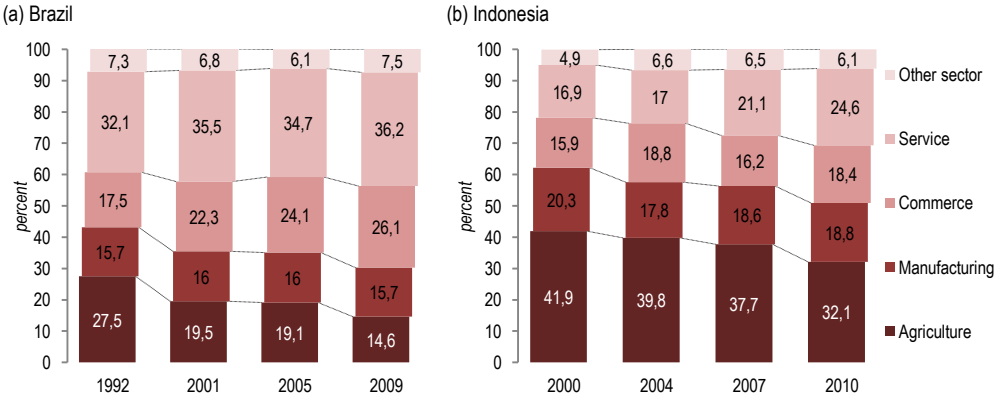
Table 1. **Aggregate labour market indicators, persons aged 15-24 years, by residence, sex, income quintile and age range, Brazil and Indonesia**

			Labour mkt. participation (% pop.)	Education participation (% pop.)	Unemployed (% active)
Brazil	Residence	Urban	62.7	47.9	19.8
		Rural	62.9	45.0	7.8
	Sex	Male	71.3	46.0	13.9
		Female	54.0	48.9	23.1
	Income quintile	Lowest	53.0	44.3	28.5
		Highest	66.0	56.2	12.3
	Total		62.7	47.4	17.9
Indonesia	Residence	Urban	46.9	42.6	21.5
		Rural	47.8	31.6	16.1
	Sex	Male	55.9	36.9	17.9
		Female	38.7	36.5	19.6
	Total		47.4	36.7	18.6

Source: UCW calculations based on Dominican Republic Encuesta Nacional de Hogares de Propositòs Mùltiples, 2009.

9. Aggregate labour market indicators decomposed by sex, residence and income quintile are also reported in Table 1. The largest difference by sex is in labour force participation – male youth are much more likely to be economically active than their female peers in both countries. Urban youth face agreater risk of unemployment compared to those living in rural areas in both countries. In Indonesia, differences in education participation by residence are also large, with urban youth much more likely to still be continuing with their studies. The decomposition by income quintile, available only for Brazil, indicates that youth from better-off households are more likely to participate in both the labour force and in education, and are less likely to be unemployed.

Figure 2. **Changes in the sectoral composition of youth employment, Brazil and Indonesia**



Source: UCW calculations based on Brazil PNAD survey, 1992, 2001, 2005 and 2009 and Indonesia Sakernas surveys, 2000, 2004, 2007 and 2010

10. Figure 2 reports changes in the sectoral composition of youth employment in Brazil and Indonesia. Youth in both countries have seen a significant shift away from primary towards tertiary sector employment in keeping with broader economic trends. The share of youth working in agriculture has fallen considerably, while the share working in

commerce and in services has risen steadily, in both countries over the course of the last decade.

3 NEET youth

11. This section assesses overall incidence and characteristics in the NEET youth population in Brazil and Indonesia. NEET youth constitute an important part of the overall youth population in both countries, accounting for 23 percent of all Brazilian youth in 2009 and for 28 percent of all Indonesian youth in 2010 (Table 1). In Brazil, NEET youth are more likely to reside in rural than in urban areas and are much more likely to be from low-income households. In Indonesia, by contrast, NEET status is more common for young persons who are urban residents. In both countries, NEET status is much more prevalent among female compared to male youth, product of the fact that the NEET category includes persons at home undertaking domestic responsibilities.[2]

Table 1. **NEET youth, by components, sex and residence, Brazil and Indonesia, most recent year[(a)]**

			(a) Not in education or labour force	(b) Unemployed	(a&b) NEET
Brazil	Sex	Male	6.5	9.9	16.4
		Female	17.5	12.5	30.0
	Residence	Rural	14.2	4.9	19.2
		Urban	11.5	12.4	23.9
	Income quintile	Lowest	36.4	15.1	21.3
		Highest	14.0	8.1	5.9
	Total		12.0	11.2	23.2
Indonesia	Sex	Male	10.3	10.0	20.2
		Female	27.2	7.6	34.8
	Residence	Rural	23.5	7.7	31.2
		Urban	13.1	10.1	23.1
	Total		18.7	8.8	27.5

Notes: Most recent year in Brazil is 2009 and in Indonesia 2010.
Source: UCW calculations based on Brazil PNAD survey 2009 and Indonesia Sakernas survey 2010.

12. The NEET youth population can be divided into two main constituent parts – those who are not in education or the labour force and those who are unemployed. In Brazil, the size of these two groups was roughly equal in 2009 – 11 percent of all youth were unemployed and 12 percent were not in school or the labour force. The difference in the size of the two components of the NEET population was much larger in Indonesia. Nineteen percent of Indonesian youth were not in school or the labour force in 2010, while only nine percent were unemployed.

13. In both countries, females are much more likely to be absent from education and the labour force, again owing to the greater tendency for female youth to remain at home to undertake domestic responsibilities after leaving education. Differences in unemployment by sex are smaller

[2] For a more complete discussion of this point, see: UCW Programme, *At the margins: NEET youths in the developing world.* UCW Programme working paper, March 2012.

– unemployment is slightly higher among male youth in Indonesia and among female youth in Brazil.

14. Patterns by residence are similar for the two countries: the share of unemployed youth is higher in urban compared to rural areas (especially in Brazil) and the share of youth not in education or the labour force is higher in rural than in urban areas (especially in Indonesia). These patterns are suggestive of underlying differences in the rural and urban labour markets in the two countries.

4 NEET youth trends

15. Trend data indicate very small overall declines in the NEET youth population in the two countries during the decade beginning in 2000 (Figure 3 and Figure 4). A closer look at yearly changes in NEET youth in Brazil shows that a downward trend beginning at mid-decade was interrupted in 2008-2009, the years coinciding with the global economic crisis when country's growth was negative. The gap in NEET incidence between rural and urban areas in Brazil narrowed slightly over the decade, but differences in NEET status by sex and income changed little (Appendix Figure A1)

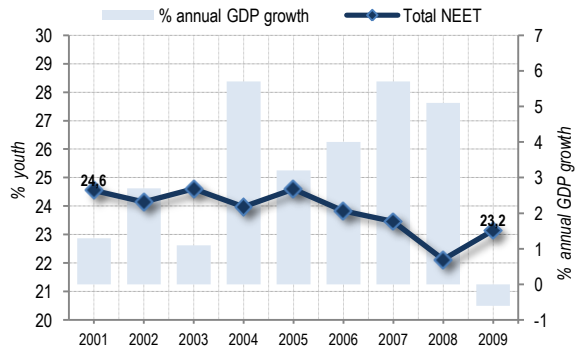
16. Yearly changes in Indonesia show a gradual decline in NEET incidence beginning in 2003 uninterrupted by the economic slowdown during 2008-2009. More detailed breakdowns show that the downward trend in Indonesia was most pronounced among urban and female youth (Appendix Figure A4).

17. In both countries, the overall changes in the NEET youth disguised different trends for the two components of the NEET youth population (i.e, those unemployed and those not in education or the labour force). In Brazil, the two components of the NEET population moved in opposite directions in most years. The overall in decline in NEET incidence from 2005 to 2008, and the reversal during 2008-2009, were both driven by the unemployed component of the NEET youth population. Similarly in Indonesia, the small overall decline in the NEET population during latter half of the decade was driven primarily by a fall in unemployed youth; the share of youth not in education or the labour force varied only slightly in this period.

18. Appendix Figures A1 – A6 describe changes in the two components of the NEET population in more detail.

Figure 3. **NEET youth, unemployed youth and youth not in education or labour force, BRAZIL 2001-2009 period**

(a) NEET and per capita GDP



(b) Unemployed youth and youth not in education or labour force

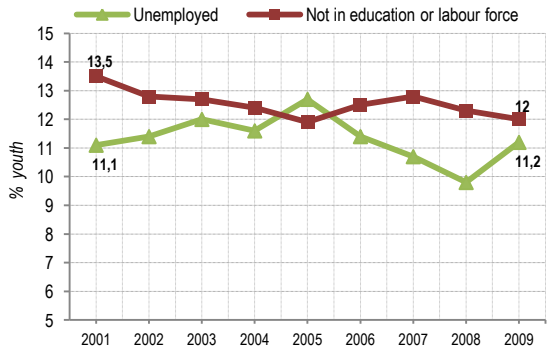
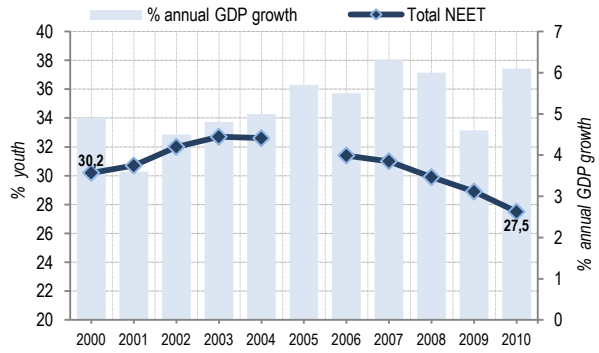
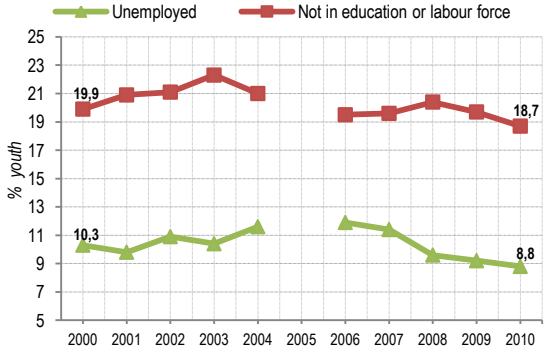


Figure 4. **NEET youth, unemployed youth and youth not in education or labour force, INDONESIA, 2000-2010 period**

(a) NEET and per capita GDP



(b) Unemployed youth and youth not in education or labour force

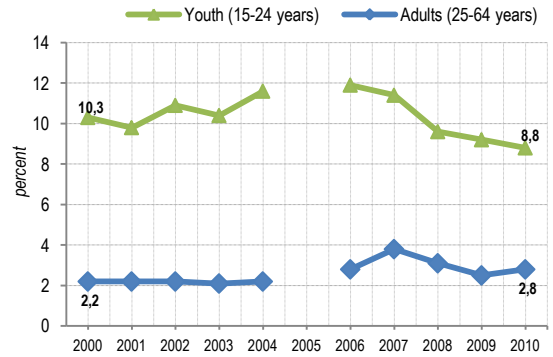


Note: PNAD surveys for the years 2001, 2002 and 2003 do not cover the rural areas of the six Northern states (Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá).
Source: UCW calculations based on Brazil PNAD surveys, 2001-2009 and Indonesia Sakernas surveys, 2010, 2009, 2008, 2007, 2006, 2004, 2003, 2002 and 2001.

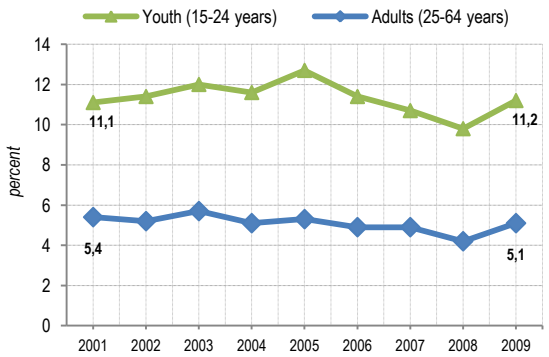
19. Figure 5 compares unemployment trends for youth and adults over the course of the last decade. It indicates that in both countries youth unemployment is both much higher and more volatile than adult unemployment. This points to the existence of unique challenges, above and beyond aggregate labour demand, facing young people in securing employment.

Figure 5. **Unemployment ratio, by age range and year, Brazil and Indonesia**

(a) Indonesia



(b) Brazil



Note: PNAD surveys for the years 2001, 2002 and 2003 do not cover the rural areas of the six Northern states (Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá).
Source: UCW calculations based on Brazil PNAD surveys, 2001-2009 and Indonesia Sakernas surveys, 2010, 2009, 2008, 2007, 2006, 2004, 2003, 2002 and 2001.

5 NEET status and cohort effects: descriptive evidence

20. The next two sections address the question of whether 15-24 year-olds born in different years share an equal risk of NEET status. In other words, whether or not there are cohort effects relating to NEET status among youth. For this purpose data are used from Brazil PNAD survey for the period from 1992 to 2009 and Indonesia Sakernas survey from 2000 to 2010. Cohorts are defined by the year of birth. The activity status of each cohort is considered during the age range from 15 to 24 years.

Whether or not the given cohort is observed at the given age depends on the availability of data for the corresponding survey year.

21. The current section reports descriptive evidence of possible cohort effects in the two countries. The subsequent section presents more robust econometric evidence simultaneously taking into account age, cohort and time effects and controlling for the socio-demographic variables.

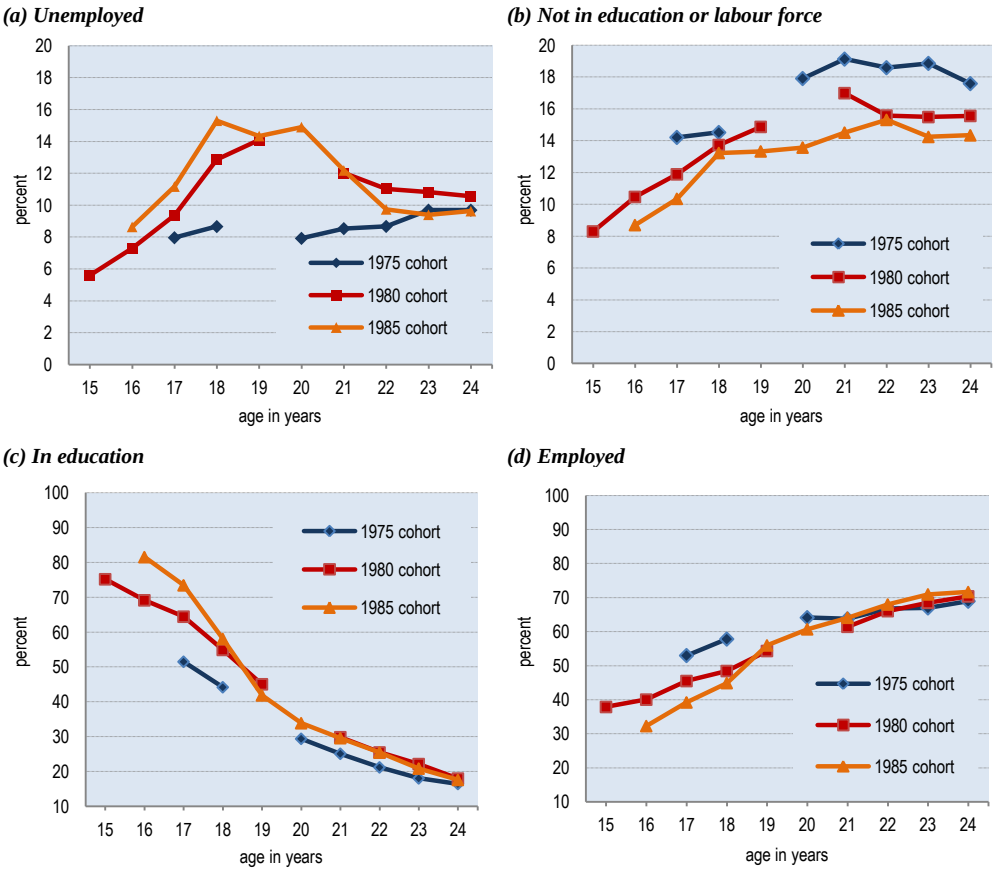
Brazil

22. The following three cohorts of individuals are considered in Brazil: those born in 1970, in 1980 and in 1985. The first cohort was aged 15-24 years in the period from 1985 to 1994, the second cohort in the period from 1995 to 2004, and the third cohort was aged 15-24 years in the period from 2000 to 2009.

23. Figure 6 depicts the cohort effects for NEET youth in Brazil graphically. The horizontal axes report the age from 15 to 24 years for the specified cohorts. The vertical axes give the percentage of each youth cohort in (a) unemployment, (b) neither education nor the labour force, (c) in education, and (d) in employment. The distance between cohort curves in each graph shows the cohort effect. Overall, the graphical evidence suggests a general increase in the risk of unemployment across cohorts and a decreasing likelihood across cohorts among female youth of absence from both education and the labour force.

24. **Unemployment.** Figure 6(a) suggests that youth from earlier cohorts, and especially 15-20 year-olds from earlier cohorts, faced a lower risk of unemployment. For example, the unemployment ratio of 18 year-olds born in 1985 was 15 percent while the unemployment ratio of 18 year-olds born in 1975 was nine percent. This cohort pattern for unemployment holds true both for male males and female youth (Appendix Figure A7).

Figure 6. **Youth time use, by birth cohort, age and sex, Brazil**



Note: *PNAD surveys for the years 1992, 1993, 1995-1999 and 2001-2003 do not cover the rural areas of the six Northern states (Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá).
Source: UCW calculations based on Brazil PNAD surveys, 1992, 1993, 1995-1999 and 2001-2009

25. **Not in education or labour force**. Figure 6(b) points to a substantial decrease across cohorts in the likelihood of being absent from both education and the labour force. A further breakdown by sex, however, indicates that these cohorts effects relate only to female youth (Appendix Figure A1), suggesting important underlying changes in the role of female youth in society over time. This negative cohort effect is more pronounced for females at the upper end of the 15-24 years age spectrum, and is more pronounced moving from the 1975 to the 1980 birth cohorts. No cohort effect, on the other hand, is apparent for male youth who are not in education or the labour force.

26. **Education**. Figure 6(c) indicates an increase in involvement in education across cohorts. Cohort differences in education are largest among young people at the lower end of the 15-24 years age spectrum and are most marked moving from the 1975 to 1980 birth cohort. The school attendance of 17 year-olds born in 1975, for instance, was 52 percent, rising to 64 percent for 17 year-olds born in 1980 and to 73 percent for 17 year-olds born in 1985. Patterns were similar for male and female youth (Appendix Figure A1). These results suggest that more youth over time are staying in education longer before entering the labour force.

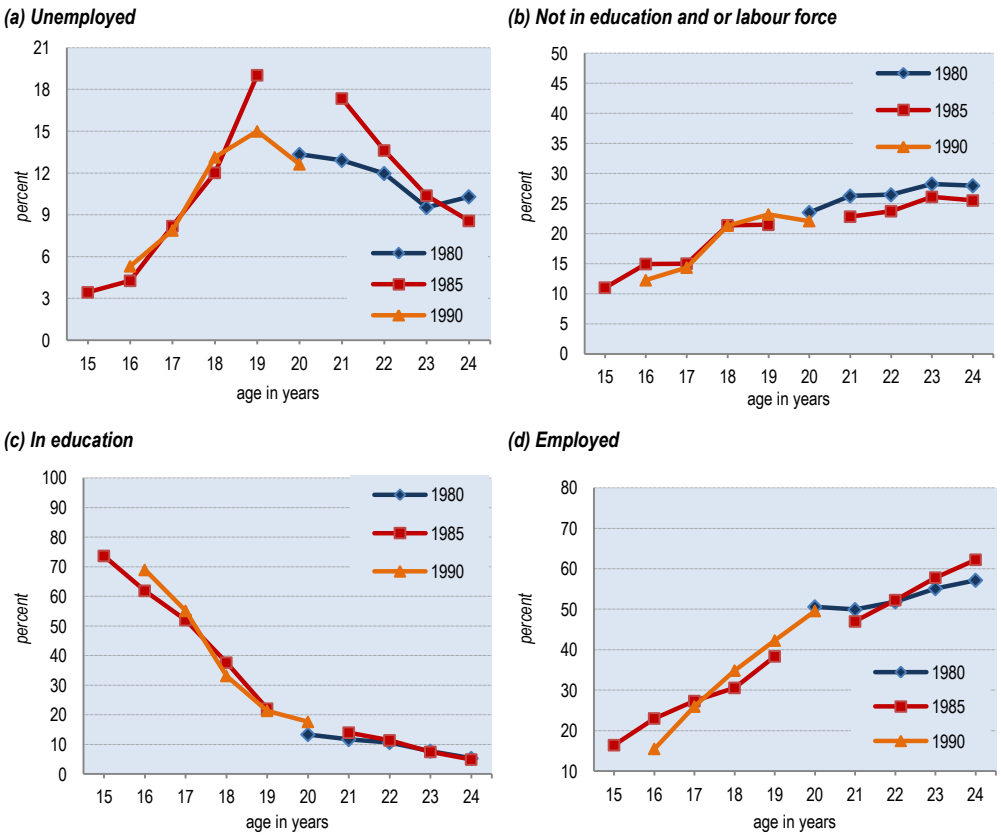
27. **Employment**. Figure 6(d) indicates lower involvement in employment across cohorts for young persons at the lower end of the 15-24 years age spectrum. At age 17 years, for instance, 53 percent of the 1975 birth cohort was in employment, compared to 46 percent of the 1980 birth cohort and 39 percent of the 1985 birth cohort. Of note, female youth are slightly *more* likely to work over time at the upper end of the 15-24 years age spectrum (Appendix Figure A1). Again, this hints at the changing societal opportunities for females over time, and specifically their greater possibilities to stay in education and to enter the labour force upon graduating.

Indonesia

28. The following three cohorts of individuals are considered in Indonesia: those born in 1980, in 1985 and in 1990. The first cohort was aged 15-24 in the period from 1995 to 2004, the second cohort was aged 15-24 in the period from 2000 to 2009, and the third cohort was aged 15-24 in the period from 2005 to 2014. Figure 7 depicts the cohort effects for Indonesian youth who are (a) unemployed, (b) neither education nor the labour force, (c) in education, and (d) in employment.

29. **Unemployment**. Figure 7(a) does not indicate any consistent cohort effect for unemployment for Indonesian youth. At the ages in which the cross-cohort differences in unemployment are largest, it is most often the middle (1985) cohort that has the highest level of unemployment.

Figure 7. **Youth time use, by birth cohort, age and sex, Indonesia**



Source: UCW calculations based on Indonesia Sakernas surveys, 2000-2004 and 2006-2010.

30. **Not in education or labour force.** Figure 7(b) suggests a decrease across cohorts in the share of youth not in education or the labour force, but only at the upper end of the 15-24 years age spectrum. A decomposition of the youth population by sex, however, indicates that this cohort effect is limited to female youth falling in the upper end of the (Appendix Figure A8). Female youth in the 1985 birth cohort aged at least 20 years are less likely to be absent from education and the labour force compared to female youth in the earlier (1980) birth cohort. There is no clear cohort effect on the other hand among male youth not in education or the labour force anywhere on the 15-24 years age spectrum.

31. **Education**. Figure 7(c) indicates that differences over cohorts for education involvement are limited and not consistent across the 15-24 years age spectrum. Education involvement, for instance, increases slightly across cohorts for 16, 17 and 20 year-olds, but the opposite pattern prevails for 18 year-olds.

32. **Employment**. Figure 7(d) points to different cohort effects for youth employment across the 15-24 years age spectrum. Overall, employment has decreased for 16-17 year-olds and for 20-21 year-olds and increased for 18-19 year-olds and for 22-24 year-olds.

6 NEET status and cohort effects: econometric evidence

33. Although the descriptive evidence presented above is useful in obtaining general qualitative impressions about age and cohort patterns, the analytical value of this evidence is limited by the fact that it does not disentangle cohort from age and time effects, and does not take into account the possibly confounding effects of background socio-demographic factors. In this section, more robust econometric evidence is presented simultaneously taking into account age, cohort and time effects and controlling for key socio-demographic variables. Since unemployed youth and youth not in education or the labour force demonstrate very different cohort effects in both Brazil and Indonesia, the estimation results for these two components of the NEET population are again looked at separately.

Brazil

34. The probability is estimated of being absent from education and the labour force and of being unemployed over the years from 1992 to 2009 for Brazilian youth aged 15-24 years in that period. A total 27 birth cohorts of youth can be defined during 1992-2009 period, the oldest cohort born in 1968 and the youngest cohort born in 1994.

35. **Not in education or labour force.** Table 2 reports the marginal effects after the probit estimates of the probability of being absent from education and the labour force for the total population of Brazilian youth aged 15-24 years. The age, cohort and time effects are separated and key socio-demographic variables are controlled for.[3]

[3] The linear age, cohort and time effects can not be identified without further restrictions. After some preliminary analysis we impose the effects of the two oldest cohorts (born in 1968 and in 1969) to be equal.

Table 2. **Determinants of youth not in the labour force or education, Brazilian youth aged 15-24 years, marginal effects after Probit estimates[(a)].**

Explanatory variables		Not in labour force or education					
		Total		Males		Females	
		Coeff.	t	Coeff.	t	Coeff.	t
Age	Age16	**0.0241**	**4.31**	0.0005	0.08	**0.0443**	**4.35**
	Age17	**0.0443**	**3.77**	-0.0023	-0.18	**0.0815**	**3.85**
	Age18	**0.0678**	**3.56**	-0.0037	-0.20	**0.1222**	**3.64**
	Age19	**0.0642**	**2.56**	-0.0179	-0.89	**0.1310**	**2.90**
	Age20	**0.0567**	**1.86**	-0.0283	-1.37	**0.1281**	**2.28**
	Age21	0.0434	1.25	**-0.0377**	**-1.90**	**0.1144**	**1.73**
	Age22	0.0301	0.78	**-0.0448**	**-2.39**	0.0999	1.32
	Age 23	0.0198	0.47	**-0.0498**	**-2.78**	0.0894	1.05
	Age 24	0.0069	0.16	**-0.0548**	**-3.46**	0.0756	0.81
Cohort	Cohort 1970	-0.0078	-1.16	-0.0092	-1.15	-0.0098	-0.78
	Cohort 1971	**-0.0188**	**-1.91**	**-0.0197**	**-1.86**	-0.0271	-1.43
	Cohort 1972	**-0.0291**	**-2.31**	**-0.0277**	**-2.28**	-0.0405	-1.62
	Cohort 1973	**-0.0359**	**-2.36**	**-0.0312**	**-2.20**	**-0.0536**	**-1.77**
	Cohort 1974	**-0.0446**	**-2.62**	**-0.0384**	**-2.84**	**-0.0650**	**-1.85**
	Cohort 1975	**-0.0473**	**-2.40**	**-0.0425**	**-3.12**	-0.0675	-1.63
	Cohort 1976	**-0.0518**	**-2.40**	**-0.0448**	**-3.19**	**-0.0758**	**-1.67**
	Cohort 1977	**-0.0578**	**-2.51**	**-0.0479**	**-3.40**	**-0.0872**	**-1.80**
	Cohort 1978	**-0.0632**	**-2.64**	**-0.0508**	**-3.87**	**-0.0963**	**-1.88**
	Cohort 1979	**-0.0677**	**-2.73**	**-0.0533**	**-4.38**	**-0.1036**	**-1.93**
	Cohort 1980	**-0.0726**	**-2.82**	**-0.0565**	**-4.70**	**-0.1104**	**-1.94**
	Cohort 1981	**-0.0770**	**-2.95**	**-0.0585**	**-5.19**	**-0.1175**	**-2.01**
	Cohort 1982	**-0.0819**	**-3.15**	**-0.0607**	**-5.63**	**-0.1252**	**-2.11**
	Cohort 1983	**-0.0848**	**-3.26**	**-0.0619**	**-6.13**	**-0.1296**	**-2.13**
	Cohort 1984	**-0.0887**	**-3.53**	**-0.0630**	**-6.78**	**-0.1357**	**-2.25**
	Cohort 1985	**-0.0918**	**-3.68**	**-0.0644**	**-6.88**	**-0.1410**	**-2.32**
	Cohort 1986	**-0.0947**	**-3.85**	**-0.0657**	**-6.89**	**-0.1459**	**-2.39**
	Cohort 1987	**-0.0966**	**-4.20**	**-0.0650**	**-7.69**	**-0.1501**	**-2.55**
	Cohort 1988	**-0.0968**	**-4.27**	**-0.0642**	**-8.41**	**-0.1504**	**-2.54**
	Cohort 1989	**-0.0978**	**-4.66**	**-0.0629**	**-9.69**	**-0.1531**	**-2.69**
	Cohort 1990	**-0.0987**	**-5.23**	**-0.0616**	**-11.57**	**-0.1546**	**-2.84**
	Cohort 1991	**-0.0999**	**-6.15**	**-0.0601**	**-14.17**	**-0.1585**	**-3.25**
	Cohort 1992	**-0.1012**	**-7.75**	**-0.0588**	**-17.68**	**-0.1628**	**-3.92**
	Cohort 1993	**-0.1012**	**-9.34**	**-0.0569**	**-25.54**	**-0.1651**	**-4.63**
	Cohort 1994	**-0.1015**	**-12.98**	**-0.0550**	**-45.67**	**-0.1692**	**-6.69**
Socio-demographic characteristics	Female	**0.1318**	**216.90**	**-**	**-**		
	Rural	**-0.0194**	**-16.10**	**-0.0327**	**-33.33**	0.0002	0.08
	Years of primary education	**-0.0183**	**-132.41**	**-0.0104**	**-79.52**	**-0.0278**	**-103.71**
	White	**0.0301**	**4.37**	0.0057	0.84	**0.0576**	**4.56**
	Black	**0.0149**	**2.00**	0.0022	0.32	**0.0277**	**2.02**
	Yellow	**0.0313**	**2.96**	**0.0233**	**1.99**	**0.0441**	**2.43**
	Mixed	**0.0269**	**3.94**	0.0028	0.41	**0.0542**	**4.29**
	Household size	0.0003	1.58	**0.0107**	**54.80**	**-0.0096**	**-23.88**
	Number of children aged 0-4	**0.0419**	**92.78**	**-0.0186**	**-34.20**	**0.0970**	**114.20**
	Number of children aged 5-14	**-0.0112**	**-27.23**	**-0.0122**	**-32.38**	**-0.0118**	**-15.15**
	Logarithm of household income	**-0.0317**	**-81.76**	**-0.0200**	**-48.87**	**-0.0444**	**-64.66**
	Adult unemployment rate	**0.2130**	**10.90**	**0.2691**	**13.39**	**0.1004**	**2.82**
	North-East	**-0.0149**	**-15.05**	**-0.0084**	**-8.37**	**-0.0213**	**-11.66**
	South-East	**-0.0036**	**-3.49**	-0.0006	-0.53	**-0.0071**	**-3.76**
	South	**-0.0087**	**-7.23**	0.0019	1.44	**-0.0208**	**-9.71**
	Centre-West	**-0.0028**	**-2.35**	**-0.0047**	**-3.86**	-0.0021	-0.95
Time dummies		Yes		Yes		Yes	

Note: (a) Statistically significant results presented in bold. Reference categories are the following. Age: 15; Cohort: 1968; Year: 1992. Constraint: cohort_1968=cohort_1969. Race: Indigenous; Region : North

Source: UCW calculations based on Brazil PNAD survey, 1992, 1993,1995-1999 and 2001-2009

Table 3. **Determinants of youth unemployment, Brazilian youth aged 15-24 years, marginal effects after Probit estimates[(a)].**

Explanatory variables		Not in labour force or education					
		Total		Males		Females	
		Coeff.	t	Coeff.	t	Coeff.	t
Age	Age16	**0.0325**	**4.99**	**0.0323**	**3.49**	**0.0337**	**3.46**
	Age17	**0.0529**	**3.76**	**0.0526**	**2.62**	**0.0549**	**2.65**
	Age18	**0.0801**	**3.43**	**0.0819**	**2.43**	**0.0812**	**2.38**
	Age19	**0.0842**	**2.65**	**0.0865**	**1.89**	**0.0854**	**1.85**
	Age20	**0.0786**	**2.01**	0.0878	1.53	0.0737	1.34
	Age21	0.0725	1.57	0.0839	1.23	0.0661	1.02
	Age22	0.0613	1.19	0.0761	0.98	0.0522	0.73
	Age 23	0.0556	0.96	0.0750	0.85	0.0430	0.54
	Age 24	0.0510	0.80	0.0706	0.72	0.0378	0.44
Cohort	Cohort 1970	0.0029	0.35	0.0082	0.69	-0.0029	-0.25
	Cohort 1971	0.0029	0.21	0.0174	0.85	-0.0103	-0.58
	Cohort 1972	0.0062	0.32	0.0181	0.63	-0.0043	-0.17
	Cohort 1973	0.0080	0.32	0.0202	0.54	-0.0024	-0.07
	Cohort 1974	0.0078	0.25	0.0266	0.55	-0.0079	-0.20
	Cohort 1975	0.0108	0.29	0.0363	0.60	-0.0096	-0.20
	Cohort 1976	0.0136	0.31	0.0459	0.63	-0.0115	-0.21
	Cohort 1977	0.0223	0.42	0.0597	0.67	-0.0063	-0.10
	Cohort 1978	0.0284	0.47	0.0705	0.68	-0.0033	-0.05
	Cohort 1979	0.0302	0.45	0.0807	0.67	-0.0062	-0.08
	Cohort 1980	0.0300	0.40	0.0883	0.66	-0.0111	-0.13
	Cohort 1981	0.0348	0.42	0.1022	0.67	-0.0111	-0.12
	Cohort 1982	0.0362	0.40	0.1106	0.65	-0.0134	-0.14
	Cohort 1983	0.0361	0.37	0.1127	0.61	-0.0142	-0.14
	Cohort 1984	0.0323	0.32	0.1188	0.59	-0.0222	-0.21
	Cohort 1985	0.0322	0.30	0.1250	0.58	-0.0249	-0.23
	Cohort 1986	0.0327	0.28	0.1335	0.57	-0.0276	-0.25
	Cohort 1987	0.0318	0.26	0.1403	0.55	-0.0310	-0.27
	Cohort 1988	0.0342	0.26	0.1517	0.55	-0.0320	-0.27
	Cohort 1989	0.0340	0.25	0.1630	0.54	-0.0358	-0.30
	Cohort 1990	0.0321	0.23	0.1662	0.52	-0.0384	-0.32
	Cohort 1991	0.0298	0.20	0.1726	0.51	-0.0424	-0.35
	Cohort 1992	0.0190	0.13	0.1660	0.47	-0.0513	-0.47
	Cohort 1993	0.0147	0.10	0.1655	0.45	-0.0546	-0.51
	Cohort 1994	-0.0008	-0.01	0.1528	0.41	-0.0655	-0.74
Socio-demographic characteristics	Female	**0.0098**	**17.55**	-	-	-	-
	Rural	**-0.0451**	**-41.47**	**-0.0521**	**-40.77**	**-0.0366**	**-22.51**
	Years of primary education	**0.0090**	**59.82**	**0.0082**	**43.19**	**0.0104**	**43.01**
	White	-0.0085	-1.44	-0.0052	-0.63	-0.0112	-1.33
	Black	**0.0123**	**1.89**	0.0110	1.21	0.0144	1.54
	Yellow	**-0.0152**	**-2.23**	-0.0150	-1.56	-0.0156	-1.62
	Mixed	-0.0031	-0.52	-0.0023	-0.28	-0.0033	-0.39
	Household size	**0.0149**	**79.43**	**0.0163**	**64.86**	**0.0138**	**49.74**
	Number of children aged 0-4	**-0.0206**	**-43.67**	**-0.0281**	**-39.30**	**-0.0156**	**-24.15**
	Number of children aged 5-14	**-0.0146**	**-39.23**	**-0.0171**	**-35.10**	**-0.0122**	**-21.78**
	Logarithm of household income	**-0.0415**	**-115.35**	**-0.0450**	**-89.79**	**-0.0380**	**-74.01**
	Adult unemployment rate	**1.0695**	**59.09**	**0.9758**	**39.66**	**1.1549**	**43.69**
	North-East	**-0.0080**	**-8.18**	**-0.0054**	**-4.04**	**-0.0107**	**-7.50**
	South-East	**0.0267**	**24.23**	**0.0245**	**16.62**	**0.0286**	**18.07**
	South	**0.0377**	**25.55**	**0.0312**	**15.97**	**0.0442**	**20.67**
	Centre-West	**0.0217**	**16.11**	**0.0199**	**10.91**	**0.0230**	**11.86**
Time dummies		Yes		Yes		Yes	

Note: (a) Statistically significant results presented in bold. Reference categories are the following. Age: 15; Cohort: 1968; Year: 1992. Constraint: cohort_1968=cohort_1969. Race: Indigenous; Region: North

Source: UCW calculations based on Brazil PNAD survey, 1992, 1993,1995-1999 and 2001-2009

36. *Cohort effect***.** The probability of absence from education and the labour force has decreased over the generations. For instance, the probability of absence from education and the labour force is five percentage points lower for the 1976 birth cohort and 10 percentage points lower for the 1994 birth cohort than the probability of absence from education and the labour force for the 1968 birth cohort.

37. The negative cohort effect is very substantial for female youth, consistent with the descriptive evidence presented above, and again pointing to the changing opportunities for female youth in society. The probability of absence from education and the labour force is 17 percentage points lower for the females born in 1994 than for the females born in 1968. The cohort effect for males is less pronounced than for females. The cohort trend is strictly negative for the 1970-1986 male birth cohorts and positive but very flat for the 1987-1994 male birth cohorts.

38. *Age effect.* The age effect is statistically significant and positive for female youth aged 15-19 years. The probability of absence from education and the labour force is 13 percentage points higher for females aged 19 years than for females aged 15 years. On contrary, the age effect for male youth aged 21-24 years is negative but very flat. Males aged 21-24 years are about five percentage points less likely to be absent from education and the labour force than males aged 15 years. The age effect for the oldest age group of females and for the youngest age group of males is not statistically significant.

39. *Time effect.* The time effect is positive but is not statistically significant for most years.

40. *Socio-demographic characteristics.* Youth in rural areas are less likely to be absent from education and the force than their urban counterparts. The likelihood of absence from education and the labour force also depends to a large extent on the region where they live. Youth from the Northern region (the omitted group) have the highest probability of being absent from education and the labour force.

41. More years of primary school are associated with a lower probability of absence from education and the labour force. There are differences across ethnic groups, with indigenous youth (the omitted group) displaying the lowest probability of absence from education and the labour force.

42. Household characteristics also seem to matter. Larger household size is associated with a lower probability of absence from the education and the labour force for females aged 15-24 years and with a higher probability of absence from the education and the labour force for males aged 15-24 years. A larger number of children aged 0-4 years in the household is associated with a higher probability of absence from education and the labour force for female youth. A higher income level leads to a decrease in the probability of youth being absent from education and the labour force.

43. The local labour market conditions also affect youth time use. A higher unemployment rate of the adult population aged 25-55 years is associated with a higher probability of absence from the education and the labour force Brazilian youth.

44. **Unemployment.** Table 3 reports the marginal effects after the probit estimates of the probability of being unemployed for youth aged 15-24 years in Brazil.

45. *Cohort effect***.** The estimation results do not indicate any significant cohort effect on the youth unemployment in Brazil.

46. *Age effect***.** The age effect is statistically significant and positive for both sexes aged 15-19 years. The probability of unemployment is 8 percentage points higher for youth aged 19 years than for youth aged 15 years. The age effect for the oldest age groups is not statistically significant for either sex.

47. *Time effect***.** The estimation results do not indicate any significant time effect on the youth unemployment in Brazil.

48. *Socio-demographic characteristics.* Youth living in cities and towns are more likely to be unemployed than youth living in rural areas, again pointing to underlying differences in the rural and urban labour markets. The probability of youth unemployment also depends to a large extent on the region where young people reside. Young people aged 15-24 from the North-eastern region have the lowest probability of being unemployed.

49. More years of primary school are associated with a higher probability of unemployment. Household characteristics again also seem to matter. A larger number of children in the household is associated with a lower probability of unemployment for both sexes. A higher income level leads to a decrease in the probability of youth unemployment in Brazil. Not surprisingly, a higher unemployment rate among the adult population aged 25-55 years is associated with substantially higher probability of unemployment for Brazilian youth.

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50. The probability is estimated of being unemployed and of being absent from education and the labour force over the period from 2000 to 2010 for Indonesian youth aged 15-24 years in that period. A total of 20 birth cohorts of youth can be defined during 2000-2010 period, the oldest cohort born in 1976 and the youngest cohort born in 1995. The age, cohort and time effects are separated and socio-demographic variables are controlled for.[4]

51. **Not in education or labour force**. Table 4 reports the marginal effects after the probit estimates of the probability of being absent from education and the labour force for youth aged 15-24 years in Indonesia.

52. *Cohort effect***.** The probability of absence from education and the labour force has decreased over birth cohorts (with exception of the three youngest cohorts) for male youth. For instance, the probability of absence from education and the labour force is eight percentage points lower for the 1986 birth cohort, and 11 percentage points lower for the 1992 birth cohort, than for the 1976 birth cohort. The negative cohort effect for females is higher than that for males, but the cohort effect is not statistically significant in the case of females.

[4] The linear age, cohort and time effects can not be identified without further restrictions. After some preliminary analysis we impose the effects of the two oldest cohorts (born in 1976 and in 1977) to be equal.

Table 4. **Determinants of youth not in the labour force or education, Indonesian youth aged 15-24 years, marginal effects after Probit estimates[(a)]**

Explanatory variables		Not in labour force or education					
		Total		Males		Females	
		Coeff.	t	Coeff.	t	Coeff.	t
Age	Age16	**0.0218**	**2.15**	-0.0048	-0.36	**0.0477**	**2.76**
	Age17	**0.0481**	**2.26**	-0.0112	-0.43	**0.1041**	**2.92**
	Age18	**0.1113**	**3.10**	-0.0019	-0.05	**0.2113**	**3.77**
	Age19	**0.1255**	**2.54**	-0.0126	-0.25	**0.2480**	**3.30**
	Age20	**0.1202**	**1.98**	-0.0406	-0.82	**0.2800**	**3.00**
	Age21	0.1070	1.49	-0.0561	-1.17	**0.2792**	**2.48**
	Age22	0.0983	1.19	**-0.0728**	**-1.71**	**0.2937**	**2.25**
	Age 23	0.0940	1.00	**-0.0814**	**-2.01**	**0.3035**	**2.03**
	Age 24	0.0857	0.83	**-0.0894**	**-2.45**	**0.3066**	**1.83**
Cohort	Cohort 1978	-0.0110	-0.86	-0.0194	-1.19	-0.0076	-0.34
	Cohort 1979	-0.0145	-0.70	-0.0248	-0.97	-0.0045	-0.12
	Cohort 1980	-0.0238	-0.84	-0.0332	-1.01	-0.0176	-0.34
	Cohort 1981	-0.0394	-1.17	-0.0446	-1.24	-0.0383	-0.60
	Cohort 1982	-0.0490	-1.24	-0.0514	-1.29	-0.0541	-0.72
	Cohort 1983	-0.0585	-1.30	-0.0617	-1.53	-0.0648	-0.74
	Cohort 1984	-0.0670	-1.34	-0.0670	-1.52	-0.0795	-0.81
	Cohort 1985	-0.0736	-1.32	-0.0741	-1.61	-0.0858	-0.78
	Cohort 1986	-0.0834	-1.40	**-0.0822**	**-1.77**	-0.0974	-0.80
	Cohort 1987	-0.0886	-1.39	**-0.0867**	**-1.90**	-0.1037	-0.79
	Cohort 1988	-0.0943	-1.41	**-0.0909**	**-2.12**	-0.1097	-0.78
	Cohort 1989	-0.1004	-1.45	**-0.0947**	**-2.31**	-0.1190	-0.80
	Cohort 1990	-0.1060	-1.46	**-0.0996**	**-2.45**	-0.1243	-0.78
	Cohort 1991	-0.1140	-1.57	**-0.1029**	**-2.66**	-0.1395	-0.86
	Cohort 1992	-0.1174	-1.55	**-0.1050**	**-2.705**	-0.1453	-0.86
	Cohort 1993	-0.1186	-1.58	**-0.1025**	**-3.34**	-0.1472	-0.84
	Cohort 1994	-0.1179	-1.57	**-0.0983**	**-4.25**	-0.1491	-0.83
	Cohort 1995	-0.1078	-1.28	**-0.0934**	**-5.39**	-0.1292	-0.64
Socio-demographic characteristics	Female	**0.1933**	**263.60**	**-**	**-**		
	Rural	**0.0882**	**42.77**	**0.0253**	**11.09**	**0.1593**	**45.71**
	No primary education	**0.1272**	**69.22**	**0.0893**	**44.30**	**0.1564**	**52.14**
	Adult unemployment rate	**0.8210**	**13.61**	**0.4723**	**7.20**	**1.1559**	**11.33**
	West Java	**0.1590**	**51.37**	**0.1227**	**28.63**	**0.1861**	**43.17**
	Central and East Java	**0.0979**	**31.78**	**0.0749**	**18.94**	**0.1160**	**24.91**
	Sumatra	**0.0921**	**35.47**	**0.0684**	**20.94**	**0.1127**	**28.37**
	Kalimantan	**0.1021**	**30.30**	**0.0520**	**12.93**	**0.1470**	**29.04**
	Sulawesi	**0.1303**	**44.78**	**0.0773**	**20.84**	**0.1787**	**42.35**
	Eastern Indonesia	**0.0696**	**22.70**	**0.0592**	**14.92**	**0.0729**	**15.76**
Time dummies		Yes		Yes		Yes	

Note: (a) Statistically significant results presented in bold. Reference categories are the following. Age: 15; Cohort: 1976; Year: 2000. Constraint: cohort_1976=cohort_1977. Education: primary; Region : Jakarta

Source: UCW calculations based on Indonesia Sakernas surveys, 2000-2004 and 2006-2010.

Table 5. **Determinants of youth unemployment, Indonesian youth aged 15-24 years, marginal effects after Probit estimates[(a)]**

Explanatory variables		Unemployed					
		Total		Males		Females	
		Coeff.	t	Coeff.	t	Coeff.	t
Age	Age16	**0.0237**	**2.92**	**0.0270**	**2.25**	**0.0208**	**1.90**
	Age17	**0.0598**	**3.11**	**0.0692**	**2.41**	**0.0517**	**2.00**
	Age18	**0.1410**	**3.69**	**0.1579**	**2.80**	**0.1263**	**2.44**
	Age19	**0.1690**	**3.04**	**0.2054**	**2.44**	**0.1364**	**1.90**
	Age20	**0.1353**	**2.16**	**0.1811**	**1.82**	0.0961	1.24
	Age21	0.1136	1.58	0.1562	1.36	0.0783	0.89
	Age22	0.0867	1.14	0.1247	1.01	0.0564	0.61
	Age 23	0.0683	0.85	0.1032	0.78	0.0410	0.42
	Age 24	0.0459	0.56	0.0776	0.57	0.0222	0.23
Cohort	Cohort 1978	-0.0054	-0.61	-0.0010	-0.07	-0.0077	-0.66
	Cohort 1979	-0.0089	-0.63	-0.0032	-0.15	-0.0130	-0.72
	Cohort 1980	-0.0155	-0.84	-0.0082	-0.28	-0.0208	-0.90
	Cohort 1981	-0.0199	-0.88	-0.0159	-0.45	-0.0219	-0.74
	Cohort 1982	-0.0238	-0.90	-0.0175	-0.41	-0.0276	-0.84
	Cohort 1983	-0.0245	-0.78	-0.0208	-0.42	-0.0258	-0.63
	Cohort 1984	-0.0310	-0.92	-0.0268	-0.50	-0.0325	-0.75
	Cohort 1985	-0.0362	-1.00	-0.0294	-0.49	-0.0393	-0.87
	Cohort 1986	-0.0415	-1.09	-0.0356	-0.57	-0.0439	-0.92
	Cohort 1987	-0.0458	-1.17	-0.0397	-0.61	-0.0481	-0.99
	Cohort 1988	-0.0502	-1.28	-0.0436	-0.65	-0.0526	-1.12
	Cohort 1989	-0.0538	-1.37	-0.0476	-0.70	-0.0557	-1.19
	Cohort 1990	-0.0557	-1.34	-0.0467	-0.61	-0.0595	-1.27
	Cohort 1991	-0.0572	-1.34	-0.0479	-0.60	-0.0608	-1.28
	Cohort 1992	-0.0610	-1.46	-0.0519	-0.65	-0.0643	-1.40
	Cohort 1993	-0.0629	-1.65	-0.0549	-0.73	-0.0654	-1.62
	Cohort 1994	**-0.0655**	**-2.09**	-0.0592	-0.90	**-0.0668**	**-2.12**
	Cohort 1995	**-0.0649**	**-2.31**	-0.0577	-0.87	**-0.0662**	**-2.66**
Socio-demographic characteristics	Female	**-0.0145**	**-28.88**	--	--	--	--
	Rural	**-0.0066**	**-4.64**	**-0.0166**	**-7.84**	0.0030	1.54
	No primary education	**-0.0363**	**-44.47**	**-0.0324**	**-26.27**	**-0.0395**	**-36.78**
	Adult unemployment rate	**0.5206**	**13.50**	**0.4486**	**7.91**	**0.5845**	**11.19**
	West Java	**0.0217**	**15.24**	**0.0220**	**10.84**	**0.0199**	**9.96**
	Central and East Java	**-0.0072**	**-5.07**	**-0.0115**	**-5.70**	**-0.0039**	**-1.95**
	Sumatra	**-0.0193**	**-16.77**	**-0.0328**	**-20.67**	**-0.0055**	**-3.29**
	Kalimantan	**-0.0197**	**-14.93**	**-0.0288**	**-16.29**	**-0.0104**	**-5.28**
	Sulawesi	**-0.0259**	**-25.46**	**-0.0433**	**-33.99**	**-0.0078**	**-4.79**
	Eastern Indonesia	**-0.0293**	**-25.80**	**-0.0426**	**-29.31**	**-0.0149**	**-8.35**
Time dummies		Yes		Yes		Yes	

Note: (a) Statistically significant results presented in bold. Reference categories are the following. Age: 15; Cohort: 1976; Year: 2000. Constraint: cohort_1976=cohort_1977. Education: primary; Region : Jakarta

Source: UCW calculations based on Indonesia Sakernas surveys, 2000-2004 and 2006-2010.

53. *Age.* The age effect is positive and statistically significant for female youth. The probability of absence from education and the labour force is 31 percentage points higher for females aged 24 years than for females aged 15 years. The opposite pattern prevails for male youth.

54. *Time.* The time effect is positive, but not statistically significant for most years.

55. *Socio-demographic characteristics.* Youth in rural areas are more likely to be absent from education and the labour force than their urban counterparts. Region of residence also affects the likelihood of youth being absent from education and the labour force. Youth living in Jakarta (the omitted group) face a lower risk of absence from education and the labour force. Youth with primary education have a lower probability of absence from education and the labour force than youth without any formal education. A higher unemployment rate of the adult population aged 25-55 years is associated to the higher probability of being absent from education and the labour force.

56. **Unemployment**. Table 5 reports the marginal effects after the probit estimates of the probability of being unemployed for youth aged 15-24 years in Indonesia.

57. *Cohort effect.*_The estimation results do not indicate any significant cohort effect on the youth unemployment in Indonesia.

58. *Age effect.* The age effect is positive and statistically significant for Indonesian youth aged 15-19 years. The probability of unemployment is 17 percentage points higher for youth aged 19 years than for youth aged 15 years. The age effect for the oldest age groups is negative but not statistically significant.

59. *Time effect.* The estimation results do not indicate any significant time effect on the youth unemployment in Indonesia.

60. *Socio-demographic characteristics.* Youth living in cities and towns are more likely to be unemployed than youth living in rural areas. The probability of youth unemployment also depends to a large extent on the region where they live. Youth living in the West Java region have the highest probability of being unemployed.

61. Youth without any formal education have a lower probability of unemployment than youth with primary education. A higher unemployment rate among the adult population aged 25-55 years is associated with a higher probability of unemployment for Indonesian youth.

7 Conclusion

62. The current paper analyzes the dynamics of the NEET youth in Brazil and Indonesia. Both countries have seen a slight but steady downward trend in NEET youth since the middle of the decade beginning in 2000, interrupted only in Brazil during the 2008-2009 global economic crisis. NEET youth nonetheless remain an important policy concern in both countries, accounting for 23 percent of all Brazilian youth in 2009 and for 28 percent of all Indonesian youth in 2010.

63. Evidence from cohort analyses do not indicate a worsening of the position of more recent generations of young people in the two

countries. On the contrary, both descriptive and econometric evidence for the two countries points to an improving situation for female youth in particular. In both countries there is a secular trend that sees recent cohorts of female youth *less* likely to be absent from both education and the labour force than their predecessors. This in turn points to greater opportunities for female youth over time to stay in education longer and to enter the labour force upon graduation.

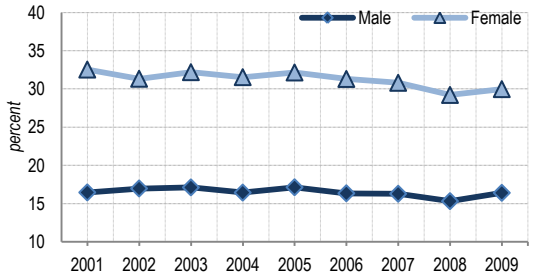
64. Both components of NEET youth population appear to move cyclically in the two countries - the probability of being unemployed and of being neither in education nor the labour force increases with the adult unemployment rate. This suggests that NEET status among youth is determined to an important extent by general labour market conditions rather than by youth-specific labour market barriers.

65. Educational attainment, and particularly primary schooling, also appears an important determinant of NEET status in the two countries. Schooling, however, operates in opposing directions for the two NEET components: more primary schooling is associated with a *lower* probability of absence from education and the labour force but with a *higher* risk of unemployment. Household characteristics also seem to matter. More children aged 0-4 years in the household, for instance, is associated with a higher probability of absence from education and the labour force for Brazilian female youth.

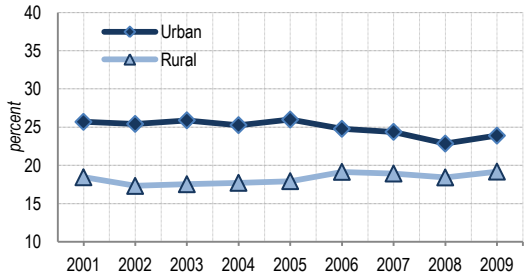
Statistical appendix

Figure A1. **Brazil: Trends in NEET youth, by residence, sex and household income quintile**

(a) By sex



(b) By residence



(c) By household income quintile

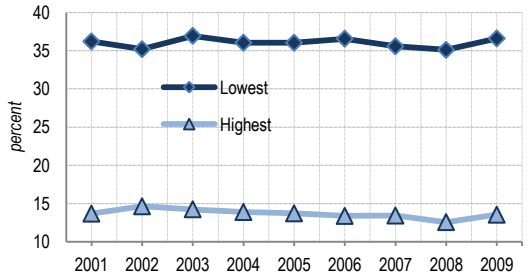
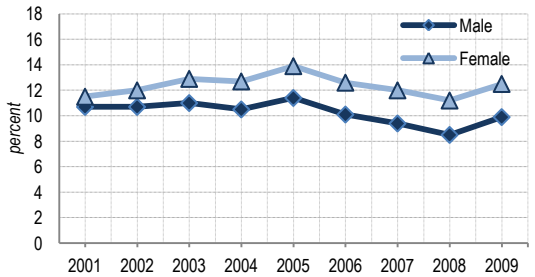
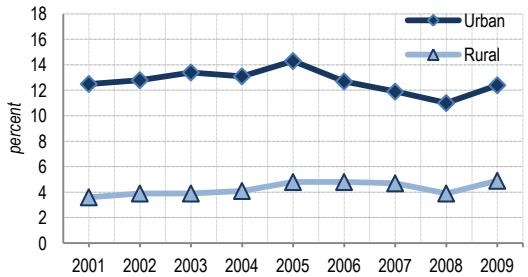


Figure A2. **Brazil: Trends in unemployed youth, by residence, sex and household income quintile**

(a) By sex



(b) By residence



(c) By household income quintile

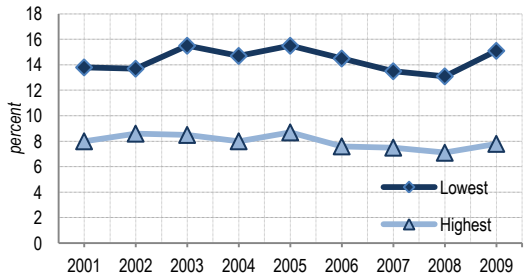
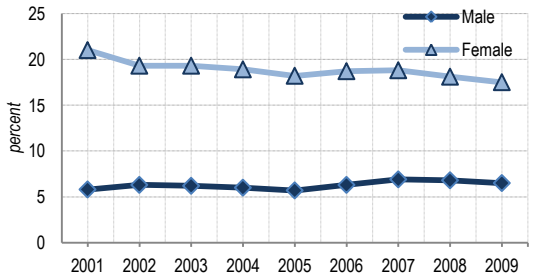
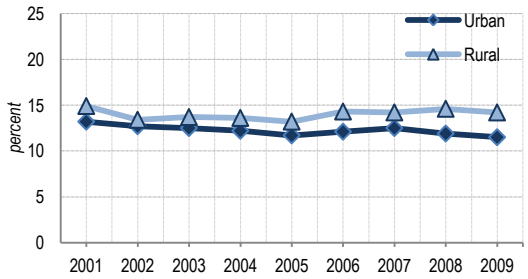


Figure A3. **Brazil: Trends in youth not in education or the labour force, by residence, sex and household income quintile**

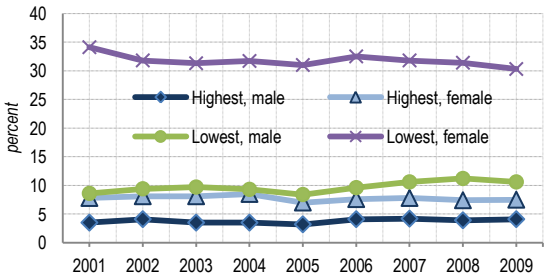
(a) By sex



(b) By residence



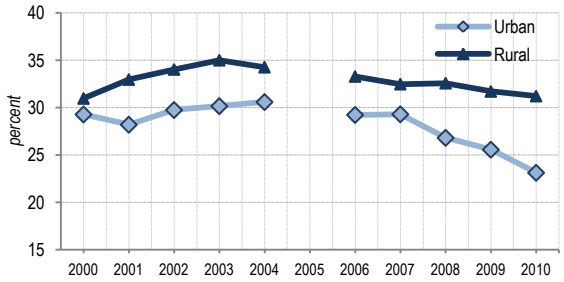
(c) By household income quintile



Note: PNAD surveys for the years 2001, 2002 and 2003 do not cover the rural areas of the six Northern states (Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá).
Source: UCW calculations based on Brazil PNAD surveys, 2001-2009.

Figure A4. **Indonesia: Trends in NEET youth, by residence and sex**

(a) By residence



(b) By sex

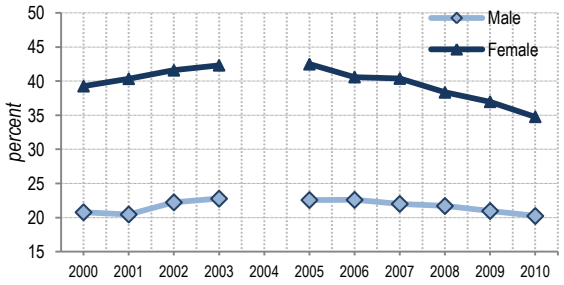
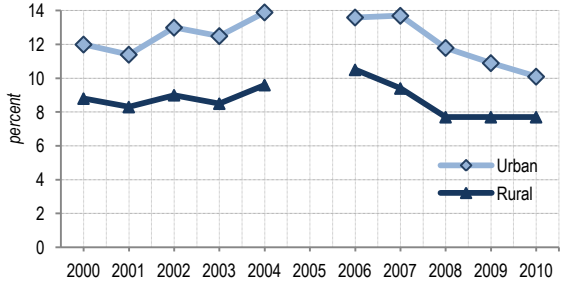


Figure A5. **Indonesia: Trends in unemployed youth, by residence and sex**

(a) By residence



(b) By sex

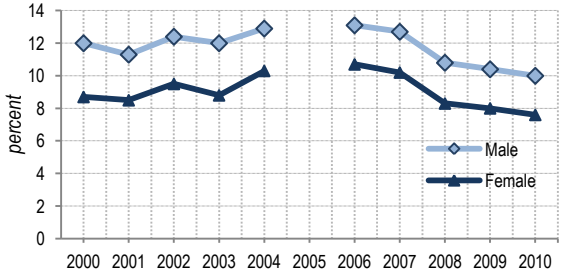
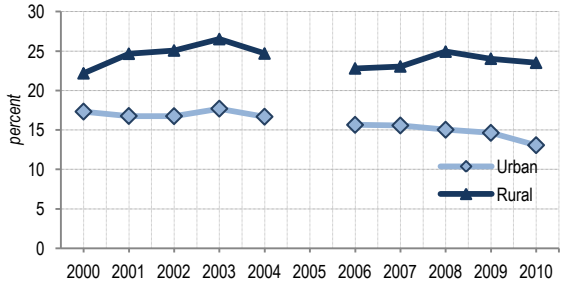
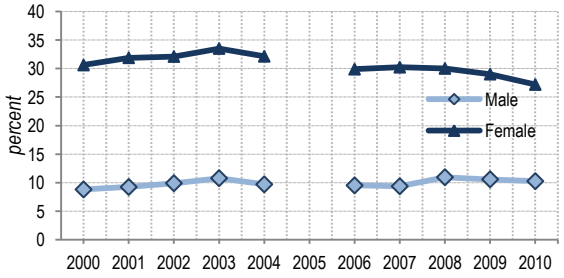


Figure A6. **Indonesia: Trends in youth not in education or the labour force, by residence and sex**

(a) By residence



(b) By sex

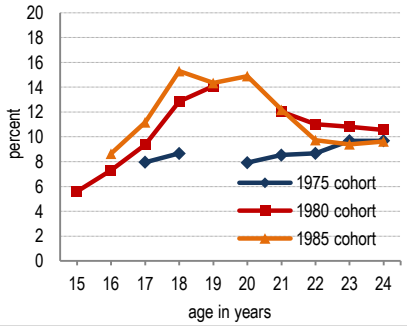


Note: Discouraged young workers are not included in NEET, regardless of their school attendance. 2. Students who are not in employment and reported to be not seeking employment for any reason other than school attendance are counted as NEET.

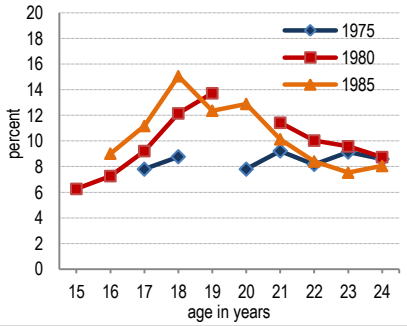
Source: UCW calculations based on Indonesia Sakernas surveys, 2010, 2009, 2008, 2007, 2006, 2004, 2003, 2002 and 2001. All surveys are collected in August.

Figure A7. **Youth time use, by birth cohort, age and sex, Brazil**

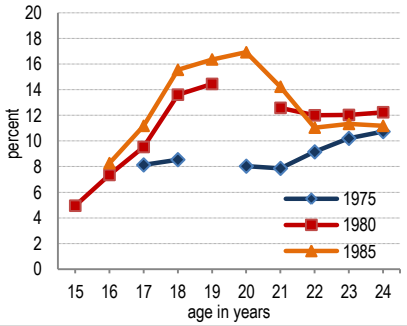
(a1)Unemployment ratio, total



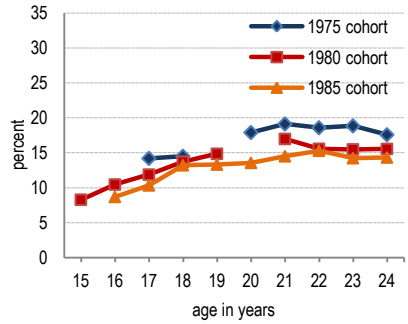
(a2) Unemployment ratio, male



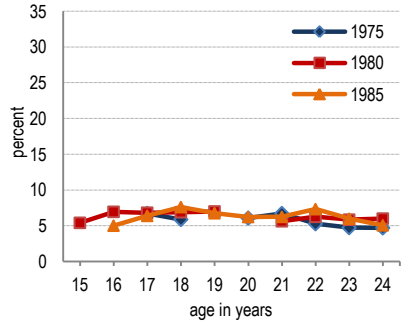
(a3) Unemployment ratio, female



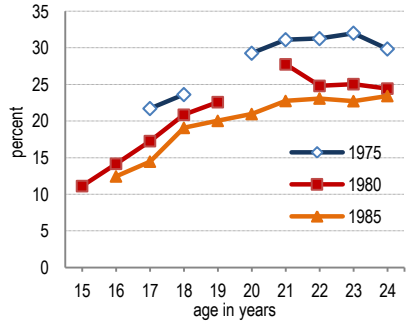
(b1) Not in education or labour force, total



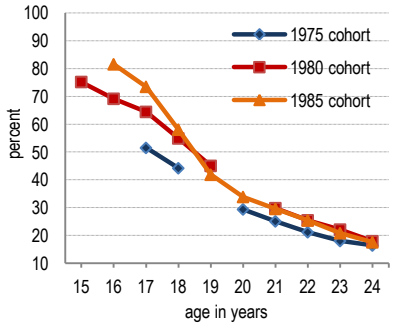
(b2) Not in education or labour force, male



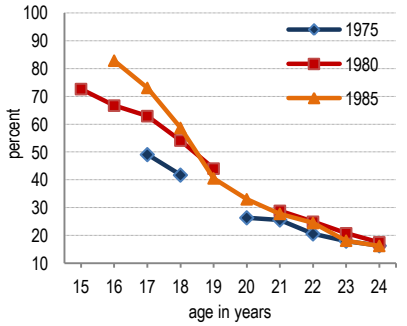
(b3) Not in education or labour force, female



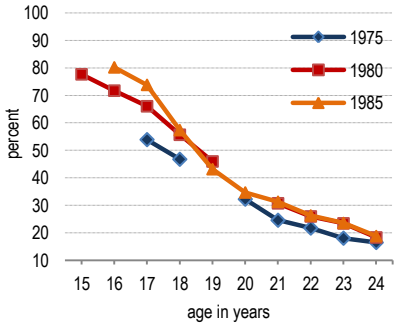
(c1) In school, total



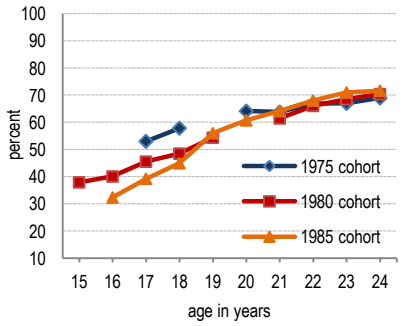
(c2) In school, male



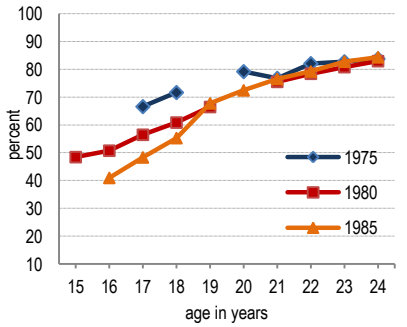
(c3) In school, female



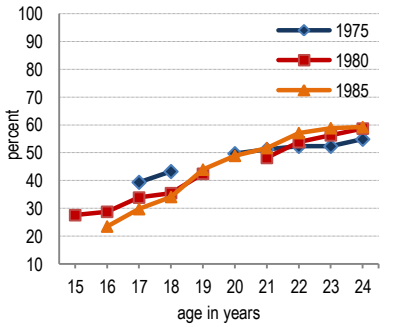
(d1) Employment ratio, total



(d2) Employment ratio, male

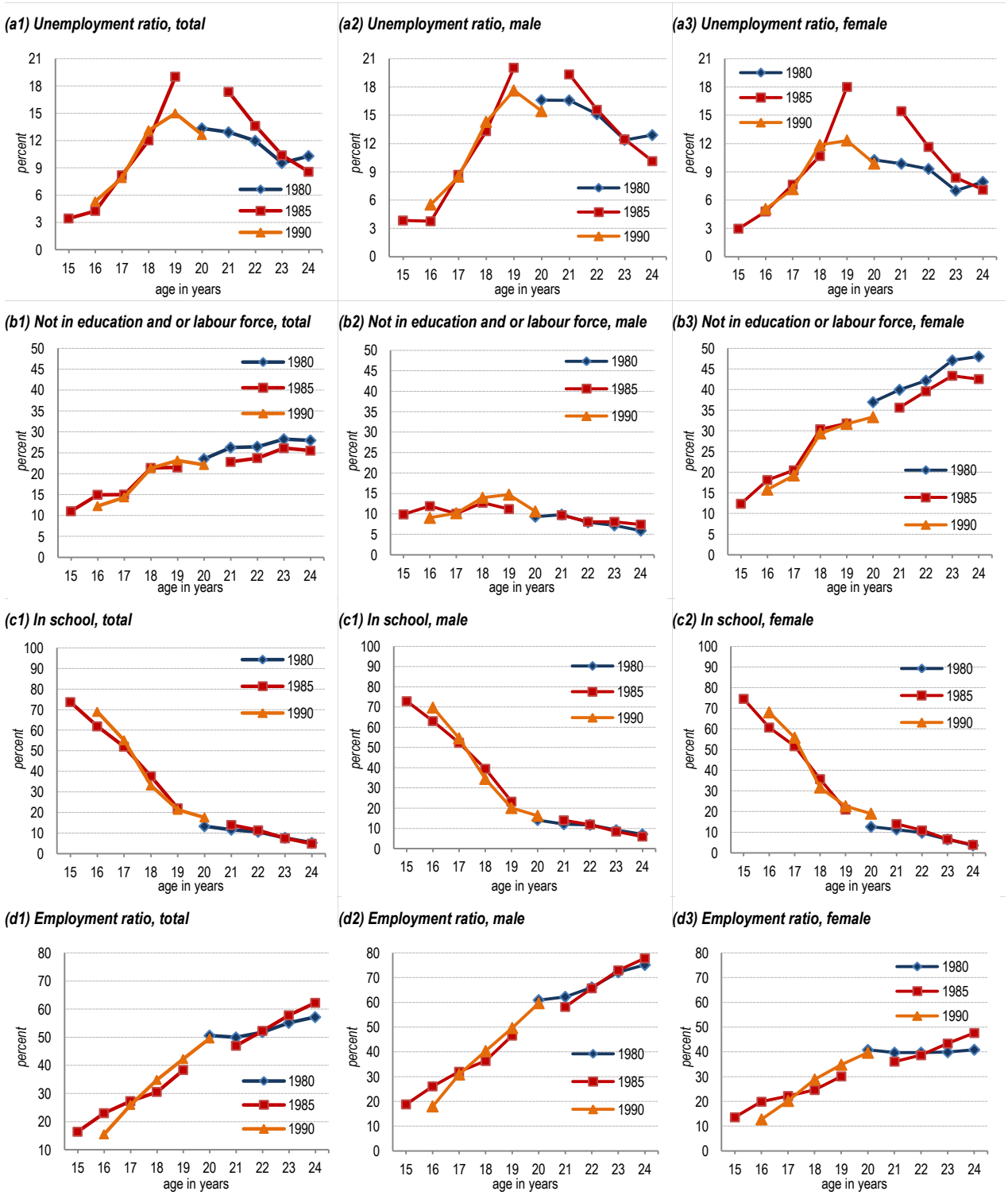


(d3) Employment ratio, female



Note: *PNAD surveys for the years 1992, 1993, 1995-1999 and 2001-2003 do not cover the rural areas of the six Northern states (Rondônia, Acre, Amazonas, Roraima, Pará, and Amapá).
Source: UCW calculations based on Brazil PNAD surveys, 1992, 1993, 1995-1999 and 2001-2009.

Figure A8. **Youth time use, by birth cohort, age and sex, Indonesia**



Source: UCW calculations based on Indonesia Sakernas surveys, 2000-2004 and 2006-2010.