Minimum Wage in Germany: Facing the Wage Inequality between Migrants and Natives?

Kai Ingwersen[a] & Stephan L. Thomsen[abc]

a) University of Hannover | b) ZEW Mannheim | c) IZA Bonn

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Minimum Wage in Germany

- Rising **income inequality** in Germany since the 1990s (Biewen et al. 2019, Acemoglu 2002, Dustmann et al. 2009)

- **Objective**: protect workers in the low-wage sector from dumping wages (BMAS 2021)

- **€8.50**/hour for the years 2015/16

- In 2014, there were around 4 million employment relationships with an hourly wage of less than €8.50, or **11.3 percent** of all employees (Mindestlohnkommission 2018)

Minimum Wage and Migrants

- Although, there are numerous studies on employment effects due to the minimum wage introduction in Germany, there are **no studies on the situation of migrants**.

  - **One in four** persons in the labour force has a migration background
    (Federal Statistical Office 2020)

  - Migrants were much **more likely to be below** the minimum wage threshold of €8.50/hour than natives (19 vs. 12 %)

  - **Structural wage inequalities** between migrants and natives
    (e.g. Aldashev, Gernandt & Thomsen 2012; Ingwersen & Thomsen 2021)

- *"Only a few studies have looked at the effect of the minimum wage on immigrants. Research has been limited exclusively to the US."* (Zavodny 2014:5)

This paper

- **How did the introduction of the minimum wage 2015 in Germany affect migrants?**

  - Has there been a convergence or divergence in **wages** between migrants and natives?

  - Has the introduction of the minimum wage led to migrants being employed in comparatively better **employment** contracts?

  - Did the labour market situation of migrants improve due to the introduction of the statutory minimum wage in 2015?

Related Literature

Effects of Minimum Wage in Germany

- **Wages**: Significant wage growth in the lowest wage decile. Also, spillover into higher wage groups. However, often no increases in monthly salary due to reduction in working hours
(Bossler & Schank 2020, Dustmann et al. 2021, Grabka & Schröder 2019, Caliendo et al. 2019, Bruttel 2019)

- **Employment**: Regular employment was unaffected by the minimum wage introduction. Half of the marginal employment was converted into regular employment (Amlinger et al. 2016, Berge & Weber 2017, Caliendo et al. 2019, Dustmann et al. 2021, Garloff 2019, Holtemöller & Pohle 2019)

- **Labour substitution**: Employers to shift away from the least-skilled workers toward more-skilled workers (Dustmann et al. 2021, Zavodny 2014)

Effects of Minimum Wages for Migrants

- **US/UK**: The introduction of the minimum wage is associated with a reduction in the wage gap between ethnic minorities and white workers at the lower end of the pay scale (Clark & Nolan 2021, Wursten & Reich 2021)

- The employees who seem to have **benefitted the most** are low educated, marginally employed, women and people with a migration background
(Caliendo et al. 2019)

Data and Selected Descriptives

Data

- **SOEP**
    - migration/refugee samples from 2013 onwards are not included
    - age range 25 to 64 years
    - <u>contractual</u> hours worked in the main job
    - waves 2007-2018 (~134.000 observations)

    - Migration background
        - without migration background (80.1%) → "natives"
        - with migration background (19.9%) → "migrants"

Selected Descriptives

Characteristics of workers	Migrants mean, 2012-2014	change towards 2015-2017 absolute	%	Natives mean, 2012-2014	change towards 2015-2017 absolute	%
Labour force participation	0.73	0.02	3***	0.75	0.01	1***
… employed	0.88	0.00	0	0.93	0.01	1
… registered unemployed	0.13	0.00	1	0.07	-0.01	-12***
Salary						
gross hourly wage	15.54	1.61	10***	17.83	1.52	9***
Std. Dev.	8.82	1.12	13***	10.65	2.17	20***
p10	7.07	0.98	14***	8.05	0.92	11***
p15	7.66	0.96	13***	8.96	0.89	10***
p20	8.62	0.71	8***	9.96	0.93	9***
p50	13.79	1.15	8***	15.80	1.44	9***
gross monthly wage	2,277.32	2,548.31	12***	2,712.54	2,886.46	6***

Selected Descriptives

Characteristics of workers	Migrants			Natives		
	mean, 2012-2014	change towards 2015-2017		mean, 2012-2014	change towards 2015-2017	
		absolute	%		absolute	%
Employment						
working hours (contractual)	33.24	33.23	0	34.43	34.04	-1***
full-time employment	0.68	0.00	0	0.70	-0.01	-2***
part-time employment	0.19	0.01	8**	0.21	0.02	10***
marginal employment	0.13	-0.01	-9**	0.08	0.00	-2
Experience						
labour market experience	14.40	0.44	3**	18.89	0.35	2***
job tenure	7.48	0.30	4**	12.05	0.11	1
Personal information						
age	39.70	0.94	2***	44.17	0.79	2***
gender (male=1)	0.55	-0.02	-4***	0.51	-0.01	-1
No. of observations	**8,890**	**7,327**		**30,065**	**23,613**	

Identification Strategy

Differential Trend Adjusted
Difference-in-Differences Analysis (DTADD)

- Based on **new approach** of Burauel et al. (2020) and Dustmann et al. (2022)

- **Identification strategy**: wages below the MW-threshold (treatment group) would have developed identically to those just above the MW-threshold (control group) if the minimum wage not been introduced.

- **Treatment effect** is represented by the difference between wage changes in the treatment group and the wage changes perceived in the control group

- **Robustness check**: control group may be partially affected my MW-introduction

Definitions of Groups

group	wages in 2013/14	wage changes towards 2015/16
treated group	< €8.50	▪ (subordinate) overall wage trend ▪ wage increase above the threshold of €8.50
control group	€8.50-€10.00	▪ overall wage trend ▪ small additional wage increase due to indirect effects of the minimum wage introduction
peer group	€10.00-€12.00	▪ overall wage trend ▪ (almost) unaffected by the minimum wage introduction

Source: Own illustration.

Empirical Specification

- Empirical model:

$$\Delta w_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 Y_{it} + \beta_3 T_{it} \times Y_{it} + \beta_4 X_{it} + \beta_5 change_{it} + \varepsilon_{i.t}$$

- Δw_{it}: logarithmic change in individual hourly wage

- T_{it}: treatment group indicator

- β_1: average hourly wage growth of individuals of the treated group

- β_3: The interaction term between T_{it} and the time vector Y_{it} indicates deviations from the average hourly wage growth of the treated group → "*minimum wage effect*"

- Implementation:
  - Consideration of different time intervals: (1) one-year, (2) two-years (preferred spec.), and (3) three-years

Estimation Results

DTADD-Results: Overall

	Two-Year Analysis		
	(1)	**(2)**	**(3)**
Two-Year Analysis			
Hourly wage < €8.50	0.050***	0.049***	0.034*
✕ DTADD 2014-2016	0.138***	0.135***	0.131***
✕ Placebo 2010-2012	-0.062	-0.059	-0.042
✕ migration background		-0.004	-0.010
Control Variables			
Year fixed effects	yes	yes	yes
Socio-demographic info.		yes	yes
Job characteristics			yes
Changes in employment			yes
Constant	0.033	0.095*	0.090
Observations	2,536	2,527	2,231
Adj. R^2	0.081	0.084	0.094

average wage growth

"Minimum Wage Effect"

wage trend pre-MW

DTADD-Results: Migration Background

| 1) Control groups (1)-(6): all workers	One-Year Analysis		Two-Year Analysis		Three-Year Analysis	
	Natives	**Migrants**	**Natives**	**Migrants**	**Natives**	**Migrants**
	(1)	(2)	(3)	(4)	(5)	(6)
Two-Year Analysis						
Hourly wage < €8.50[1]	0.021	0.032				
× DTADD 2014-2015[2]	0.127***	0.060				
× Placebo 2012-2013[2]	-0.045	-0.030				
Two-Year Analysis						
Hourly wage < €8.50[1]			0.037**	0.035		
× DTADD 2014-2016[2]			0.116***	0.158***		
× Placebo 2010-2012[2]			-0.034	-0.147		
Three-Year Analysis						
Hourly wage < €8.50[1]					0.072***	0.085**
× DTADD 2014-2017[2]					0.081**	0.022**
× Placebo 2008-2011[2]					-0.035	0.049

average wage growth

"Minimum Wage Effect"

wage trend pre-MW

Results on Labour Market Participation:
Descriptive Analysis

Full-time and Part-time Employment
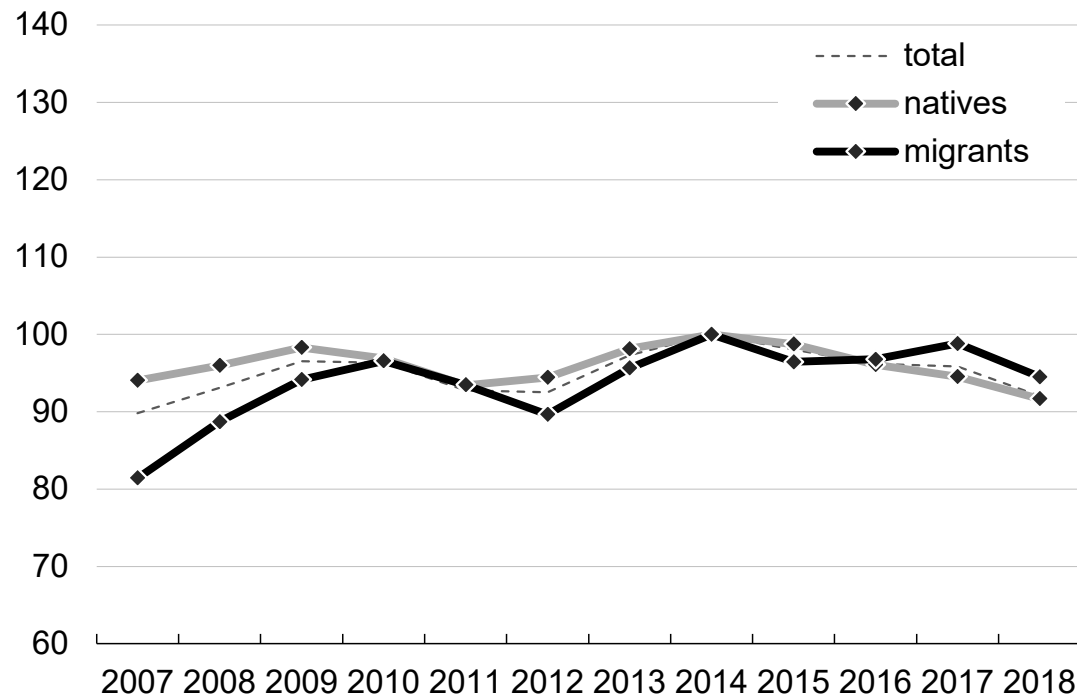
Full-time employment
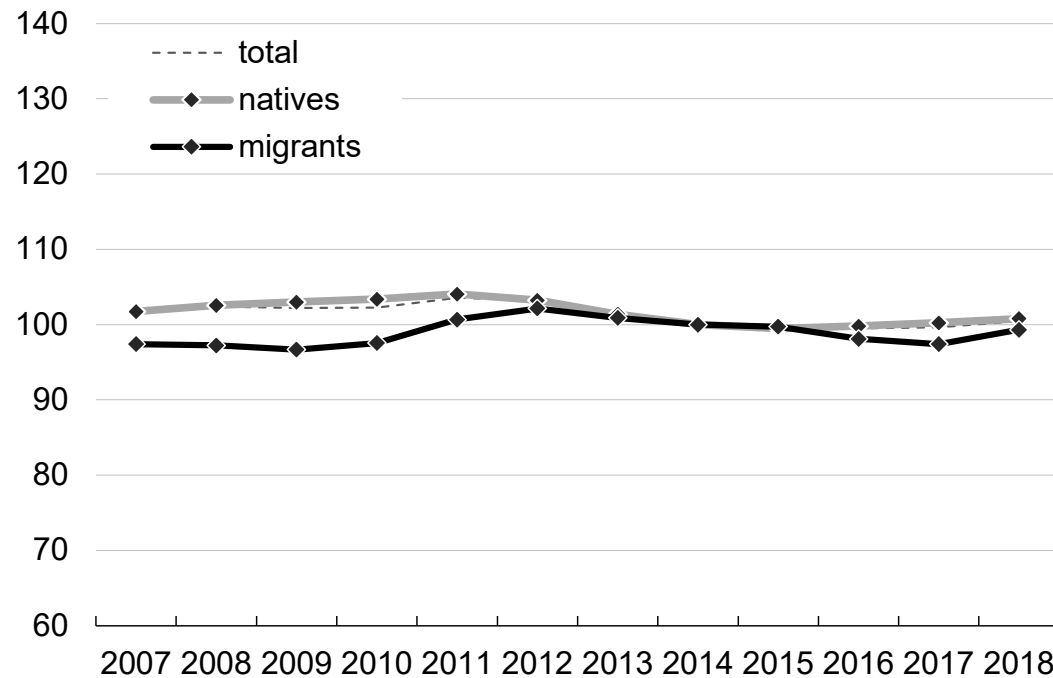
Part-time employment
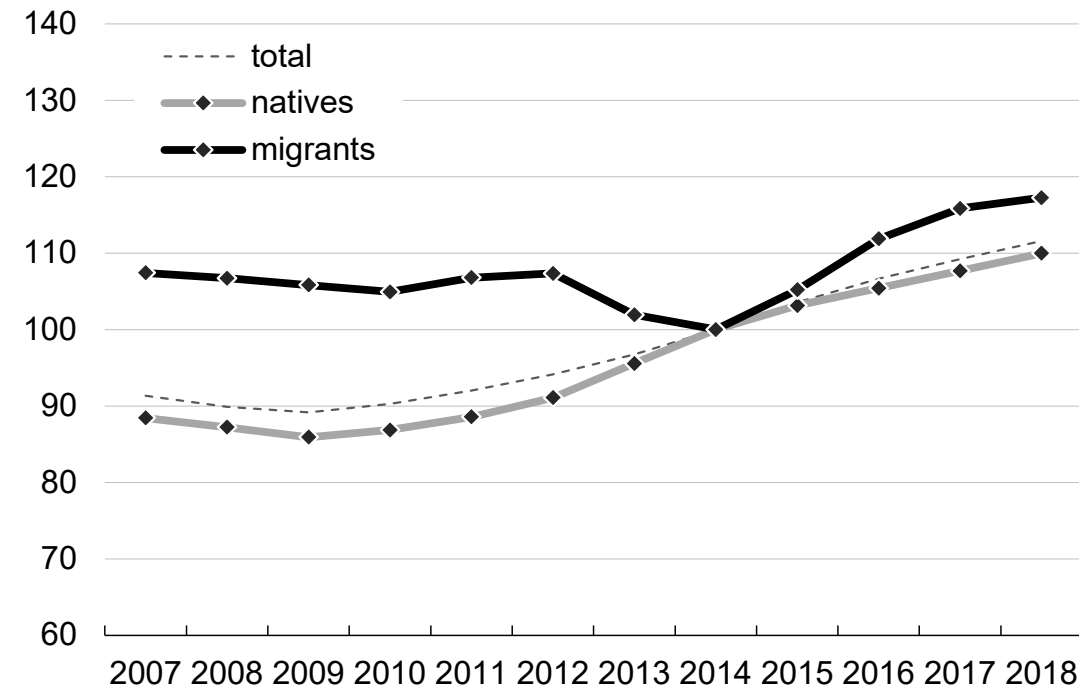
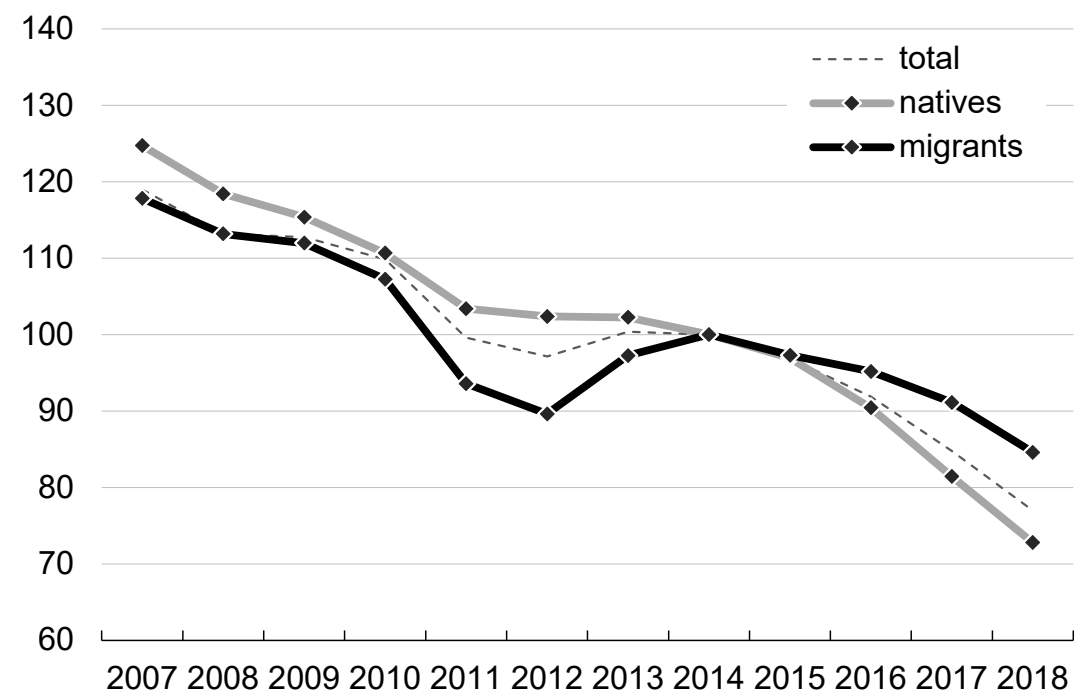**Developments in employment status**

Index 2014=100. Index is smoothed with adjacent years. Note: Self-employed, apprentices, intern, handicapped workers in sheltered workshops and branches with industrial wage floors are excluded. Source: SOEP v36, 2007-2018. Own calculations incl. survey weights.

# Marginal Employment and Unemployment

Marginal employment

Unemployment

Developments in employment status

Index 2014=100. Index is smoothed with adjacent years. Note: Self-employed, apprentices, intern, handicapped workers in sheltered workshops and branches with industrial wage floors are excluded. Source: SOEP v36, 2007-2018. Own calculations incl. survey weights.

Wage Distribution
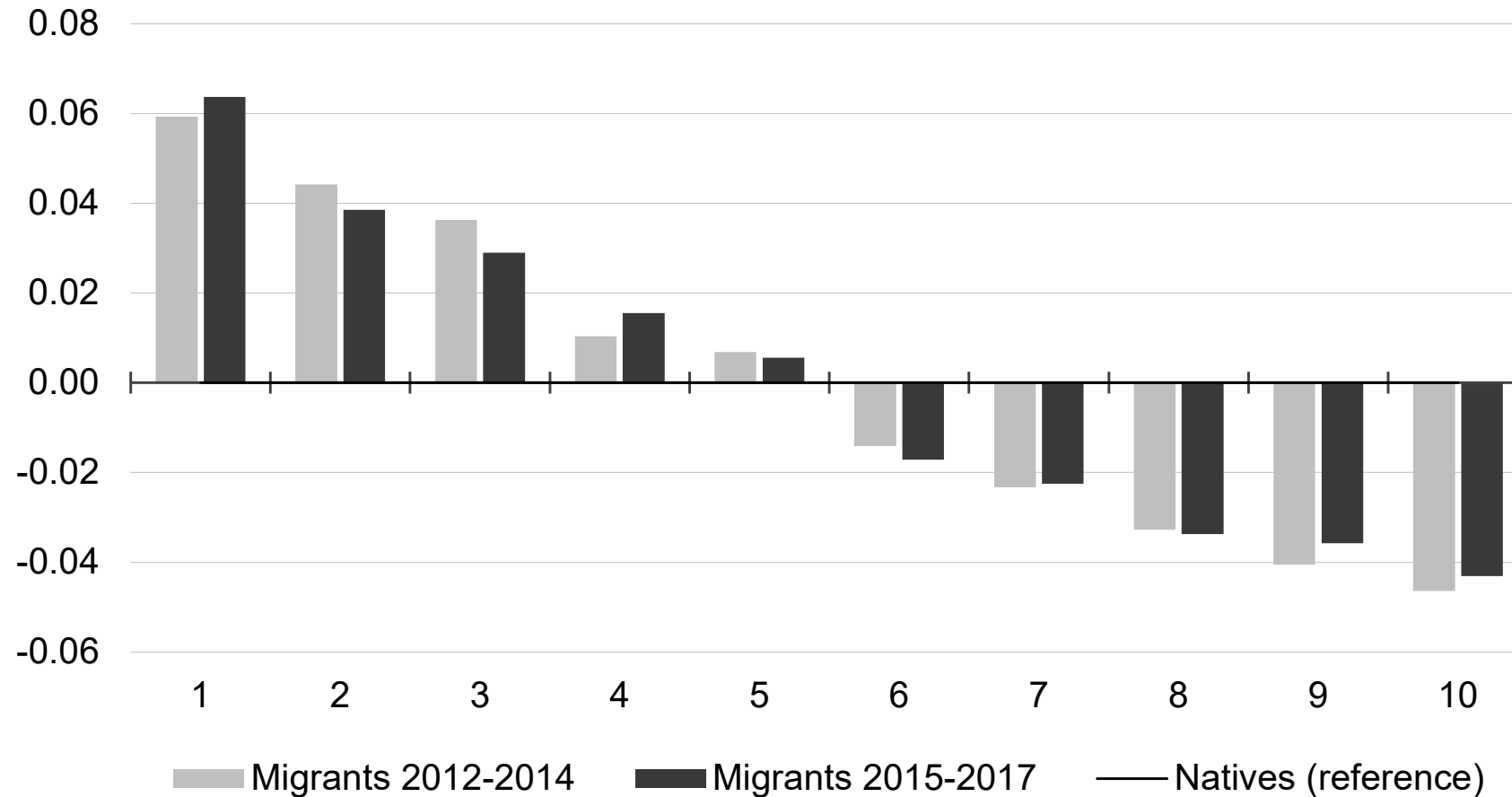
Deviation of migrants' wage by the wage deciles of natives

Deviation of the proportion of employees with migration background within the wage deciles of employees without migration background, 2012-2014 and 2015-2017. Note: Self-employed, apprentices, intern, handicapped workers in sheltered workshops and branches with industrial wage floors are excluded. Source: SOEP v36. Own calculations incl. survey weights. Illustration based on Clark & Nolan (2021).

Conclusion

Conclusion

- Migrants were more likely to have wages below €8.50/hour before the MW-introduction

- Migrants tendentially benefited less from MW-introduction:
  - <u>hourly wage</u>: only short-term convergence through MW-introduction recognizable
  - <u>working hours</u>: positive development was slowed down
  - <u>monthly wages</u>: difference become even larger after the MW-introduction
  - <u>employment</u>: increase in part-time; unemployment declines less sharply
  - <u>wage distribution</u>: slight wage convergence, but still large differences (MW-related?)

- Worsening of the labour market position of migrants

- Perpective:
  - Minimum wage will be increased to 12 Euro by October 2022
  - Will further intensify competition between migrants and natives in Germany
  - Wages and employment between migrants and natives at the lower end of the wage distribution will further diverge – at the cost of migrants

Thank you for your attention!
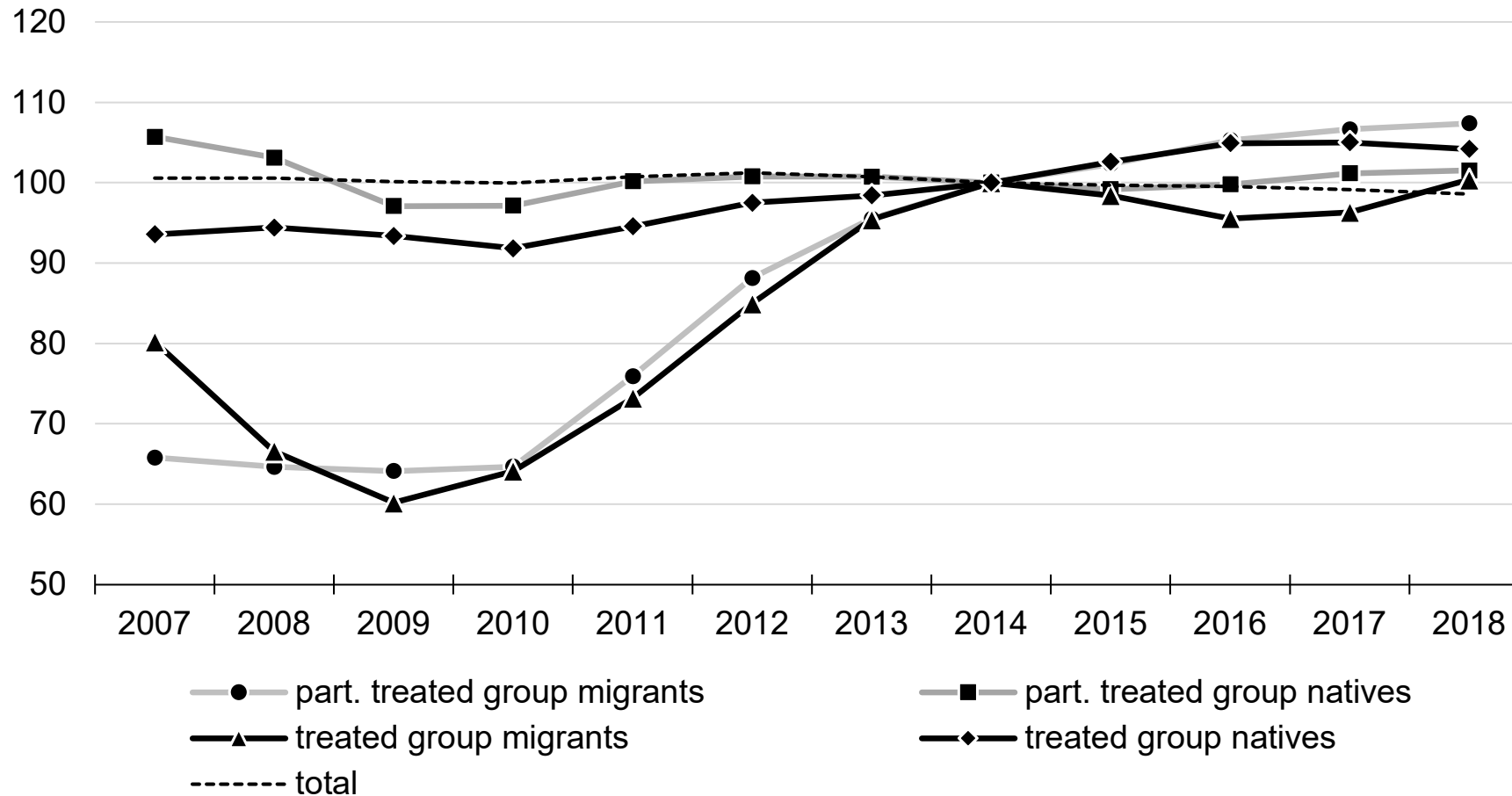
Contractual Working Hours: By Broups

Figure 2: Development of contractual weekly working hours by migration background

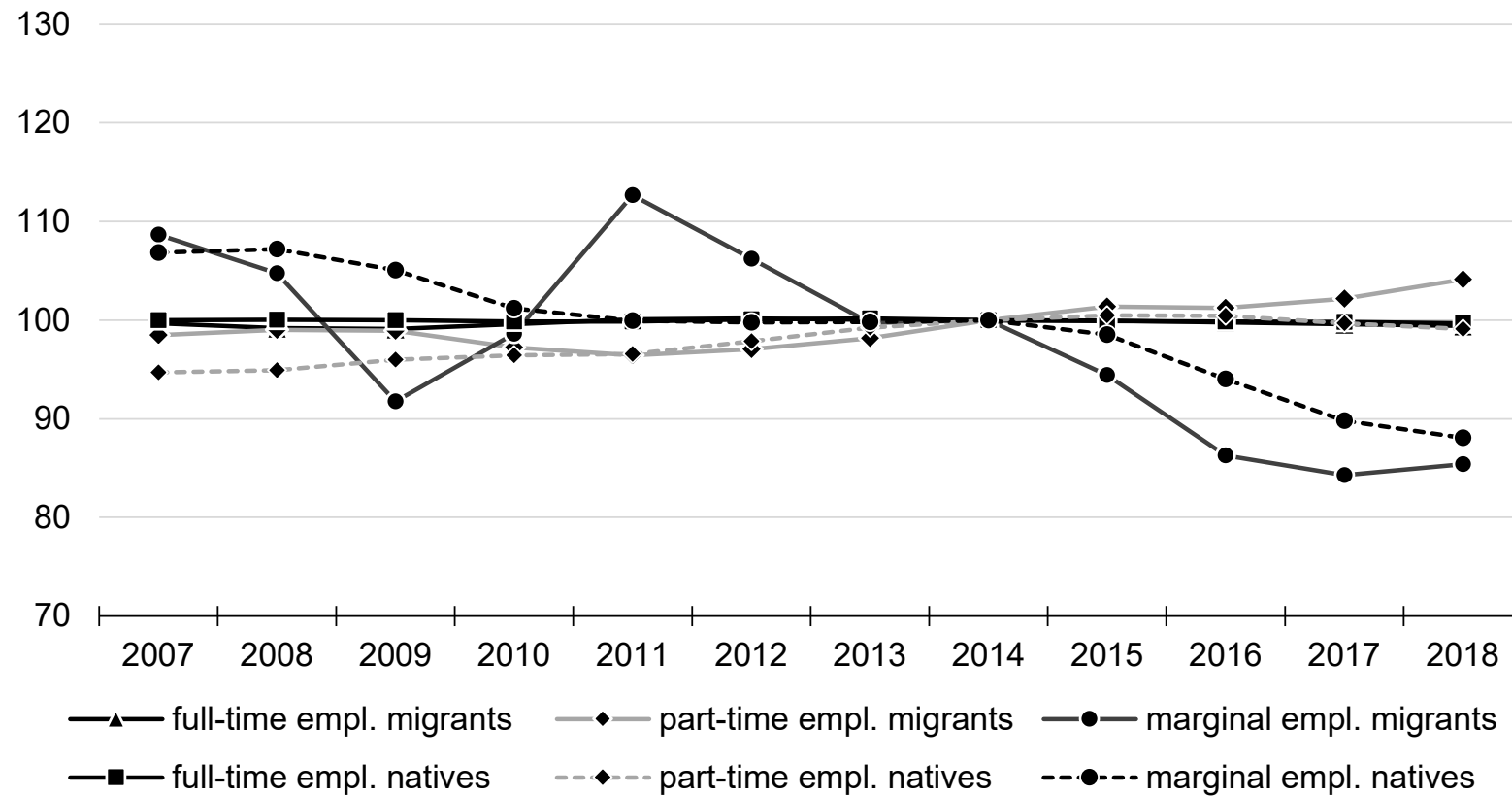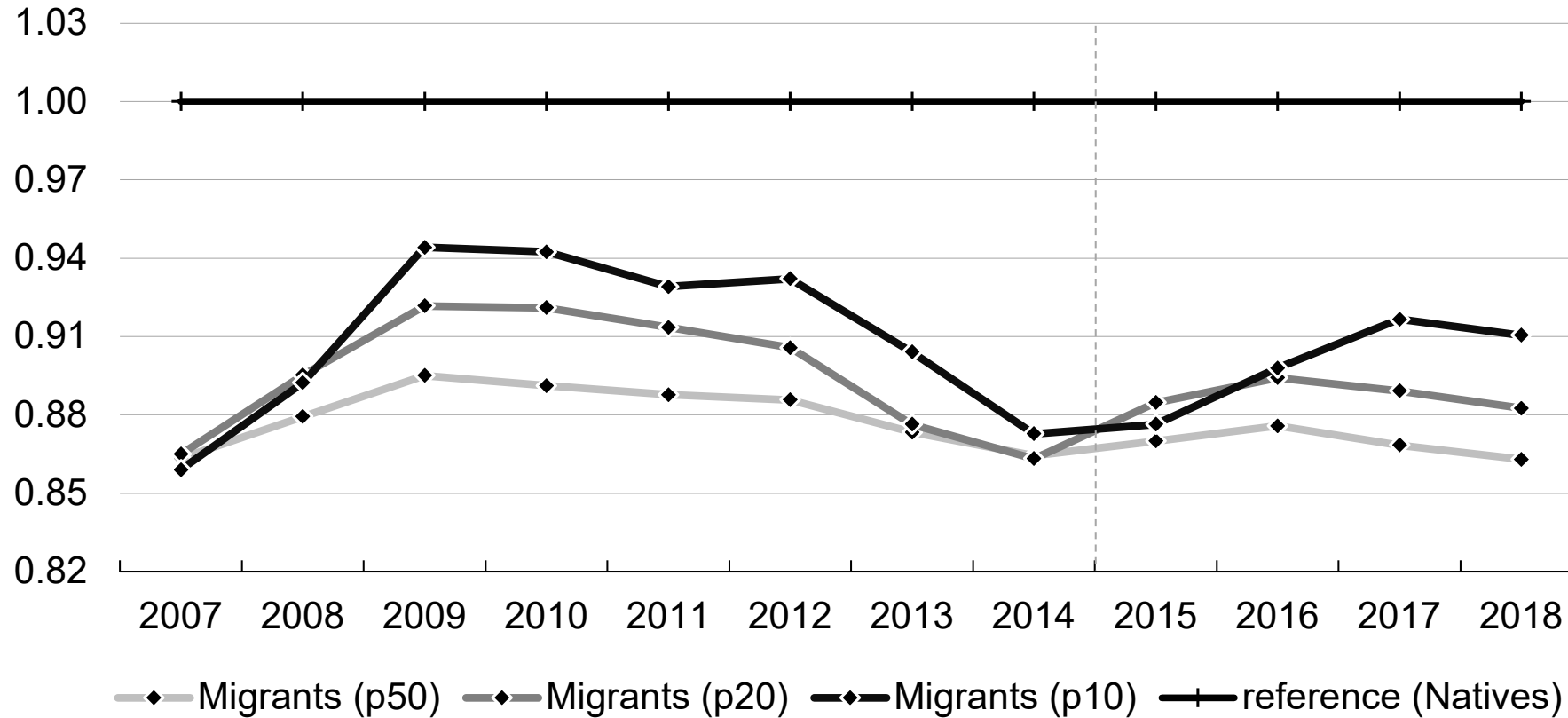# Contractual Working Hours: By Employment

Figure A.1: Development of contractual weekly working hours by employment status and migration background

Wage Inequality by Selected Wage Deciles

Wage convergence by selected wage percentiles

Ratio between the 10th, 20th and 50th wage percentiles of employees with a migration background to employees without a migration background (reference=1), 2017-2018. Wage ratios are smoothed with adjacent years. Note: Self-employed, apprentices, intern, handicapped workers in sheltered workshops and branches with industrial wage floors are excluded. Source: SOEP v36. Own calculations incl. survey weights.