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Time Off to Upgrade Skills: The Labour Market Effects of a Large-Scale Educational Leave Programme

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Abstract

This paper combines a counterfactual impact analysis using rich administrative data with a participant survey to assess the long-term labour market effects of Austria's large-scale educational leave programme. The scheme allows eligible employees to take full- or part-time leave for further education, supported by income-compensating benefits. We find that participation substantially increases monthly earnings but does not improve employment probability. Full-time leave reduces employment in the short term and modestly in the long term, offsetting wage gains and resulting in no increase in cumulative earnings. Part-time leave yields even larger monthly wage increases and clear cumulative earnings gains, with no significant employment effects.

Keywords: Educational leave; continuing education; labour-market outcomes
JEL codes: H52; I26; I28; J24

1 Introduction

Many countries are focusing on lifelong learning as labour markets are changing rapidly and increasingly requiring workers to update their skills. Technological and demographic change and global competition have led to job polarisation, with low- and medium-skilled jobs declining while high-skilled roles expand (Acemoglu & Autor, 2011; Goos & Manning, 2007; Goos et al., 2014; Spitz-Oener, 2006). The ecological transition is also reshaping skill requirements and increasing the need for occupational mobility and career reorientation. To remain employable, improve their earnings, and support economic growth, workers must continually learn (OECD, 2016). Lifelong learning also brings broader societal benefits, such as promoting social cohesion and civic engagement (Feinstein & Hammond, 2004). Educational-leave programmes address time and financial barriers by allowing employees to take time off for training while receiving government-subsidised income support. Unlike most active labour market policies, which target the unemployed, these programmes are aimed at employed workers. To date, few countries offer such schemes, with varying eligibility and support (Batthyány et al., 2021). Training for employed workers has been evaluated far less often than training for the unemployed. In particular, very little is known about the effectiveness of educational leave programmes.

We address this research gap by examining the long-term effects of a large-scale educational leave programme introduced in Austria in 1998. To this end, we use rich administrative data from the Austrian Public Employment Service (PES) and the Austrian Social Security Database, along with a survey of programme participants. Austria notably offers employees a choice between full-time and part-time educational leave. Conditional on prior job tenure and employer approval, individuals can either take a full break from work or reduce their working hours in order to pursue further education. During their leave, they receive income support – either comparable to unemployment benefits (full-time leave) or proportional to the reduction in working hours (part-time leave).[1]

We assess whether the programme improves employment and earnings by comparing participants to matched non-participants, estimating the difference between actual and counterfactual outcomes. As in many other programmes, participation is not random. To account for this, we use dynamic nearest-neighbour propensity score matching (Rosenbaum & Rubin, 1983) to adjust for observable pre-treatment differences, and assess robustness across a broad range of alternative counterfactual specifications. The validity of causal inference with propensity-score matching relies on unconfoundedness. Three institutional features of Austria's educational-leave programme make this assumption more plausible. First, employer consent introduces a firm-side gatekeeper along observable factors. Second, educational leave is often used as a form of anticipated separation from the employer, which shifts the relevant margin to the mode and timing of separation (with versus without educational leave) and reduces the influence of unobserved factors. Third,

[1]The Austrian educational leave programme was officially paused at the end of March 2025. Both the full-time and part-time models expired, and the government has announced a reformed and more cost-limited successor for 2026.

near-universal collective bargaining compresses wages conditional on observed factors (industry, tenure, firm size, region), reducing residual earnings heterogeneity. Pseudo-effects on lagged outcomes are statistically indistinguishable from zero, supporting the plausibility of unconfoundedness.

We estimate the effects of full- and part-time educational leave on employment, earnings, and self-employment. The detailed administrative employer-employee linked data allow us to control for a rich set of pre-treatment characteristics and to estimate short-, medium-, and long-term labour market effects. Additionally, we explore how the effects vary by gender, age, income level and employment history. A complementary survey of recent participants provides valuable context by shedding light on the circumstances in which educational leave is taken, the activities carried out, and the motivations behind them. It also offers subjective evaluations of participants' experiences.

Our analysis shows that while participants initially earn less than non-participants, their wages rise over time, indicating delayed returns from skill acquisition. However, we find no improvement in employment probability. Full-time leave leads to a significant short-term and a modest long-term decline in employment, likely due to job exits and career reorientation. Even twelve years after programme entry, employment probability remains about two percentage points lower than for comparable non-participants. Monthly earnings turn positive from year five onwards, yet due to reduced employment cumulative earnings remain lower. These findings are robust across a wide range of samples and counterfactual specifications, consistently showing zero or negative effects on employment probability. Part-time leave performs somewhat better: it generates larger monthly wage increases and clear cumulative earnings gains, but has no discernible effect on employment probability in either the short or the long term. Notably, participation in either option increases the likelihood of transitioning to self-employment.

The survey results indicate that participants generally view educational leave very positively. Most report taking leave to improve their career prospects. However, the programme is used for a broad range of purposes – not always primarily for skill upgrading, but also for personal development, recovery, career reflection, or to improve work-life balance. In many cases, full-time leave is taken at the end of an employment relationship that is already effectively coming to a close.

Our findings highlight the limits of large-scale, loosely targeted continuing-education programmes. Participants are often already well integrated into the labour market, while those with greater upskilling needs remain under-represented. Given its wide applicability, limited oversight, and relatively low requirements for training intensity and content, the programme's educational component may be too weak to generate substantial human-capital gains. Educational-leave policies should therefore reach under-represented groups, ensure training quality, and align programme objectives closely with labour-market needs.

Related literature: Our paper contributes to several strands of the literature. First, it adds to the broader body of research on programme evaluation. Reviews by Le Barbanchon et al. (2024), Card et al. (2018), and Card et al. (2010) show that active labour-market policies with a human capital component tend to yield stronger effects over time – an insight supported by our findings. Human capital theory provides a useful framework for assessing such programmes, accounting for foregone earnings, training costs, and future income gains (Becker, 1962; Stevens, 1994). Second, the paper complements the literature on government-subsidised training for employed individuals – a group less studied than training for the unemployed (McCall et al., 2016). Third, it contributes to the very limited international evidence on educational leave schemes.

So far, some studies have evaluated the effects of adult education in Sweden, where employees with at least six months of service have a legal right to unpaid study leave (Hällsten, 2012; Stenberg et al., 2014). However, these studies do not examine specific educational leave programmes. To our knowledge, only two studies to date evaluate schemes that explicitly involve formal work release – reflecting the rarity of such programmes internationally. First, Rüter et al. (2020) evaluate the 2015 introduction of a legal entitlement to five days of paid educational leave in Baden-Württemberg, Germany, and find no significant effect on participation in adult learning. Second, Kauhanen (2021) examines Finland's adult education allowance, which grants workers with at least eight years of experience two to eighteen months of paid leave for formal education. He finds substantial positive effects on educational attainment and occupational mobility, while earnings and employment decline during the lock-in period and return to near zero afterwards, with stronger gains for lower-educated individuals.

We contribute to this relatively under-researched topic by providing a comprehensive evaluation of a large-scale educational leave scheme that includes both full-time and part-time options. We analyse short-, medium-, and long-term labour-market effects. Moreover, we complement the impact analysis with subjective insights into how the programme is actually used and experienced – shedding light on its practical functioning and helping to interpret our empirical findings.

The remainder of the paper is structured as follows. The next two sections outline the institutional design of the Austrian educational leave programme and present participation figures. Section 4 describes the identification strategy, the data and variables, the sample, and the participant survey. Section 5 presents the effects on employment and earnings, including results for part-time leave and the participant survey, and Section 6 concludes.

2 The educational leave programme

Further education often requires time that employees cannot spare, and interruptions in employment come with a loss of income. To address these barriers, Austria introduced an educational leave programme in 1998. This scheme allows employees to take time off work – either full-time or part-time – for training purposes, while receiving financial

compensation to partially offset lost income. Since its inception, the programme has undergone several reforms, most notably the introduction of the part-time option in 2013, alongside changes to eligibility criteria, benefit levels, and the maximum duration.

Under the most recent rules, employees can agree with their employer to take up to one year of full-time educational leave.[2] This leave can be taken in one continuous block or in segments of at least two months within a four-year period.[3] There is no legal entitlement to participate. To be eligible, individuals must have been in continuous, non-marginal employment covered by unemployment insurance for at least six months, be entitled to unemployment benefits, and obtain their employer's consent. Participation is also possible immediately after parental leave or other qualifying periods of leave.

During full-time leave, employees are released from their work obligations and receive a training allowance from the Public Employment Service (PES), equivalent to unemployment benefits,[4] with a minimum of €14.53 per day (as of 2023). Marginal employment – either with their current employer or a different one – is permitted during the leave, allowing participants to supplement their allowance by up to €500.91 per month (2023).

Training can be undertaken in Austria or abroad, but must be job-related. Eligible activities include language courses, technical/IT training, and university degrees. Hobby or leisure courses do not qualify. Training must comprise at least 20 hours per week, including learning time (16 hours for participants with a child under seven), or 8 ECTS credits per semester for academic programmes. Other proof of academic progress is accepted, e.g. degree certificates, passing diploma examinations, or documented thesis progress.

Part-time educational leave also requires at least six months of continuous employment subject to unemployment insurance, and the employer's consent. Employees may reduce their working hours by 25-50%, down to a minimum of 10 hours per week, for up to two years. This reduction can be taken either continuously or in blocks of at least four months within a four-year period. Participants receive €1 per day (as of 2023) for each hour their weekly working time is reduced. Training must be job-related and comprise at least 10 hours per week (including learning time) or 4 ECTS credits per semester for university-level education (Bundesministerium für Arbeit, Soziales und Konsumentenschutz (BMASK), 2013; Bundesministerium für Arbeit und Wirtschaft (BMAW), 2023).

[2] Temporary exceptions allowed longer durations during the COVID-19 pandemic.

[3] A new leave period can only begin after four years have elapsed since the start of the previous one.

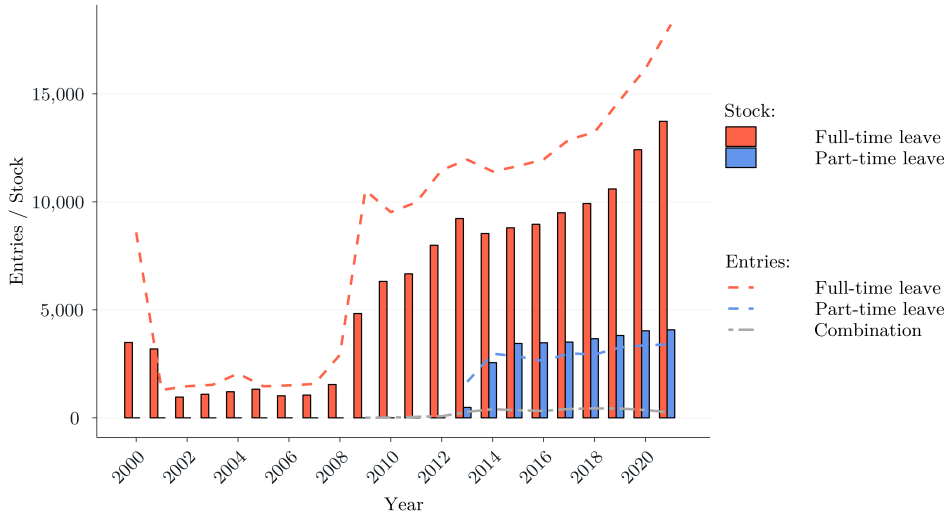
[4] In Austria, unemployment benefit amounts to 55% of the recipient's previous net income, but it can be higher due to family supplements or additional allowances for low-income households.

3 Programme participation

3.1 Full-time leave

Before the financial and economic crisis of 2009, enrolment was low. However, the crisis prompted policymakers and companies to make educational leave more accessible and attractive. As a result, annual enrolment increased sharply, reaching 18,295 participants in 2021, with an average of 13,727 people on leave in that year (see Figure 1).

Figure 1: Programme entries and participant stock

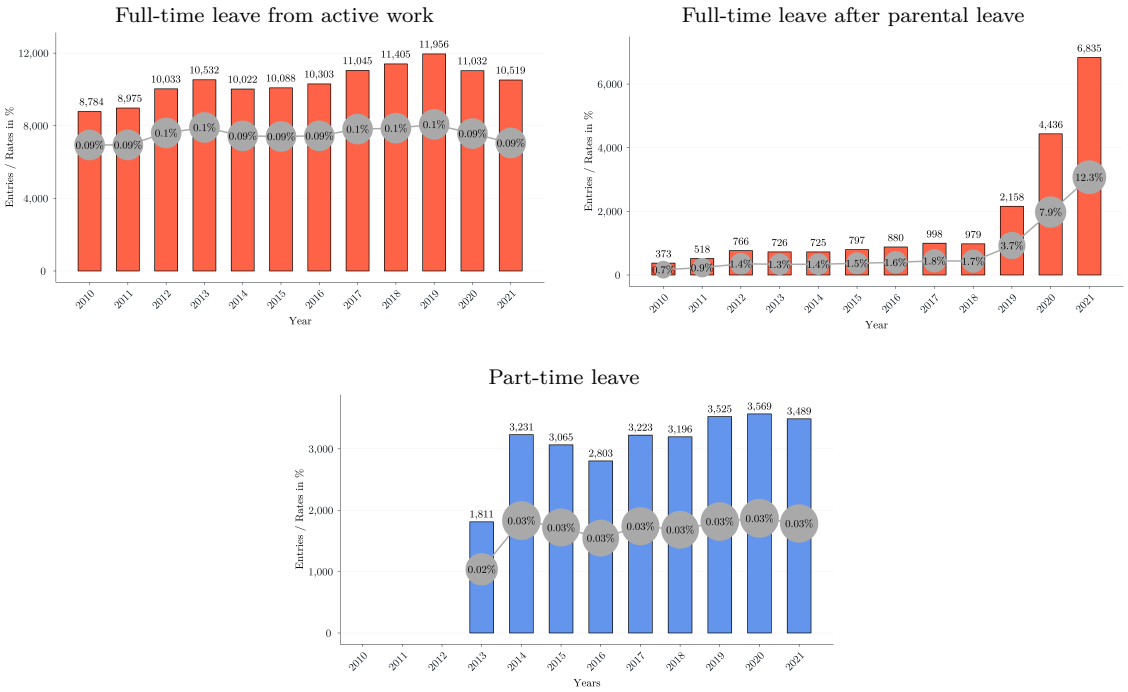


Source: AMS, WIFO calculations. Stock: annual average number of participants. Combinations: Switches between full- and part-time educational leave.

At the same time, the increase in employment has widened the pool of potential participants, with the majority still coming from active dependent employment (around 60% in 2021). Among this group, the participation rate for full-time educational leave has remained stable at around 0.1% since 2010. By contrast, a strong increase was observed from 2019 onwards among women taking educational leave after parental leave. For this group, the participation rate rose from just 0.7% in 2010 to 12.3% in 2021 (see Figure 2).

This increase is likely driven by education providers targeting mothers with flexible, low-intensity courses that enable extended periods of state-supported childcare. The increase was particularly pronounced among high-income mothers. Many of them take educational leave after first drawing the income-dependent childcare allowance, which is

Figure 2: Number of programme entries and participation rates (in %)



Source: AMS, ASSD, and own calculations. Full-time leave from active work: Share of employed persons aged 15–64 in Austria with at least 3 months' job tenure and a new entitlement who have not previously participated or have completed a prior participation. Full-time leave after parental leave: Share of women in Austria with an ongoing employment relationship who have returned from at least 3 months of maternity/parental leave and meet the same eligibility criteria.

available for up to one year and is financially more attractive for higher earners.[5] Persons on full-time educational leave tend to be young, disproportionately well educated and predominantly female (see Appendix, Tables A.1 and A.2 for a distribution of programme entries by personal characteristics and Table A.3 for participation rates by subgroups). As a result of the significant increase in take-up after parental leave, three out of four people on educational leave are now women, 56% of those entering from active employment and 99% of those entering from parental leave. The average age of participants is 32. With less than a fifth of participants aged over 40 and only 5% aged 50 or over, the programme has so far struggled to reach older workers.

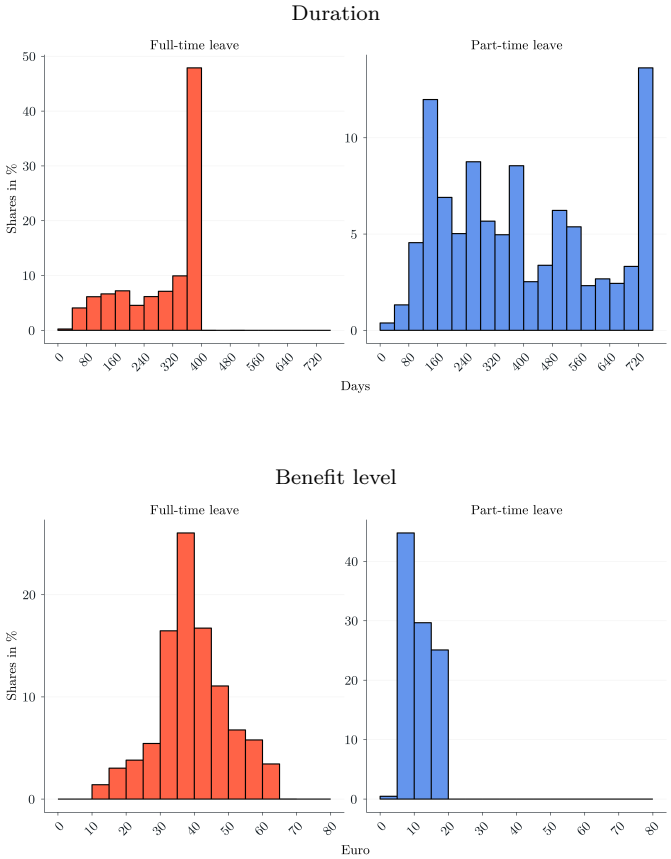
In addition, the programme has struggled to engage those with lower levels of formal

[5] As an alternative to the income-related childcare allowance, a parent can also decide to stay with the child for longer than a year and receive a lump-sum childcare allowance, which, however, is much lower than the income-related childcare allowance, especially when combined with the training allowance received during educational leave. After our observation period, the number of mothers taking full-time educational leave after parental leave continued to rise, significantly raising participants to over 22,000 in 2023, which is more than double the 2018 amount (Bundesministerium für Arbeit, Soziales und Konsumentenschutz (BMASK), 2013; Bundesministerium für Arbeit und Wirtschaft (BMAW), 2022, 2023).

education, with more than half of participants having at least an A-level qualification. This trend reflects a wider international observation, as individuals with higher levels of education are typically more inclined to participate in further education (Fouarge et al., 2013). In the Austrian programme, those with an apprenticeship qualification are particularly underrepresented. Furthermore, natives are more likely to take advantage of the programme than foreigners, and white-collar workers participate more frequently than blue-collar workers.

More than half of the participants are on full-time educational leave for about a year. The median duration in 2021 was 356 days. About 80% of the participants take educational leave in one go. The median amount of the training allowance was around €38 per day in 2021, which corresponds to €1,140 per month (see Figure 3 for the distribution of programme entries by participation duration and level). Almost 40% top up this wage replacement benefit at some point during leave through marginal employment. For 8.4% of all new participants in 2021, it was not their first time in full- or part-time leave.

Figure 3: Programme duration and benefit level



Source: AMS, ASSD, own calculations. Programme entries 2021. Benefit level: amount of training allowance.

3.2 Part-time leave

Part-time leave is taken up significantly less often than educational leave. In 2021, just over 3,500 people entered the programme, roughly one in every 3,000 potentially participating actively employed workers (0.03%). In contrast to full-time leave, part-time leave is almost never taken immediately after parental leave. Combinations of full- and part-time leave, i.e. switching between the programmes, have been rare so far. About 60% of participants take part-time leave in one go. It is therefore split more often than the full-time variant. Less than a fifth take advantage of the maximum duration of two years. The median duration is about 1 year (362 days), the median allowance is around €11 per day, or approximately €330 per month (see Figure 3 in the Appendix). Part-time leave is also taken up more often by women (59% in 2021). Participants are, on average, 30 years old, and thus younger than those taking full-time leave. Individuals with higher education are also overrepresented in this group (see Tables A.1 and A.4 in the Appendix).

4 Empirical research design

4.1 Treatment effect estimation

4.1.1 Identification strategy

We identify the effects of full- and part-time leave on labour market outcomes through a counterfactual comparison of individuals who participated in the programme (treatment group) and similar individuals who did not (control group). Following the potential outcomes framework developed by Splawa-Neyman (1990), Fisher (1935), and Rubin (1974, 1978, 1980), we estimate the Average Treatment Effect on the Treated (ATT) as the difference between observed outcomes of participants and the counterfactual outcomes they would have experienced in the absence of treatment (cf. Heckman et al., 1999). Since the counterfactual outcomes for participants are not observed, we approximate them using the outcomes of a control group of similar non-participants. A simple comparison of means would yield biased estimates due to non-random treatment assignment. To address this, we employ dynamic nearest-neighbour propensity score matching (Rosenbaum & Rubin, 1983) to adjust for observable pre-treatment differences.

Our matching procedure consists of three steps: First, we estimate the propensity score using a logit model with a rich set of covariates, capturing the likelihood of participation based on observed characteristics. Second, we match each treated individual to up to four similar non-treated individuals using matching with replacement and a caliper of 0.5 to ensure close matches. Third, we estimate the ATT by comparing outcomes of treated and matched controls over the region of common support. Statistical inference is based on robust standard errors following Abadie and Imbens (2006).

Formally, let $D_i \in \{0, 1\}$ indicate participation, with potential outcomes Y_{1i} (treated) and Y_{0i} (untreated). The observed outcome is:

$$Y_i = D_i Y_{1i} + (1 - D_i) Y_{0i} \tag{1}$$

The individual treatment effect is:

$$\Delta_i = Y_{1i} - Y_{0i} \tag{2}$$

The ATT is defined as:

$$ATT = \mathbb{E}[\Delta_i \mid D_i = 1] = \mathbb{E}[Y_{1i} \mid D_i = 1] - \mathbb{E}[Y_{0i} \mid D_i = 1] \tag{3}$$

The first term is observed, while the second is counterfactual. Under the Conditional Independence Assumption (CIA), the ATT can be identified conditional on covariates X:

$$ATT = \mathbb{E}[Y_{1i} \mid X, D_i = 1] - \mathbb{E}[Y_{0i} \mid X, D_i = 0] \tag{4}$$

Our matching approach relies on two identifying assumptions: (1) conditional on the propensity score, treatment assignment and potential outcomes are independent (Conditional Independence Assumption, CIA), and (2) there is sufficient overlap in the distribution of covariates between the treatment and comparison groups (common support condition). We observe the whole population of dependent employees in Austria and do not draw from a random sample. Therefore, there is a sufficiently large pool of potential controls and overlap. As post-matching balancing tests confirm, the chosen propensity-score-matching procedure balances the distribution of covariates very well. Regarding the CIA, several features of Austria's educational-leave programme provide a rationale for why, among units equivalent on a rich set of observables, residual treatment variation is unlikely to be systematically related to subsequent employment or earnings.

First, given matched observables, unobservable influence is diminished as participation requires employer approval, introducing a firm-side gatekeeper. Our survey confirms that employers play an important role, with more than a quarter of employees (27%) encountering resistance to their request for educational leave. Accordingly, approval propensities plausibly vary with firm-side conditions and sectoral labour demand. We proxy these factors with a broad set of establishment characteristics (industry and firm size, pay and workforce structure, hiring patterns, employment dynamics) and rich regional labour-market indicators and typologies. This detailed pre-treatment matching should therefore absorb much of this selection channel.

Second, survey evidence shows that educational leave is often used for anticipated separations: 38% did not expect to remain with their employer after leave, and about one-sixth had agreed at the outset to end employment. For this group, the decision margin shifts from whether to separate to the mode and timing of separation (with versus

without educational leave), a choice shaped by observables we condition on (tenure, prior earnings, industry, firm size, seasonality, region) and institutional scheduling constraints (notice periods, staffing cycles, course calendars) rather than unobserved productivity. Accordingly, we estimate effects separately for 'stayers' and 'leavers' (see Section 5.2.3). For leavers, the estimand contrasts separation with versus without leave, aligning the counterfactual with the decision margin. If selection on unobserved performance were strong, gaps relative to control leavers would persist or widen; instead, they narrow over time, consistent with a mode-and-timing effect (training crowding out job search) rather than selection on unobserved ability. For 'stayers' (returnees), long-run effects are small and weakly significant; if unobserved performance differences drove participation, we should observe different post-leave trajectories than matched controls. This argues against strong outcome-relevant selection (including cream-skimming).

Third, in Austria, near-universal collective bargaining standardises pay scales and working conditions within occupation–industry cells. Conditional on rich pre-treatment worker, job, firm, and region covariates, this reduces residual heterogeneity in wage potential and strengthens the plausibility of selection on observables for earnings.

Despite these arguments, we cannot fully rule out that unobserved motivation or productivity influence participation, because the administrative data omit some relevant dimensions. First, we lack direct measures of education, working hours, contract type, and job position. Second, employer-level selection is possible: education-oriented firms may approve leave for valued employees, while others may be more likely to approve leave for employees perceived as less productive. We mitigate these risks by conditioning on rich pre-treatment information including multi-year earnings histories, tenure and employment stability, PES-training participation, sickness-benefit episodes and detailed firm and regional covariates (pay structure, workforce composition, turnover, and growth).

Finally, to substantiate our claims, we estimate pseudo-effects of entering full- or part-time educational leave on our main dependent variables, employment and unemployment, measured two years[6] before the (hypothetical) start of treatment, using the same matching design ((Imbens & Rubin, 2015), Chapter 21). We find no statistically significant effects on these lagged outcomes (see Table A.10), supporting CIA plausibility.

4.1.2 The counterfactuals

We examine separately the effects of participating the two further education programmes: educational leave and part-time education. The rare cases in which an individual combined the two are excluded. We focus on blue- and white-collar workers entering the programmes from active dependent employment, as this has traditionally been the main target group. Entries from parental leave have only recently become more common and there is not yet a sufficiently long observation period to assess the career outcomes for these participants.

[6] As our sample consists of employees with a minimum job duration of three months, and the vast majority of them were employed one year prior, we test the pseudo-effect two years before treatment start.

To construct comparison groups, we stratify the evaluated programme entries into quarterly intervals. In each quarter from 2010 to 2019 (in the case of part-time leave 2013-2019), we compare those who entered the programme (treatment group) with similar people who would have been eligible in that quarter but did not yet participate (control group). Thus, we first split the sample into numerous subpopulations and estimate propensity scores separately for each stratum, based on different sets of controls.[7] We then pool all quarterly samples to estimate programme effects. By allowing persons in the control group to participate later, we take into account the dynamics of the participation process and avoid a possible selection bias resulting from conditioning on outcomes (Fredriksson & Johansson, 2008; Sianesi, 2004).

We control for the socio-demographic characteristics of the employee, the characteristics of the establishment and the region of residence on the day before the quarter, i.e. immediately before (hypothetical) programme entry. From this date on, we also adjust in detail for differences in labour market history. To assess treatment effects, we compare the employment and earnings outcomes of participants and non-participants over a twelve-year period for full-time leave and a nine-year period for part-time leave, starting on the first day after programme entry. Earnings are observed for one year less in each case due to a one-year reporting lag in the earnings data.

Depending on the year of programme entry, the length of the follow-up period varies. As a result, the sample composition changes with the duration of observation. Since the data cover all years up to 2022, all entries from 2010 to 2019 (2013–2019 for part-time leave) are included in the estimation of 1-, 2-, and 3-year effects. 4-year effects are based on entries up to 2018, 5-year effects on entries up to 2017, and so on.

4.1.3 Data and variables

Our analysis is based on two merged sources of administrative data. The Austrian PES data includes the programme episodes, receipt of training allowance, information on the socio-economic characteristics of the participants, and participation in active labour market policy measures. The Austrian Social Security Database (ASSD), the second data set we use is a matched firm-worker dataset administered by the Association of Austrian Social Security Institutions. It provides a complete record of all labour market histories on a daily basis from 1972 onwards, information on earnings on a monthly basis, demographic characteristics, and employer attributes. We also add numerous characteristics of the region of residence of programme participants calculated from PES and social security data at the level of the local labour market district, i.e., the geographical area covered by the regional employment office.

Using this extensive database, we adjust for differences in personal, establishment, job and regional characteristics. We control for sex, age and nationality, and distinguish between workers and employees, first-time and repeated employment with the same em-

[7] Due to the large number of different estimates, we refrain from presenting propensity score estimates.

ployer, and jobs taken after unemployment. We control for previous job tenure, economic activity and gross monthly earnings. Our indicators of long-term employment history include the employment status on annual reference dates during the last ten years and the total number of days spent in different employment statuses (categorised by year) during the 15 years prior to (hypothetical) programme participation. We distinguish between subsidised and unsubsidised dependent employment, self-employment, temporary absences, registered unemployment, periods in PES training and other PES registration statuses. In addition, we take into account periods of sickness benefit receipt during employment and unemployment and periodically consider cumulative earnings over the last ten years.

As regards participation in active labour market programmes, we control for short-time working and participation in PES training in the last four years. Establishment characteristics include factors such as establishment age, firm size, indicators of the workforce composition (e.g. gender ratio, age and income distribution, proportion of employees), whether the establishment employs apprentices, the frequency of year-round employment, the hiring of different subgroups of the unemployed, employment growth and turnover rates. Moreover, our regional characteristics relate to the type of economic region, the development of unemployment, employment and labour supply, the characteristics of the unemployed, the extent of long-term unemployment, the importance of seasonal unemployment, the sectoral structure of employment, and the share of foreign workers (see Table A.9 in the Appendix for a complete list of control variables).

Our primary measure of programme effectiveness is the proportion of people in employment at the annual cut-off dates after programme start. This includes those who are temporarily absent for reasons such as parental or educational leave, as well as those doing military or civilian service. We distinguish between dependent employment and self-employment and also compare the proportions of people in unemployment and economic inactivity. Unemployment is broadly defined to cover all unemployed persons registered with the PES, including those participating in PES training. Economically inactive persons are persons who are neither employed nor unemployed in Austria. In addition to the employment status at the cut-off dates, we compare the total number of days that individuals spend in each employment status during the follow-up period.

For earnings effects, we use two indicators: (1) average monthly earnings during periods of employment and (2) cumulative annual earnings. Both measures are derived from (top-coded) social security contribution records (excluding extra payments such as the 13^{th} and 14^{th} salary and other bonuses). While monthly earnings are conditional on being employed, cumulative earnings reflect both employment volume and wage levels, and take a value of zero in years without employment.

4.1.4 Sample

Our sample comprises all actively employed workers and employees aged 20 to 45 whose employment relationship had lasted for at least three months prior to the quarter of (hypothetical) programme entry. This minimum job tenure has always been a prerequisite,

regardless of any programme reforms. We exclude civil servants, freelancers, apprentices, seasonal workers, and individuals in marginal employment, as these groups, if eligible, rarely participated.

Furthermore, we exclude all individuals who died during the follow-up period, resided abroad, or lacked data on sex, age, education, residence, or employer characteristics. The individuals considered must not have participated in any active labor market programme during the observed quarter and the preceding six months. Moreover, any prior entry into one of the evaluated programmes must have occurred more than four years ago so that a person was eligible again.

Our final sample consists of 89,054 people who entered full-time leave between 2010 and 2019. Each quarter, the treatment group includes around 1,000 to 3,000 people and the potential control group, 1.5 to 1.7 million people. For part-time leave, our final sample includes 17,294 programme entries, ranging from 263 to 1,185 depending on the quarter.

Table A.9 provides comparisons of pre-treatment covariate means between the evaluated treated individuals and potential controls (before matching) for the example of full-time leave, based on our pooled datasets covering the years 2010 to 2019. These summary statistics confirm that, even among the actively employed, women, young people, nationals and employees are overrepresented. Due to their significantly younger age, the treated were on average much less employed and earned less than the potential controls.

4.2 Participant survey

We conducted an online survey to supplement the quantitative impact analyses based on administrative data. The target population included individuals who completed full- or part-time educational leave between 1 January 2019 and 30 November 2022. For individuals with multiple programme completions during this period, we selected the most recent one. The resulting survey population comprised 64,886 individuals: 37,896 who took full-time educational leave from active employment, 14,460 who did so following parental leave, and 12,530 who took part-time educational leave. Of the contact information provided by the Austrian Ministry of Labour, 62,838 email addresses were valid. The survey yielded 18,796 completed questionnaires, yielding a response rate of 30.5%. For analytical consistency, we restricted the sample to respondents who reported having completed their programme in a single block, resulting in a final dataset of 18,005 valid responses.

The final questionnaire comprised 17 items divided into four thematic sections and required approximately 10 to 15 minutes to complete. These sections covered general background (type of programme, completion format, qualifications obtained, prior employment status), the training undertaken (time spent, number and types of courses), motivations and perceived impact (reasons for participation, subjective assessments of programme effects), and contextual factors and outcomes (role of employers, external conditions, and personal outcomes related to the training experience).

All responses were anonymised and merged with administrative data to enrich the

dataset with demographic and labour market information. Weighting adjustments based on gender, age, and educational attainment were applied to correct for sampling biases. Specifically, participants in part-time educational leave were under-represented, while those in full-time leave were over-represented.

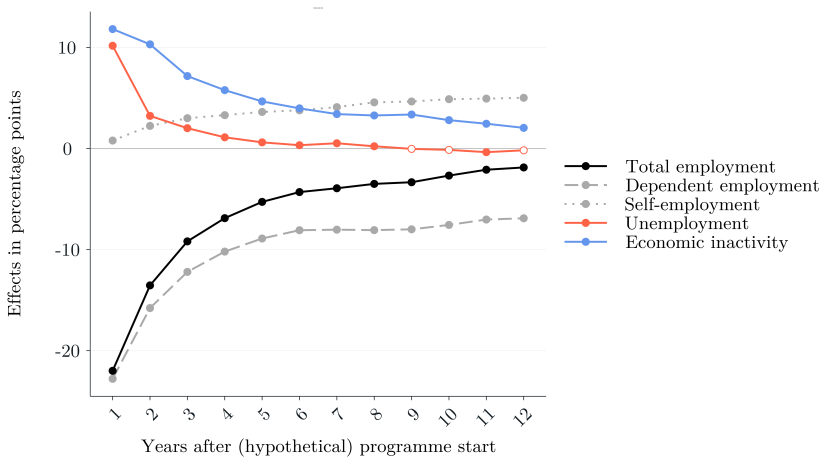
5 Results

5.1 Full-time leave: main results

5.1.1 Employment effects

Figure 4 illustrates the impact of full-time educational leave on the probability of being in each of the five labour market states at annual cut-off dates after programme entry. In the short term, participants are significantly less likely to be employed. This reflects that many enter educational leave at the end of an employment relationship and require time to reorient themselves and find new work. Over time, the gap narrows as more participants return to employment. Six years after programme start, 84.2% of participants are employed – 4.3 percentage points (4.9%) less than comparable non-participants. After nine years, the difference remains at 3.3 percentage points (3.8%), and after twelve years it still stands at 1.9 percentage points (2.1%). These figures indicate a modest but persistent long-term negative effect on employment probability.

Figure 4: Effects of full-time educational leave on subsequent employment status



Notes: Average effect (in percentage points) of educational leave on the share of people in the respective employment status on the annual cut-off dates after (hypothetical) programme entry. Empty markers indicate statistically insignificant values (at the 10% significance level).

Full-time educational leave significantly reduces the likelihood of subsequently being in dependent employment, with a difference of 6.9 percentage points (8.3%) after twelve

years. Conversely, it increases the probability of being self-employed by 5.0 percentage points (82.3%). This suggests that some participants are using the programme as a means of becoming self-employed. In the short term, participants are significantly more likely to be unemployed and economically inactive than non-participants, probably because many are in a reorientation phase. In the medium to long term, however, there is no significant impact on unemployment shares. The moderate decline in employment probability is mirrored by a corresponding increase in economic inactivity, which rises by 2.0 percentage points (or 27.5%) twelve years after programme entry.[8]

Table 1 provides a breakdown of the effects. In the control group, 92.4% are employed after one year, 89.5% after two years, and 89.7% after twelve years. These counterfactual outcomes indicate that long-term employment among participants would have been high even without the programme. This suggests that educational leave primarily attracts a positively selected group of workers who are already well integrated into the labour market, making further increases in their employment probability unlikely.[9]

5.1.2 Earnings effects

Participation in full-time leave has a negative short-term effect and a positive medium- and long-term effect on average monthly earnings if employed (see Table 2). In the first year after programme start, participants earn on average €98 less than non-participants, followed by a decrease of €122 in the second year and €56 in the third year. By the fourth year, the loss in earnings falls to just €5. Thereafter, the effect becomes positive, rising from €24 in the fifth year to €203 in the eleventh year (mean for the treated: €3,405; controls: €3,202).[10] In relative terms, the long-run treatment effect on monthly earnings is 6.3%, which is economically meaningful and similar in magnitude to the return to an additional year of schooling on hourly wages in Austria (6.4% in Fessler and Schneebaum (2019)). Initially lower monthly earnings may reflect lower entry wages for job-changers, given that prior service is commonly not fully recognised in Austria when changing jobs. Another factor may be that educational leave leads to a loss of work experience, which employers take into account when determining salary levels. The positive medium- and long-term effects suggest that investment in human capital often pays off with a certain time lag in the form of higher wages.

However, for full-time leave, higher monthly earnings do not fully offset fewer days in

[8] In the first year after (hypothetical) programme start, participants are employed for an average of 331 days, 13 days less than matched controls (344 days). In the second year, the gap widens to 63 days and then narrows to 7 days by the twelfth year. The negative effect on dependent-employment days increases from 12 days in the first year to 68 days in the second year, before decreasing to 25 days in the twelfth year, a substantial reduction of 8.0%. Participants match controls in self-employment days in year 1, exceed them by five days in the second year, and by 18 after 12years. Results are available on request.

[9] Separate estimates for each year of programme start show that the effects of full-time educational leave have changed little over time. They vary only magnitude. Results are available on request.

[10] Income data are available with a one-year lag. Therefore, in contrast to the employment outcomes, we can only observe a follow-up period of 11 years instead of 12.

Table 1: Effects of full-time leave on subsequent employment status

	Treated	Controls	Treatment effect	
			Abs. (SE)	Rel.
	%	%	PP	%
After 1 year				
Employment	70.4	92.4	-22.0***(0.2)	-23.8
Dependent employment	68.5	91.3	-22.8***(0.2)	-24.9
Self-employment	1.7	0.9	+0.8***(0.0)	83.8
Unemployment	14.6	4.4	+10.2***(0.1)	230.1
Economic inactivity	15.0	3.2	+11.8***(0.1)	369.4
After 3 years				
Employment	80.3	89.5	-9.2***(0.1)	-10.3
Dependent employment	75.0	87.2	-12.2***(0.2)	-14.0
Self-employment	5.2	2.2	+3.0***(0.1)	137.3
Unemployment	6.5	4.5	+2.0***(0.1)	45.0
Economic inactivity	13.2	6.1	+7.2***(0.1)	118.2
After 6 years				
Employment	84.2	88.5	-4.3***(0.2)	-4.9
Dependent employment	76.5	84.6	-8.1***(0.2)	-9.6
Self-employment	7.6	3.8	+3.8***(0.1)	99.0
Unemployment	4.4	4.1	+0.3***(0.1)	8.1
Economic inactivity	11.5	7.5	+4.0***(0.1)	53.2
After 9 years				
Employment	85.4	88.7	-3.3***(0.2)	-3.8
Dependent employment	75.7	83.7	-8.0***(0.3)	-9.6
Self-employment	9.7	5.0	+4.7***(0.2)	92.3
Unemployment	3.8	3.8	0.0 (0.1)	-0.8
Economic inactivity	10.8	7.5	+3.4***(0.2)	45.1
After 12 years				
Employment	87.9	89.7	-1.9***(0.4)	-2.1
Dependent employment	76.7	83.6	-6.9***(0.5)	-8.3
Self-employment	11.1	6.1	+5.0***(0.4)	82.3
Unemployment	2.7	2.8	-0.2 (0.2)	-6.2
Economic inactivity	9.5	7.4	+2.0***(0.4)	27.5

Notes: Abs.: absolute effect (difference between treated and controls) in percentage points (PP); Rel.: relative effect in %. SE: standard errors. *** significant at the 1% level, ** at 5%, * at 10%.

employment, so even in the eleventh year after programme start participants still have lower cumulative earnings than comparable non-participants. In the first year, they earn over €14,000 less. This reflects that during educational leave they receive a training allowance from the PES instead of a regular wage. By the eleventh year, the loss in earnings falls to €826, a reduction of 2.6% compared to the average earnings of the control group (treated: €30,97; controls: €31,799).

Table 2: Effects of full-time leave on earnings

	Treated	Controls	Treatment effect	
			Abs. (SE)	Rel.
	€	€	€	%
Monthly earnings				
1st year	2,307	2,405	-98***(423)	-4.1
2nd year	2,395	2,517	-122***(409)	-4.8
3rd year	2,533	2,589	-56***(450)	-2.2
4th year	2,664	2,670	-5 (498)	-0.2
5th year	2,778	2,754	+24***(564)	0.9
6th year	2,888	2,818	+71***(642)	2.5
7th year	2,995	2,888	+107***(713)	3.7
8th year	3,089	2,964	+125***(827)	4.2
9th year	3,186	3,027	+159***(1,019)	5.2
10th year	3,263	3,112	+151***(1,304)	4.9
11th year	3,405	3,202	+203***(1,908)	6.3
Yearly earnings				
1st year	12,104	26,443	-14,340***(4,855)	-54.2
2nd year	20,770	26,685	-5,915***(5,682)	-22.2
3rd year	21,025	24,992	-3,967***(5,738)	-15.9
4th year	24,164	27,189	-3,025***(7,183)	-11.1
5th year	25,007	27,556	-2,550***(8,130)	-9.3
6th year	25,892	27,989	-2,096***(9,182)	-7.5
7th year	26,812	28,649	-1,838***(10,211)	-6.4
8th year	27,564	29,374	-1,810***(11,899)	-6.2
9th year	28,472	30,023	-1,552***(14,311)	-5.2
10th year	29,308	30,722	-1,414***(18,726)	-4.6
11th year	30,974	31,799	-826***(27,404)	-2.6

Notes: Abs.: absolute effect (difference between treated and controls) in Euro. Rel: relative effect in %. SE: standard error. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

5.2 Full-time leave: effect heterogeneity

5.2.1 Effects by population group

We find no large differences in effects among demographic groups (see Table 3). In most cases, educational leave has a strong short-term and modest long-term negative effect on employment probability. The gender-specific differences are small, as are those between age groups. Individuals who have completed an apprenticeship and those under 25 differ from the other groups in that the effect becomes statistically insignificant for them after twelve years. The most pronounced differences are by income. The higher the last gross monthly income from dependent employment prior to educational leave, the more unfavourable is the effect of full-time leave. For individuals with low income (below two-thirds of the median), participation shows no long-term effect on average; for those with medium income, it reduces employment probability by 1.9 percentage points (2.0%) after twelve years, while for those with high income (above one and a half times the median), the reduction is 4.9 percentage points (5.3%).[11]

Since participants are well integrated in the labour market and unlikely to further improve their employment probability, we focus on the minority in less stable employment. To this end, we define instability as having been employed for less than 90% of the time over the past two years, and having spent more than 10% of the time either unemployed, in PES-subsidised jobs, or out of the labour force. By this definition, 18.4% of all participants are classified as having unstable employment. We cannot apply stricter criteria, as the subsample would be too small for meaningful analysis. For this group, the long-term effect after twelve years is statistically insignificant, compared to a negative effect of –2.9 percentage points for those in stable employment. This suggests that the programme has more favourable effects for participants with unstable employment histories.

5.2.2 Effects by mode of participation

Comparing the effects of educational leave by mode of participation, we find that in the medium- to long-term, there is little difference between taking full-time leave at once or in blocks. Taking less than a year's leave has a weaker negative effect on employment than taking a full year's leave. If people are marginally employed during leave (with the same or a different employer), the negative effect is less pronounced. For those who work more than half the time, we find no statistically significant effect on the probability of being employed twelve years after programme start (see Table A.6 in the Appendix).

This favourable role of marginal employment could be due to several factors. First, it may reflect positive selection of employees whose employers aim to retain them by offering at least marginal employment during and after their leave. Second, these individuals may be more likely to intend to stay with their employer, leading to greater employment stability. Third, marginal employment with another employer may serve as a positive

[11] For the number of people treated by subgroup, see Table A.5 in the Appendix.

Table 3: Effects of full-time leave on subsequent employment share by population group

	6 years		9 years		12 years	
	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %
Total	-4.3***(0.2)	-4.9	-3.3***(0.2)	-3.8	-1.9***(0.4)	-2.1
Men	-4.2***(0.2)	-4.6	-2.8***(0.3)	-3.0	-1.3** (0.5)	-1.5
Women	-4.7***(0.2)	-5.4	-4.2***(0.3)	-4.8	-2.6***(0.7)	-3.0
Age under 25	-4.6***(0.3)	-5.3	-2.2***(0.4)	-2.4	-0.9 (0.9)	-0.9
Age 25 to under 35	-4.4***(0.2)	-5.0	-3.9***(0.3)	-4.4	-2.8***(0.6)	-3.1
Age 35 and over	-3.3***(0.3)	-3.8	-2.1***(0.4)	-2.5	-1.2* (0.8)	-1.6
Apprenticeship	-3.3***(0.3)	-3.6	-1.4***(0.4)	-1.5	-0.3 (0.7)	-0.3
Low earners	-2.9***(0.4)	-3.4	-1.5***(0.5)	-1.8	-0.8 (1.0)	-1.0
Middle earners	-4.5***(0.2)	-5.0	-3.6***(0.3)	-4.0	-1.9***(0.5)	-2.0
High earners	-6.6***(0.5)	-7.3	-5.6***(0.6)	-6.1	-4.9***(1.2)	-5.3
Stable employment	-4.9***(0.2)	-5.5	-3.8***(0.2)	-4.3	-2.9***(0.4)	-3.1
Unstable employment	-2.3***(0.4)	-2.8	-1.3** (0.6)	-1.6	1.0 (1.3)	1.2

Effects of educational leave on the subsequent share of the treated in employment by population group. Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. Apprenticeship: Persons with an apprenticeship qualification. Low earners: last monthly gross earnings below two-thirds of the median in the quarter. High earners: last monthly gross earnings above one and a half times the median. Middle earners: last monthly gross earnings neither below the low wage threshold nor above the high wage threshold. Unstable employment: employed for less than 90% of the time in the last two years and either unemployed, in PES-subsidised employment or out of the labour force for more than 10% of the time. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

signal and bridge to regular employment.

5.2.3 Stayers vs. leavers

Many participants are no longer employed by their former employer after educational leave. More than half of those who took educational leave in a single block (52.1%) were not employed by their previous employer four months after the end of their educational leave, but by another employer (25.5%) or were not actively employed at all (26.6%). Our survey of participants reveals that in many cases, it was clear from the outset that employment would end. In some cases, the employer seeks to terminate employment in a socially acceptable manner and therefore agrees to educational leave at the end of the employment relationship. In other cases, workers plan to leave but ask for educational leave beforehand.[12]

[12] According to our survey of participants, the initiative to terminate employment comes from the employee in about three-quarters of cases.

The non-participants in the control group were presumably less likely than participants to have already faced job termination. If, therefore, they had better employment prospects from the outset, which we cannot control for, this could explain the negative employment effects observed. To test for such a bias, we estimate treatment effects separately for those who remain employed by their employer (*'stayers'*) and for those who do not (*'leavers'*).[13] In both cases, we focus on treated individuals who took full-time leave in a single block, as only in these cases can we clearly identify the employer before and after leave.[14]

The available data do not provide information on a predetermined end of employment. Therefore, we approximate different counterfactuals based on the observable employment status at the end of educational leave. By comparing only those individuals who remain with their employer, we mimic a situation where the employment relationship is only temporarily interrupted for the purpose of training. In the second case, we compare taking educational leave at the foreseeable end of an employment relationship with the counterfactual of the employment relationship ending without prior educational leave.[15]

Table 4: Effects of full-time leave on subsequent employment share, stayers vs. leavers

	6 years		9 years		12 years	
	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %
Total	-4.3***(0.2)	-4.9	-3.3***(0.2)	-3.8	-1.9***(0.4)	-2.1
Leave in one go	-4.4***(0.2)	-4.9	-3.4***(0.2)	-3.8	-2.0***(0.5)	-2.3
Stayers	-2.0***(0.2)	-2.2	-1.8***(0.3)	-2.0	-1.1* (0.6)	-1.1
Leavers	-3.7***(0.3)	-4.4	-3.2***(0.4)	-3.8	-3.1***(0.9)	-3.7

Share employed after 6, 9 and 12 years. Only treated taking educational leave in one go. Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

We find that the impact of full-time educational leave is stronger for the leavers, but we also find a negative effect on employment probability for those who stay (see Table 4). In our main scenario, participation leads to a 1.9 percentage point lower employment rate after twelve years. Taking educational leave as a single spell is associated with a treatment

[13] We measure whether the treated persons are still employed by their employer four months after educational leave ends. This lag allows for notice periods and the possibility that leave entitlements may be taken before employment ends. For the controls, we distinguish between those who remained employed by their employer until the end of the quarter following the quarter of hypothetical programme entry and those who did not. As, on average, educational leave would have started in the middle of the quarter, we allow a notice period of 4.5 months until the end of the following quarter, similar to that for the treated.

[14] The stayers must have remained in a standard employment relationship with their former employer. Persons who were only marginally employed by their previous employer are excluded. They belong neither to the stayers nor to the leavers.

[15] We assume that for those who do not stay with their employer, the end of the employment relationship was likely to have been foreseen in advance in many cases.

effect of -2.0 percentage points. If we focus only on the treated and control who stayed with their employer, the effect is -1.1 percentage points (statistically weakly significant at the 10% level). For those who left their job, the effect is -3.1 percentage points.[16] This finding implies that our results are not significantly biased by the fact that employment relationships in the treatment group were more often in the process of ending.

5.2.4 Further robustness checks

Additional robustness tests show that our results do not depend on the precise definition of the population evaluated (see Appendix Table A.7). They do not change significantly if we (1) include combinations of educational leave and part-time leave, (2) include individuals with only marginal earnings prior to educational leave, (3) restrict the population to those moving directly from dependent employment to educational leave, (4) consider only individuals with a minimum employment duration of six months instead of three, (5) include only first-time employees with their employer, or (6) focus only on individuals who entered their job from unemployment, reflecting a limited job choice situation. In addition, the results remain consistent when we use alternative age ranges. To sum up, our findings are highly robust against a wide range of samples and counterfactuals, consistently showing either zero or negative effects on long-term employment.

5.3 Part-time educational leave

Part-time educational leave has no clear long-term effect on the probability of being employed, unemployed, or economically inactive for either women or men. After six years, the employment share in the treatment group is 0.8 percentage points higher than in the control group; after nine years, the shares do not differ in our main specification (see Table 5). Only in some variations of the evaluated population we still find a very small positive effect on the probability of employment after nine years (Table A.8 in the Appendix). However, the type of employment changes in all specifications: participants are less likely to be dependent employees and more likely to be self-employed as a result of participation, with changes of around 2 percentage points in each case after nine years.

For earnings, we find that in the short term – during the first two years – participants have lower average monthly wages than non-participants. In the medium to long term, however, their investment in human capital through further education appears to pay off, as they start to benefit from earnings increases of more than 200 € per month in the third and fourth years, and even more than 300 € in the sixth to eighth years. Unlike with educational leave, these higher monthly wages also translate into higher annual earnings (see Table A.8).

[16] In an additional scenario, we restrict the control group to those individuals who entered unemployment. In this way, we compare the take-up of educational leave with a counterfactual in which the treated individuals would have become unemployed instead. Even in this scenario, we find moderate negative employment effects up to a period of nine years.

Table 5: Effects of part-time leave on subsequent employment status

	Treated	Controls	Treatment effect		
			Abs.	(SE)	Rel.
	%	%	PP		%
After 1 year					
Employment	94.7	94.2	+0.4**	(0.2)	0.5
Dependent employment	94.2	93.5	+0.8***	(0.2)	0.8
Self-employment	0.4	0.7	-0.3***	(0.1)	-43.3
Unemployment	3.0	3.0	+0.0	(0.1)	0.9
Economic inactivity	2.3	2.8	-0.5***	(0.1)	-17.0
After 3 years					
Employment	90.5	90.9	-0.4*	(0.3)	-0.5
Dependent employment	88.4	89.2	-0.8**	(0.3)	-0.9
Self-employment	2.0	1.7	+0.3**	(0.1)	19.4
Unemployment	3.4	3.0	+0.4**	(0.2)	13.0
Economic inactivity	6.1	6.0	+0.1	(0.2)	0.9
After 6 years					
Employment	90.4	89.6	+0.8**	(0.3)	0.9
Dependent employment	86.0	86.6	-0.6*	(0.4)	-0.7
Self-employment	4.4	3.0	+1.4***	(0.2)	47.9
Unemployment	2.5	3.0	-0.5**	(0.2)	-16.9
Economic inactivity	7.1	7.3	-0.3	(0.3)	-3.5
After 9 years					
Employment	90.4	90.3	+0.1	(0.9)	0.1
Dependent employment	83.8	85.7	-1.9*	(1.1)	-2.3
Self-employment	6.6	4.6	+2.0**	(0.7)	43.8
Unemployment	2.1	2.2	-0.1	(0.4)	-4.6
Economic inactivity	7.5	7.5	+0.1	(0.8)	0.7

Notes: Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

5.4 Participant survey

The participant survey offers detailed insights into the context, activities, motivations, and subjective outcomes associated with educational leave. Since individuals who took educational leave after parental leave are not included in our impact analyses, the survey results presented here also focus exclusively on individuals who took educational leave from active employment.

Table 6: Effects of part-time leave on earnings

	Treated	Controls	Treatment effect	
			Abs. (SE)	Rel.
	€	€	€	%
Monthly earnings				
1st year	2,008	2,390	-382***(626)	-16.0
2nd year	2,402	2,557	-156***(781)	-6.1
3rd year	2,767	2,664	+103***(915)	3.9
4th year	2,980	2,766	+214***(1,101)	7.7
5th year	3,140	2,886	+254***(1,328)	8.8
6th year	3,290	2,969	+320***(1,702)	10.8
7th year	3,396	3,056	+340***(2,268)	11.1
8th year	3,477	3,137	+340***(3,928)	10.8
Yearly earnings				
1st year	23,507	26,938	-3,432***(7,972)	-12.7
2nd year	26,549	27,410	-860***(10,589)	-3.1
3rd year	25,815	24,443	+1,372***(11,542)	5.6
4th year	30,731	28,176	+2,555***(16,161)	9.1
5th year	31,756	28,938	+2,818***(19,791)	9.7
6th year	32,680	29,662	+3,018***(25,215)	10.2
7th year	33,352	30,172	+3,180***(33,784)	10.5
8th year	33,641	31,380	+2,261***(59,104)	7.2

Notes: Abs.: absolute effect (difference between treated and controls) in Euro. Rel: relative effect in %. SE: standard error. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Five key findings emerge from the survey. First, the decision to participate was primarily made by the participants. Among respondents, 81.6% of full-time and 86.1% of part-time participants reported that the initiative came mainly from them rather than from their employers.

Second, the programmes served a wide range of purposes beyond updating skills. Among full-time participants, 84.6% cited career-related motivations, such as improving labour market opportunities (49.6%), exploring a potential change of occupation (39.7%), improving prospects within their current company (36.7%), or preparing for a potential change of employer (26.5%). At the same time, 68.2% mentioned personal stabilisation or development, such as broadening their horizons (59.8%), improving their health (20.9%), taking a break from work (18.5%), or pursuing international travel (7.5%). A smaller share (8.7%) cited improved care for children or other dependents as a key motivation. The motivations of part-time participants were broadly similar to those of full-time participants, with 87.2% citing a desire to improve career prospects. However, notable differences

emerge in the specifics: a larger share (54.1%) aimed to improve prospects within their current company, while fewer considered changing occupation (31.3%). Although similar proportions reported a desire to broaden their horizons (59.7%), significantly fewer cited health-related reasons (15.2%), the need for a break from work (6.3%), or international travel (1.4%) as motivations. These differences suggest that full-time educational leave was more frequently used as a means of career redirection or broader personal transition.

Third, the majority of respondents – 57.8% of full-time and 74.1% of part-time participants – obtained a formal qualification, such as a master craftsperson certificate, a diploma exam, or a secondary school completion certificate. Fewer participants received only a certificate of attendance or another non-formal credential. Gender differences were apparent in the subject areas: women more often engaged in programmes related to social work, education, business, and healthcare, while men tended toward technical and vocational training, business studies, or completing general school qualifications.

Fourth, many participants were already in the process of leaving their employer, and a considerable share had anticipated this in advance. In most cases, workers planned the separation and proactively requested educational leave. Less frequently, leave served to ease an employer-initiated termination. Only 48.4% of full-time participants expected to return to their previous employer after their leave. Among those who did not, 56.3% had already agreed with their employer at the outset that the employment relationship would end. In 75.9% of these cases, the initiative to terminate the contract came from the employee. By contrast, a significantly larger share of part-time participants (71.7%) expected to remain with their employer, and prior agreements to end the employment relationship were far less common (15.7%). Even in those cases, the initiative typically came from the employee (88.9%). Overall, the survey highlights that educational leave often marks a turning point for career reorientation and is largely shaped by individual agency – both in initiating the leave and in determining its purpose and post-leave trajectory.

Finally, subjective assessments of outcomes were generally more positive than the effects observed in administrative data. Around three-quarters of respondents perceived an improvement in their labour market opportunities (full-time: 74.7%, part-time: 78.6%). Many saw better prospects within their current workplace (48.6% and 57.8%, respectively), and only a minority saw no change in their employment situation (22.6% and 28.1%). Full-time participants in particular experienced personal or health-related benefits (59.1% vs. 23.1%) and were more likely to report having broadened their horizons (81.2% vs. 79.5%). Supporting the interpretation that full-time leave is frequently used for career reorientation, 44.7% of full-time respondents reported having changed employers and 41.0% reported a change in occupation – compared to 30.2% and 29.9%, respectively, among part-time participants.

6 Conclusion

In this paper, we evaluated educational leave, a policy tool to promote lifelong learning among employees and enhance labour-market flexibility in Austria. By offering time off and financial support, it addresses common barriers to further training. A distinctive feature of the programme is its emphasis on self-directed learning, without requiring employer engagement. The programme aims to support upskilling, improve employability, and facilitate career transitions. From a macroeconomic perspective, it should improve labour-force integration and help meet the demand for skilled workers. In contrast to these goals, our empirical findings indicate that educational leave, in both its full- and part-time forms, does not fully realise this potential. While participants report positive experiences, our estimates show that the programme only partially achieves its core goal of improving labour-market outcomes through further education.

In particular, we find no evidence that the programme increases the probability of employment. In fact, full-time participation reduces employment in the short-term and slightly in the long-term. This likely reflects that many take leave at the end of a job and need time for reorientation. Over time, the gap narrows, but even twelve years after entry, employment remains about two percentage points lower than among comparable non-participants. From the fifth year after programme entry, participants in full-time educational leave have higher monthly earnings, but, due to lower employment, this does not translate into higher cumulative earnings.

These findings hold across gender and age groups. Only three groups – low earners, those with unstable employment histories, and individuals working marginally during leave – do not experience long-term employment losses. Crucially, even participants who return to their original employer experience small negative effects – suggesting that a prolonged, employee-initiated absence may loosen ties to the workplace, in contrast to the stable connections maintained by the control group.

Part-time leave performs better: From the third year after programme entry, it yields larger monthly earnings gains and does not affect employment probability, thus leading to considerable cumulative earnings gains. Notably, participation in either option reduces the likelihood of returning to dependent employment and increases the probability of transitioning into self-employment. This suggests that some participants use the time and newly acquired skills for reorientation – either actively pursuing entrepreneurial paths or opting for self-employment when reintegration proves difficult.

While our matching approach relies on rich administrative data, we cannot entirely rule out selection bias from unobserved heterogeneity. Participants may differ from controls in ways not fully observable – such as motivation or career intentions. In particular, we may underestimate positive effects if participants were already more likely to face job loss. However, the consistency of results across subgroups and counterfactuals, institutional design features and statistically insignificant pseudo-effects on lagged outcomes suggest that any such bias is limited.

Survey evidence contextualises our findings: Educational leave is largely shaped by individual agency – most participants take the initiative themselves and use the programme for a variety of purposes, including career reorientation, health recovery and personal development, which go beyond upskilling. Many take leave at transition points, often anticipating job separation, which helps to explain the short-term dip in employment, particularly among full-time participants. The instrument can smooth risky transitions, but doing so effectively requires stronger support and closer alignment with labour-market needs.

Two key reasons likely explain why employment does not increase. First, weak targeting: participants are typically already highly employable – young, well-educated, and in stable jobs – leaving little room for improvement. In some cases, taking leave may even disrupt otherwise secure career paths, as labour market transitions are inherently risky and time away can weaken ties to employers. Conversely, those most in need and likely to benefit the most – such as individuals in precarious employment, less education-oriented workers, and older employees – are underrepresented. Second, many training activities have limited labour-market relevance. Broad eligibility, relatively low requirements for training intensity and content, and limited oversight weaken the programme's educational component. As a result, while the training may be personally enriching, it often lacks the depth or alignment with labour-market demand needed to generate measurable improvements in employability.

Several policy lessons follow. Our results echo international evidence that voluntary training programmes tend to attract individuals already motivated to learn. To reach under-served groups, pursue targeted outreach with tailored offers and comprehensive – possibly mandatory – educational counselling. Low-income participants may need more generous financial support: the current minimum of €15 per day (around €450 per month) is insufficient to cover living costs, especially when course fees must be paid out of pocket. Specific efforts should encourage older workers to participate, promoting longer employment. Another key lesson is strengthening the programme's educational component. This can be done via higher standards for course content and intensity, certified training options, guidance and counselling, and proactively offering curated, future-oriented training. Expanding the better-performing part-time model would make educational leave more flexible, less risky, and easier to integrate into working life.

While our study offers valuable insights, some limitations remain. First, we focus on employment probability and earnings, but do not examine outcomes such as transitions from temporary to permanent contracts, occupational mobility, job satisfaction, health, or overall well-being. Second, we do not analyse employer-level outcomes. Third, our analysis captures only direct effects on participants and does not assess potential spillovers, such as knowledge diffusion among colleagues or broader macro-economic impacts.

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7 Appendix

Table A.1: Programme entries by personal characteristics

	Full-time leave		Part-time leave	
	2021 %	Δ 2010–21 PP	2021 %	Δ 2013–21 PP
Women	73.0	24.0	59.2	6.9
Age under 30	34.9	-8.0	57.1	-2.7
Age 30 to under 35	30.2	11.4	18.5	0.9
Age 35 to under 40	19.5	4.8	9.6	0.8
Age over 40	15.3	-8.1	14.8	1.0
Max. compulsory schooling	17.2	-1.0	18.0	1.4
Apprenticeship	23.9	-8.4	22.4	0.7
Intermediate vocational education	8.1	1.5	8.0	-0.3
Higher academic or vocational school	27.1	2.6	34.1	-2.1
Academic education	23.6	5.3	17.5	0.3
Natives	87.2	-6.5	90.0	-4.4

Source: AMS, ASSD, own calculations. Percentage share of the respective population groups in the entries 2021 and change in the share in percentage points (PP) compared to 2010. All entries into educational leave (from active employment, parental leave and other employment status), including combinations with part-time educational leave.

Table A.2: Entries into full-time leave by personal characteristics

	From active employment		After parental leave	
	2021 %	Δ 2010–21 PP	2021 %	Δ 2010–21 PP
Women	55.6	8.6	99.0	7.2
Age under 30	42.8	-1.1	23.2	4.2
Age 30 to under 35	21.1	3.0	43.7	8.9
Age 35 to under 40	15.0	1.0	26.3	-5.9
Age over 40	21.1	-2.9	6.9	-7.3
Max. compulsory schooling	18.0	-0.4	16.1	3.0
Apprenticeship	24.4	-8.7	23.6	6.3
Intermediate vocational education	6.3	-0.4	10.8	5.3
Higher academic or vocational school	26.7	2.7	27.6	-8.8
Academic education	24.6	6.9	21.9	-5.8
Natives	85.1	-8.6	90.7	-4.2

Source: AMS, ASSD, own calculations. Entries into educational leave, including combinations with part-time educational leave. Percentage share of the respective population groups in the entries 2021 and change in the share in percentage points (PP) compared to 2010.

Table A.3: Participation rates (%) in full-time leave by population group

	From active employment		After parental leave	
	2021	Δ 2010–21	2021	Δ 2010–21
Total	0.09	0.00	12.29	11.62
Women	0.10	0.02		
Men	0.07	-0.01		
Age under 30	0.21	0.03	11.82	11.36
Age 30 to under 35	0.15	0.02	14.02	13.33
Age 35 to under 40	0.11	0.01	11.51	10.71
Age over 40	0.03	-0.01	8.74	7.84
Natives	0.09	0.00	13.85	13.13
Foreigners	0.07	0.02	5.89	5.60
Employees	0.10	0.01		
Workers	0.06	-0.01		
Industry				
Manufacturing	0.06	-0.04	13.17	12.76
Construction	0.09	0.00	13.73	13.03
Wholesale and retail trade	0.06	0.01	10.71	10.28
Info, comm., insurance, etc.	0.09	0.02	16.59	15.91
Prof., scientific, techn. services	0.19	0.01	16.46	15.40
Public services	0.12	0.01	12.78	11.75
Other service activities	0.07	0.01	9.30	8.89
Other/unknown	0.08	-0.02	10.56	10.22
Last gross monthly earnings				
≤1,500 €	0.10	0.02	3.74	3.31
1,500–2,000 €	0.10	0.00	6.81	5.82
2,000–2,500 €	0.10	-0.01	9.96	8.68
2,500–3,000 €	0.10	0.01	13.75	12.51
3,000–3,500 €	0.09	0.00	15.60	14.12
3,500–4,000 €	0.08	0.00	15.43	14.49
>4,000 €	0.06	0.02	16.33	15.85

Source: AMS, ASSD, own calculations. Percentage share of the respective population groups in the entries 2021 and change in the share in percentage points (PP) compared to 2010. *Manufacturing*: manufacturing, agriculture, mining, energy and water supply. *Info, comm., insurance, etc.*: Information, communication, insurance, real estate. *Public services*: public administration, defence, social security, education and teaching, health and social services. *Other service activities*: art, entertainment and recreation, tourism, transport, other economic services, other services.

Table A.4: Participation rates (%) in part-time leave by population group

	2021	Δ 2013–21
Total	0.03	0.01
Women	0.04	0.02
Men	0.02	0.01
Age under 30	0.09	0.04
Age 30 to under 35	0.04	0.02
Age 35 to under 40	0.02	0.01
Age over 40	0.01	0.00
Natives	0.03	0.01
Foreigners	0.02	0.01
Employees	0.04	0.02
Workers	0.01	0.00
Industry		
Manufacturing	0.03	0.01
Construction	0.01	0.01
Wholesale and retail trade	0.02	0.01
Info, communication, insurance, real estate	0.04	0.01
Professional, scientific, technical activities	0.08	0.03
Public services	0.04	0.02
Other service activities	0.02	0.01
Other/unknown	0.03	0.01
Last gross monthly earnings		
≤1,500 €	0.02	0.01
1,500–2,000 €	0.05	0.02
2,000–2,500 €	0.05	0.03
2,500–3,000 €	0.04	0.02
3,000–3,500 €	0.03	0.02
3,500–4,000 €	0.02	0.01
>4,000 €	0.01	0.00

Source: AMS, ASSD, own calculations. Percentage share of the respective population groups in the entries 2021 and change in the share in percentage points (PP) compared to 2010. *Manufacturing*: manufacturing, agriculture, mining, energy and water supply. *Public services*: public administration, defence, social security, education and teaching, health and social services. *Other service activities*: art, entertainment and recreation, tourism, transport, other economic services, other services.

Table A.5: Number of treated (after matching) by subgroup

Sample	N
Full-time leave	89,053
Population group	
Women	45,967
Men	43,085
Age under 25	20,064
Age 25 to under 35	46,154
Age 35 and over	32,696
Apprenticeship	21,775
Low earners	22,744
Middle earners	57,259
High earners	8,974
Stable employment	72,664
Unstable employment	16,388
Stayers	27,682
Leavers	36,488
Mode of participation	
Leave in one go	76,419
Participation in pieces	12,431
Whole year ($\geq$361 days) or longer	34,593
Whole year, not longer	34,161
Less than 1 year	54,458
Never marginal employment	43,908
At least 1 day marginal employment	26,568
Over 50% marginal employment	19,630
Part-time leave	17,294
Women	9,430
Men	7,854

Number of treated persons for the estimation of 1-, 2- and 3-year employment effects.

Table A.6: Effects of full-time leave on subsequent employment share by mode of participation

	6 years		9 years		12 years	
	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %
Total	-4.3***(0.2)	-4.9	-3.3***(0.2)	-3.8	-1.9***(0.4)	-2.1
Division into pieces						
Leave in one go	-4.4***(0.2)	-4.9	-3.4***(0.2)	-3.8	-2.0***(0.5)	-2.3
Participation in pieces	-3.6***(0.4)	-4.1	-2.1***(0.5)	-2.3	-2.2** (1.1)	-2.4
Length of participation						
Whole year or longer	-6.2***(0.3)	-7.1	-4.8***(0.4)	-5.5	-3.6***(0.8)	-4.0
Whole year, not longer	-6.4***(0.3)	-7.3	-4.7***(0.4)	-5.4	-3.8***(0.8)	-4.2
Less than 1 year	-3.1***(0.2)	-3.5	-2.4***(0.3)	-2.7	-1.3** (0.5)	-1.4
Marginal employment						
Never	-6.1***(0.2)	-6.8	-5.2***(0.3)	-5.8	-3.5***(0.7)	-3.8
At least 1 day	-2.5***(0.3)	-2.9	-1.5***(0.4)	-1.7	0.0 (0.7)	0.0
Over 50% of leave	-1.6***(0.3)	-1.8	-0.9** (0.4)	-1.0	0.0 (0.7)	0.0

Share employed after 6, 9 and 12 years. Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. Differentiation by marginal employment only among participants with leave in one go. *** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table A.7: Sensitivity of effects of full-time leave on subsequent employment share to sample variation

	6 years		12 years	
	Abs. (SE) PP	Rel. %	Abs. (SE) PP	Rel. %
Total	-4.3***(0.2)	-4.9	-1.9***(0.4)	-2.1
With programme combinations	-4.3***(0.2)	-4.8	-1.9***(0.4)	-2.1
With people on marginal incomes	-4.2***(0.2)	-4.7	-1.8***(0.4)	-2.0
Direct transition from employment	-4.1***(0.2)	-4.6	-2.1***(0.4)	-2.3
$\geq$ 6 months of previous employment	-4.6***(0.2)	-5.1	-2.4***(0.4)	-2.6
First job with employer	-5.1***(0.2)	-5.7	-3.1***(0.5)	-3.4
Job from unemployment	-2.8***(0.3)	-3.2	-1.0* (0.9)	-1.2
Age 25–45 years	-4.0***(0.2)	-4.5	-2.1***(0.5)	-2.3
Age 20–50 years	-4.3***(0.2)	-4.9	-1.5***(0.4)	-1.7
Age 20–55 years	-3.9***(0.2)	-4.5	-0.7* (0.5)	-0.8
Age 25–55 years	-3.7***(0.2)	-4.2	-0.7* (0.5)	-0.8

Share employed after 6 and 12 years. Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. *With programme combinations*: includes persons who switch between educational leave and part-time educational leave. *With people on marginal incomes*: standard employment, but no income above the low-income threshold immediately before (hypothetical) programme entry. *Direct transition from employment*: maximum three-day gap between active employment and programme entry. *** significant at the 1% level, ** at the 5% level, * at the 10% level.

Table A.8: Sensitivity of effects of part-time leave on subsequent employment share to sample variation

	6 years			9 years		
	Abs. PP	(SE)	Rel. %	Abs. PP	(SE)	Rel. %
Total	+0.8**	(0.3)	0.9	+0.2	(0.5)	0.2
With programme combinations	+0.8**	(0.3)	0.9	+0.7*	(0.5)	0.7
With people on low incomes	+0.6*	(0.3)	0.7	+0.7*	(0.5)	0.8
$\geq$ 6 months of previous employment	+0.6*	(0.4)	0.6	+0.4	(0.5)	0.4
First job with employer	+1.2**	(0.4)	1.3	+0.1	(0.6)	0.1
Employment from unemployment	+1.3*	(0.7)	1.4	-0.4	(1.1)	-0.5
Age 25–45 years	+1.4***	(0.4)	1.6	+0.9*	(0.6)	1.0
Age 20–50 years	+0.4*	(0.3)	0.4	+0.6*	(0.5)	0.6
Age 20–55 years	+0.9**	(0.3)	1.0	+0.4	(0.5)	0.5
Age 25–55 years	+1.4***	(0.4)	1.6	+1.1*	(0.6)	1.3

Share employed after 6 and 9 years. Abs.: absolute effect (difference between treated and controls) in percentage points (PP). Rel.: relative effect in %. SE: standard errors. *With programme combinations*: includes persons who switch between educational leave and part-time educational leave. *With people on low incomes*: standard employment, but no income above the low-income threshold immediately before (hypothetical) programme entry. *Employment from unemployment*: maximum three-day gap between unemployment and programme entry. *** significant at the 1% level, ** at the 5% level, * at the 10% level.

Table A.9: Summary statistics (before matching)

	Means			t-test
Sample	Treated	Controls	Diff.	$p > \|t\|$
Personal characteristics				
Female	0.516	0.463	0.053	0.000 ***
Age (in years)	30.361	33.916	-3.555	0.000 ***
1 child[1]	0.052	0.087	-0.035	0.000 ***
≥2 children	0.062	0.111	-0.049	0.000 ***
Foreign nationality	0.093	0.156	-0.063	0.000 ***
Apprenticeship	0.245	0.219	0.026	0.000 ***
Employee ('*Angestellte/r*')	0.731	0.636	0.095	0.000 ***
First time with employer	0.760	0.746	0.014	0.000 ***
Job from unemployment	0.231	0.288	-0.057	0.000 ***
Manufacturing[2]	0.141	0.193	-0.052	0.000 ***
Construction	0.069	0.068	0.001	0.129
Trade	0.111	0.165	-0.054	0.000 ***
Communications, insurance, real estate	0.091	0.090	0.001	0.263
Professional, scientific, technical services	0.120	0.061	0.059	0.000 ***
Public services	0.283	0.211	0.072	0.000 ***
Previous job duration 1/2–1 year	0.127	0.121	0.006	0.000 ***
Previous job duration 1–2 years	0.208	0.164	0.044	0.000 ***
Previous job duration 2–3 years	0.169	0.117	0.052	0.000 ***
Previous job duration 3–5 years	0.221	0.164	0.057	0.000 ***
Previous job duration 5–8 years	0.135	0.146	-0.011	0.000 ***
Previous job duration 8–12 years	0.054	0.102	-0.048	0.000 ***
Previous job duration 12–20 years	0.019	0.074	-0.055	0.000 ***
Previous job duration >20 years	0.001	0.012	-0.011	0.000 ***
Last wage[3] 1,500–2,000 €	0.193	0.184	0.009	0.000 ***
Last wage 2,000–2,500 €	0.222	0.204	0.018	0.000 ***
Last wage 2,500–3,000 €	0.151	0.149	0.002	0.342
Last wage 3,000–3,500 €	0.085	0.091	-0.006	0.000 ***
Last wage 3,500–4,000 €	0.046	0.057	-0.011	0.000 ***
Last wage >4,000 €	0.055	0.101	-0.046	0.000 ***
Active measure in last 4 years	0.126	0.119	0.007	0.000 ***
Employed 1 year ago	0.941	0.924	0.017	0.000 ***
Employed 2 years ago	0.862	0.872	-0.010	0.000 ***
Employed 3 years ago	0.789	0.832	-0.043	0.000 ***
Employed 4 years ago	0.720	0.795	-0.075	0.000 ***
Employed 5 years ago	0.648	0.755	-0.107	0.000 ***
Employed 6 years ago	0.571	0.714	-0.143	0.000 ***

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	Means			t-test
Sample	Treated	Controls	Diff.	$p > \|t\|$
Employed 7 years ago	0.502	0.674	-0.172	0.000 ***
Employed 8 years ago	0.443	0.636	-0.193	0.000 ***
Employed 9 years ago	0.389	0.598	-0.209	0.000 ***
Employed 10 years ago	0.341	0.562	-0.221	0.000 ***
Unemployed 1 year ago	0.024	0.029	-0.005	0.000 ***
Unemployed 2 years ago	0.039	0.039	0.000	0.274
Unemployed 3 years ago	0.045	0.042	0.003	0.000 ***
Unemployed 4 years ago	0.044	0.043	0.001	0.066 *
Unemployed 5 years ago	0.043	0.043	0.000	0.789
Unemployed 6 years ago	0.040	0.042	-0.002	0.017 **
Unemployed 7 years ago	0.037	0.041	-0.004	0.000 ***
Unemployed 8 years ago	0.034	0.039	-0.005	0.000 ***
Unemployed 9 years ago	0.032	0.037	-0.005	0.000 ***
Unemployed 10 years ago	0.028	0.035	-0.007	0.000 ***
Days in years before (hyp.) participation				
Unsubsidised employment in year -1	351,550	347,047	4,503	0.000 ***
Unsubsidised employment in year -2	316,925	314,222	2,703	0.000 ***
Unsubsidised employment in year -3	285,592	293,428	-7,836	0.000 ***
Unsubsidised employment in year -4	254,386	276,967	-22,581	0.000 ***
Unsubsidised employment in year -5	226,750	261,066	-34,316	0.000 ***
Unsubsidised employment in years 6–10	779,152	1,084,406	-305,254	0.000 ***
Unsubsidised employment in years 11–15	395,225	768,571	-373,346	0.000 ***
Subsidised employment in year -1	0.169	0.293	-0.124	0.000 ***
Subsidised employment in year -2	1.004	1.148	-0.144	0.005 ***
Subsidised employment in year -3	1.907	1.893	0.014	0.851
Subsidised employment in year -4	2.971	2.670	0.301	0.001 ***
Subsidised employment in year -5	3.759	3.084	0.675	0.000 ***
Subsidised employment in years 6–10	15.722	13.675	2.047	0.000 ***
Subsidised employment in years 11–15	5.561	7.303	-1.742	0.000 ***
Temporarily absent[4] in year -1	3.419	2.695	0.724	0.000 ***
Temporarily absent in year -2	9.649	8.921	0.728	0.000 ***
Temporarily absent in year -3	11.820	12.036	-0.216	0.250
Temporarily absent in year -4	15.083	13.480	1.603	0.000 ***
Temporarily absent in year -5	15.869	14.893	0.976	0.000 ***
Temporarily absent in years 6–10	69.202	81.606	-12.404	0.000 ***
Temporarily absent in years 11–15	43.293	67.080	-23.787	0.000 ***
Self-empl. in year -1	0.300	0.653	-0.353	0.000 ***
Self-empl. in year -2	1.511	2.061	-0.550	0.000 ***
Self-empl. in year -3	2.698	2.985	-0.287	0.004 ***

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Sample	Means			t-test
	Treated	Controls	Diff.	$p > \|t\|$
Self-empl. in year -4	3.452	3.570	-0.118	0.282
Self-empl. in year -5	3.797	3.909	-0.112	0.334
Self-empl. in years 6–10	17.739	19.466	-1.727	0.000 ***
Self-empl. in years 11–15	9.410	13.374	-3.964	0.000 ***
Unempl.[5] in year -1	4.897	6.031	-1.134	0.000 ***
Unempl. in year -2	10.213	11.525	-1.312	0.000 ***
Unempl. in year -3	12.362	12.660	-0.298	0.033 **
Unempl. in year -4	12.446	12.920	-0.474	0.001 ***
Unempl. in year -5	12.140	12.952	-0.812	0.000 ***
Unempl. in years 6–10	49.944	59.684	-9.740	0.000 ***
Unempl. in years 11–15	29.882	46.597	-16.715	0.000 ***
In PES training in year -1	0.373	0.460	-0.087	0.000 ***
In PES training in year -2	1.989	2.196	-0.207	0.001 ***
In PES training in year -3	3.224	2.949	0.275	0.000 ***
In PES training in year -4	3.811	3.174	0.637	0.000 ***
In PES training in year -5	3.761	3.182	0.579	0.000 ***
In PES training in years 6–10	13.712	13.332	0.380	0.090 *
In PES training in years 11–15	6.592	8.275	-1.683	0.000 ***
Sickness benefit claim in last 2 years				
During employment	0.000	0.001	-0.001	0.287
During unemployment	0.019	0.026	-0.007	0.000 ***
Cumulative income				
Year -1	26,000	27,000	-1,000	0.000 ***
Year -2	23,000	24,000	-1,000	0.000 ***
Year -3	20,000	22,000	-2,000	0.000 ***
Year -4	16,000	20,000	-4,000	0.000 ***
Year-5	14,000	18,000	-4,000	0.000 ***
Year -10	6,070	11,000	-4,930	0.000 ***
Firm characteristics				
Firm age <10 years	0.139	0.121	0.018	0.000 ***
Firm age <15 years	0.153	0.135	0.018	0.000 ***
Firm age <20 years	0.132	0.113	0.019	0.000 ***
Firm age 20 years or more	0.469	0.543	-0.074	0.000 ***
Firm size 10-49 workers	0.236	0.220	0.016	0.000 ***
Firm size 50-99 workers	0.090	0.092	-0.002	0.045 **
Firm size 100-249 workers	0.128	0.135	-0.007	0.000 ***
Firm size 250 or more workers	0.338	0.386	-0.048	0.000 ***
At least 50% women	0.516	0.459	0.057	0.000 ***
Median age <35 years	0.484	0.360	0.124	0.000 ***

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Sample	Means			t-test
	Treated	Controls	Diff.	$p > \|t\|$
Median age <40 years	0.215	0.295	-0.080	0.000 ***
At least 1 employee under 25	0.896	0.899	-0.003	0.001 ***
At least 1 employee 55 and over	0.775	0.836	-0.061	0.000 ***
Median firm wage 1,500-2,500 €	0.497	0.442	0.055	0.000 ***
Median firm wage >2,500 €	0.303	0.358	-0.055	0.000 ***
25^{th} percentile of firm income	1,600	1,713	-113	0.000 ***
75^{th} percentile of firm income	2,773	2,849	-76	0.000 ***
Share of employees and civil servants	0.951	0.946	0.005	0.000 ***
At least 1 apprentice in the firm	0.419	0.475	-0.056	0.000 ***
At least 50% year-round employees	0.828	0.890	-0.062	0.000 ***
At least 1 entry into stable employment	0.615	0.574	0.041	0.000 ***
At least 1 unemployed aged 50+ hired	0.469	0.503	-0.034	0.000 ***
At least 1 unemployed aged under 50 hired	0.369	0.343	0.026	0.000 ***
At least 1 long-term unemployed hired	0.486	0.507	-0.021	0.000 ***
At least one new immigrant hired	0.567	0.594	-0.027	0.000 ***
At least 1 recall of former employee[6]	0.540	0.550	-0.010	0.000 ***
Strongly growing[7]	0.089	0.085	0.004	0.000 ***
Growing	0.395	0.409	-0.014	0.000 ***
Shrinking	0.226	0.205	0.021	0.000 ***
Strongly shrinking	0.079	0.040	0.039	0.000 ***
Entry rate of at least 100%[8]	0.123	0.102	0.021	0.000 ***
Exit rate of at least 100%[9]	0.153	0.111	0.042	0.000 ***
Fairly low labour turnover rate[10]	0.352	0.292	0.060	0.000 ***
Quite high labour turnover rate	0.214	0.155	0.059	0.000 ***
High labour turnover rate	0.134	0.102	0.032	0.000 ***
Regional characteristics				
Burgenland	0.016	0.032	-0.016	0.000 ***
Carinthia	0.045	0.058	-0.013	0.000 ***
Lower Austria	0.134	0.189	-0.055	0.000 ***
Upper Austria	0.189	0.177	0.012	0.000 ***
Salzburg	0.062	0.065	-0.003	0.000 ***
Styria	0.144	0.143	0.001	0.129
Tyrol	0.105	0.089	0.016	0.000 ***
Vorarlberg	0.028	0.044	-0.016	0.000 ***
% yearly growth of unemployment	1.486	1.164	0.322	0.000 ***
% yearly growth of long-term unemployment	9.596	9.956	-0.360	0.000 ***
% unemployed with health restrictions[11]	19.461	19.694	-0.233	0.000 ***
% unemployed with at most compulsory school	46.474	45.728	0.746	0.000 ***
% unemployed with apprenticeship	31.578	33.132	-1.554	0.000 ***

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	Means			t-test
Sample	Treated	Controls	Diff.	$p > \|t\|$
% unemployed with middle school education	5.388	5.765	-0.377	0.000 ***
% unemployed with high school education	9.722	9.312	0.410	0.000 ***
% unemployed with academic education	6.261	5.480	0.781	0.000 ***
% unemployed in PES training	18.796	18.770	0.026	0.189
Long-term unemployment rate	28.438	27.572	0.866	0.000 ***
% unemployed with hiring promise	12.875	13.805	-0.930	0.000 ***
% yearly growth of empl.	1.334	1.311	0.023	0.028 **
% yearly growth of empl., manufacturing[12]	0.748	0.702	0.046	0.000 ***
% yearly growth of empl., services 1[13]	1.601	1.574	0.027	0.027 **
% yearly growth of empl., services 2[14]	1.572	1.633	-0.061	0.000 ***
% foreigners in empl.	17.356	15.709	1.647	0.000 ***
% construction industry in empl.	6.931	7.205	-0.274	0.000 ***
% services 1 in empl.	44.793	43.809	0.984	0.000 ***
% public services in empl.	30.441	29.913	0.528	0.000 ***
% growth of foreign labour supply	6.276	6.262	0.014	0.372
% foreigners in labour supply	18.300	16.556	1.744	0.000 ***
Suburban region	0.064	0.099	-0.035	0.000 ***
Medium sized town	0.083	0.110	-0.027	0.000 ***
Intensive industrial region	0.117	0.136	-0.019	0.000 ***
Intensive touristic region	0.051	0.059	-0.008	0.000 ***
Extensive industrial region	0.091	0.105	-0.014	0.000 ***
Touristic periphery	0.034	0.042	-0.008	0.000 ***
Industrial periphery	0.057	0.071	-0.014	0.000 ***
Seasonal region	0.066	0.072	-0.006	0.000 ***

Evaluation sample, 2010–2019. Treated and all potential controls. 1: Women only. 2: Manufacturing, agriculture/mining, energy and water supply. 3: Last gross monthly wage, measured by the contribution bases for social security up to the maximum contribution base, excluding special payments. 4: Temporary absence from employment or military/civilian service. 5: Unemployment, including apprenticeship search. 6: Recall within one year after temporary unemployment. 7: Firm growth: symmetric rate of change of employment from year to year. Strongly growing: $> 0.2\%$. Growing: 0.02% to 0.2%. Shrinking: -0.2% to -0.02%. Strongly shrinking: $< -0.2\%$. 8: Inflows/average number of employees (in %). 9: Outflows/average number of employees (in %). 10: Labour turnover rate: sum of inflows and outflows/average employment (in %). Low: $< 50\%$. Fairly low: 50% to 100%. Quite high: $> 100\%$ to 200%. Very high: $> 200\%$. 11: Legal disability status or health-related placement restriction according to the PES. 12: Manufacturing, mining, energy and water supply. 13: Trade, transport, tourism, information and communication, financial and insurance services, real estate, other economic services. 14: Public administration, education and teaching.

Table A.10: Effects on pseudo-outcomes: Employment status two years before (hypothetical) programme entry

	Full-time leave		Part-time leave	
	(1) Employment	(2) Unemployment	(1) Employment	(2) Unemployment
ATT	0.070	0.110	0.384	0.209
SE	(0.165)	(0.091)	(0.369)	(0.189)

Notes: Absolute average treatment effects (ATT; difference between treated and controls) in percentage points on the share of individuals in employment and unemployment, along with standard errors. All effects are insignificant at the 10% level.