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Social Investment Returns over the Life Course

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Abstract

The principal objective of this contribution is to assess the well-being returns of social investment welfare provision in a comparative European perspective. The overarching objective of social investment welfare provision is to enhance people's opportunities and capabilities to resolve social risks typical of post-industrial societies ex-ante, by providing early childhood education and care, vocational training over the life course, capacitating active labour market policies, work-life balance policies like paid parental leave, lifelong learning, and long-term care. Common to these policies is that they transcend – but do not replace – the compensatory rationale of post-war social security that protected (predominantly male) workers and their (stable) families against industrial risks ex-post. As an individual's prospects of a healthy retirement correlate with whether they enjoyed a happy childhood, it is possible to conjecture a 'life-course multiplier' mechanism, whereby social investment returns reaped over the life course generate a positive cycle of well-being returns, in terms of employment opportunities and gender equity, competitiveness and fiscal balance, together with positive impacts on intra- and intergenerational poverty mitigation. Empirically, we proceed in the four steps, starting with a macro trend analysis of welfare state performance in statistical terms, teasing out changes in social spending in relation to gender- and age-related employment and poverty outcomes from a life-course perspective. Next, we analyse sociological panel data, using nationally representative longitudinal household survey data from 25 European countries to assess how policies jointly affect individuals' employment chances and poverty risks across different risk groups in terms of the policy complementarities of two typical social investment policies – early childhood education and care (ECEC) and active labour market policies (ALMP) – on employment probability among families with children. While higher spending efforts on the analysed policies tend to be associated with higher employment chances and lower poverty risk, the effects are reinforced when policy efforts are combined, and weakened when they work in silos. For more in-depth illustrative purposes, we provide a detailed quantitative case study, using household panel data and various policy indicators, of one country – Germany – that has experienced a gradual transformation from a male-breadwinner welfare state to a dual-earner social investment welfare model within the span of two decades. We observe how the policy shift to promoting female employment, as part of social investment reforms, has curtailed gender gaps in poverty risks. Finally, we tease out well-being returns on social investment, with respect to employment and poverty in terms of subjective well-being, using the Eurofound working and living conditions survey, with respect to childcare, active labour market policies, and active ageing and flexible retirement. We show how the availability of good quality and affordable childcare is related to higher levels of life satisfaction for young families and access to lifelong learning and flexible retirement reinforces subjective well-being satisfaction for older workers.

Keywords

Welfare state, social investment, family life course, policy complementarities, material and subjective wellbeing

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List of abbreviations

AE	Adult Education
ALMP	Active Labour Market Policies
AME	Average Marginal Effect
COVID-19	Coronavirus Disease 2019
ECEC	Early Childhood Education and Care
EQLS	European Quality of Life Survey
EMU	Economic and Monetary Union
EPSR	European Pillar of Social Rights
EU	European Union
EU-SILC	European Union Statistics on Income and Living Conditions
EUROSTAT	European Statistical Office
GCI	Global Competitiveness Indicator
GDP	Gross Domestic Product
LMP	Labour Market Policies
PPS	Purchasing Power Standards
SOCX	Social Expenditure Database
SURE	Support to Mitigate Unemployment Risks in an Emergency
NGEU	Next Generation EU
OECD	Organisation for Economic Co-operation and Development
RRF	Recovery and Resilience Facility
UB	Unemployment Benefits

List of country abbreviations

AT	Austria
BE	Belgium
BG	Bulgaria
CZ	Czechia
CY	Cyprus
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LV	Latvia
LU	Luxembourg
NL	Netherlands
MT	Malta
PT	Portugal
PL	Poland
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
US	United States

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1. Introduction

Remarkably, the aftermath of the Great Recession (2008) ushered in a formidable reappraisal of the welfare state across Europe. From a comparative perspective, the more generous and inclusive welfare states in the European Union (EU) buffered the Great Recession better, especially in terms of household poverty mitigation, than the United States (US). Moreover, the active welfare states of Northwestern Europe, including the Nordic countries, Austria, Germany and the Netherlands, with their proactive child and family servicing, active labour market policy, and assertive training policy, swiftly bounced back to the high levels of employment reached before the onslaught of the Great Recession (Hemerijck and Matsaganis, 2024). In contrast, the recipe of austerity applied to Southern Europe hampered the restoration of growth and employment, nor did it bring public debt under control. Restrictive Economic and Monetary Union (EMU) budget rules and conservative monetary policy, alongside domestic welfare policy vulnerabilities, including a preference of passive social insurance and pension policy, slowed down the transition of Mediterranean countries towards a more sustainable and active welfare state.

If the welfare state was the 'unsung hero' of the Great Recession, the pandemic made for a truly salutary homecoming. The 'freezing of the economy' by lockdown restrictions and social distancing, important to buy time to develop effective vaccines, was bridged by a wide range of furlough schemes and progressive fiscal stimuli. Thanks to universal healthcare, EU governments were quickly able to mobilize medical support to save lives. The next priority was to save livelihoods, by strengthening social safety nets, achieved by increased benefit generosity and broadening eligibility to non-standard workers whilst extending duration. Overall, the coronavirus disease (COVID-19) pandemic cemented the conviction that generous welfare provision in times of need is indispensable to bounce back from major shocks (Hemerijck and Matsaganis, 2024).

Backing domestic COVID-19 crisis management, a supportive, but impromptu, framework was developed at the level of the European Union. Budgetary rules were frozen to allow for fiscal stimuli supported by accommodating monetary policy. The SURE mechanism (Support to Mitigate Unemployment Risks in an Emergency) was established to shore up short-term work schemes across member states. By the summer of 2020, EU leaders agreed on the Next Generation EU (NGEU) fund endowed with €800 billion to support the recovery. NGEU's key innovation, the Recovery and Resilience Facility (RRF), raised the stake of the transition to robust welfare states as a core pillar of the EU's resilience strategy, combining reforms to public investments in health care, education, early childhood development and lifelong learning. Already in 2017, in a significant departure from the austerity reflex that prevailed during the euro area crisis, the EU adopted the European Pillar of Social Rights (EPSR), setting out 20 key principles, defined in terms of an even-keeled balance between protective and activating policies for well-functioning labour markets and robust welfare systems. The EU policy responses to COVID-19 sanctioned a swift recovery, with unemployment falling below pre-COVID levels, and employment numbers outpacing that of the US. Negative public investment trends of the recent past were reversed with debt positions coming down much faster than after the Great Recession.

The political determination and speed with which fiscal, monetary and social policy interventions were rolled out cannot be understood without the tough lessons learned from the more unfortunate policy response to the sovereign debt a decade before (Hemerijck and Huguenot-Noël, 2022). Again, it is now widely recognized that effective welfare provision protects individuals and families from major shocks whilst stabilizing the economy. Even so, well-functioning welfare states are imperative not only in hard times; welfare provision, from pensions to health, from childcare to education, and parental leave regulation, help to smooth critical life-course transitions also in more normal times. No wonder the welfare state has remained popular among large swaths of European electorates (Hemerijck, Russo and Genschel, 2023). In hindsight, the neoliberal attack on the interventionist welfare state during the 1980s and 1990s, did little to uproot popular support for the welfare state, which today is strong as ever.

European welfare states have seen continuous reforms in recent decades, as governments sought to adapt to the challenges of demographic ageing, technological innovation, and economic internationalization, alongside changing cultural and gender norms. Before the Great Recession, welfare systems were believed to be confronted with inescapable trade-offs between economic efficiency and social equity and trilemmas among employment, equality and fiscal balance (Okun, 1975; Iversen and Wren, 1998). In the 1990s, Organisation for Economic Co-operation and Development (OECD, 1994), and World Bank (1994) economists thought that full employment was within reach but tragically only at a price of higher levels of inequality and relative poverty. As population ageing, including falling fertility, puts additional fiscal pressures on public spending, the policy debate narrowly focused on pension reform in terms of savings through actuarial retrenchment, pension privatisation, and labour market deregulation, to bring down old-age dependency ratios. Similarly, the debate on the knowledge economy focused on skill-biased (*jobless*) growth creating 'winners' and 'losers' needing less and more social protection respectively. In addition, rising female employment in the growing service economy was poorly understood in its policy implications. The policy priority was to retrench social spending and liberalize labour markets to enhance competitiveness and improve fiscal balance.

Admittedly, the demographics of today are very different to those of the post-war baby-boom period, when there was full employment of males, performing the role of primary breadwinners. Around the turn of the millennium, a new generation of policy thinkers and political reformers turned to analysing and assessing how social policy interacts with family demography (gender, fertility), education, skill formation, labour supply and productivity, and how these factors jointly in part determine the future tax base (Esping-Andersen et al., 2002). Progressively, the notion of social investment gained traction as a novel welfare reform compass to address structural changes in an integrated fashion (Morel et al., 2011 Hemerijck, 2013; 2017). Today, social investment is widely embraced in policy reports and documents of the EU (European Commission, 2013), the OECD (2014), and the World Bank (2016) as a compass for 'inclusive and sustainable growth', able to inspire actors from across the political spectrum. The High-Level Group report on *The Future of Social Protection and the Welfare State in the EU* (2023) for the European Commission is surely the most assertive official endorsement of social investment to date.

The overarching objective of social investment welfare provision is to enhance people's opportunities and capabilities to resolve social risks typical of post-industrial societies *ex ante*. Early childhood education and care, vocational training over the life-course, capacitating active labour market policies, work-life balance policies such as paid parental leave, lifelong learning, and long-term care; what all these policies have in common is that they transcend – but do not replace – the compensatory rationale of post-war social security that protected (predominantly male) workers and their (stable) families against industrial risks *ex post* (Hemerijck, 2018). In other words, the notion of social investment shifts the terms of the welfare state debate from the quandary of rising pressures on public spending, closely associated with population ageing, toward a more comprehensive understanding of how welfare provision interacts with demography, including family formation, education, skills, labour supply and productivity. Social investment thus understood boils down to the hypothetical conjecture that a well-organized welfare state is an asset, and not a liability to the economy, as it contributes to productive capacity of the economy and its stability in the face of adverse economic conditions. The economic logic of social investment explicitly focuses on increasing the number (*quantity*) and productivity (*quality*) of current and future employees – or the *'carrying capacity'* of popular income protection and social security. It is therefore important not to fall prey to an unwarranted opposition between passive, *ex post* compensatory social policies and active, *ex ante* capacitating social policies. The more advanced social investment welfare states can sustain the highest levels of social protection in the EU. Inclusive social protection and capacitating social investment fundamentally go together in generating positive externalities.

Historically, the Scandinavian countries took the lead in the social investment turn, as early as the late 1970s (Esping-Andersen, 1990). In the 1990s, others, including the Netherlands and the United Kingdom, followed suit, although never in a linear fashion. Many continental Bismarckian and Mediterranean welfare states with strong male-breadwinner and female-homemaker cultural legacies long resisted the expansion of social services in the areas of childcare and long-term care, essential to accommodate female employment. However, labour market problems combined with important cultural changes inspired German and, to a lesser extent, Spanish policymakers to jump on the social investment bandwagon in the early 2000s. Over time, we can observe a relatively coherent mission shift throughout Europe of increasing spending on capacity-building services in combination with social protection cost-containment, without per se undermining inclusive income protection. Yet, social investment policy reform and progress come in highly differentiated forms and political forms and fashions (Hemerijck and Matsaganis, 2024).

The principal objective of this contribution is to assess the well-being returns of social investment welfare provision in a comparative European perspective. We proceed in five steps. First, in Section 2 we outline our theoretical perspective in terms of life-course complementarities. As an individual's prospects of a healthy retirement correlate with whether they enjoyed a happy childhood, it is possible to conjecture a ‘life-course multiplier’ mechanism, whereby social investment returns reaped over the life course generate a positive cycle of well-being returns, in terms of employment opportunities and gender equity, with a positive impact on intra- and intergenerational poverty mitigation. Reasoning from a life-course perspective, Anton Hemerijck has developed a 21st-century conception of the welfare state, comprising three core functions. The first is about fostering the lifelong development of human capital ‘stock’, helping people develop the skills they need to thrive in today's knowledge economy. The second is easing the ‘flow’ of family life-course and labour market transitions. The third is about sustaining inclusive social protection ‘buffers’. ‘Stocks’ cover the education and training designed to improve people’s capacity to work, ‘flow’ policies help people balance work with family life and other commitments in their lives, while inclusive safety net ‘buffers’ are a prerequisite for those (temporarily) out of work.

Section 3 follows suit with a macro trend analysis of welfare state performance in statistical terms, teasing out the relation of changes in social spending in relation to gender- and age-related employment and poverty outcomes from a life-course perspective. Here we are interested in how social investment policy provisions align with economic development, competitiveness, economic participation, and reduced risk of poverty. The evidence suggests strikingly consistent correlations between social investment and socioeconomic well-being. We base our statistical assessment of welfare state performance on a social investment life-course multiplier logic by weighting social spending according to social needs and risks. We do this for the EU at large. Generally, in a correlational manner we find considerable consistency between inclusive buffers, gender-balanced flows, and lifelong human capital stock development, and positive employment performance together with subdued levels of relative poverty, suggesting strong elements of policy complementarity at the country level. We cover the years from 2009 until 2019, including the financial crisis, but not the COVID-19 pandemic, using several data sources from Eurostat and the OECD. Obviously, any assessment of the macro returns to social investment based on varying degrees of correlation between policy inputs, policy outputs, and measurable outcomes cannot be understood as causal. It is a rough and ready first cut for the more complex econometric analysis of social investment policy complementarities, that follows suit.

Section 4 shifts the analysis from macro-level data to sociological panel data, using nationally representative longitudinal household survey data from 25 European countries to assess how policies jointly affect individuals' employment chances and poverty risks across different risk-groups. This analysis aims at providing more fine-grained causal inferences by use of dynamic panel regression models to reduce endogeneity and self-selection issues that are common when using observational data. The section is comprised of two parts. The first part assesses joint policy effects of two typical social investment policies – early childhood education and care (ECEC) and active labour market policies (ALMP) – on employment probability among families with children. The second part focuses on the joint role of social investment and social protection policies in poverty mitigation across different risk groups. Both studies point at the complementary role of social investment and social protection policies. While higher spending efforts on the analysed policies tend to be associated with higher employment chances and lower poverty risk, the effects are reinforced when policy efforts are combined, and weakened when they work in silos. The strength of the identified policy complementarities varies for different country clusters, underlining the importance of considering country specificities.

For more in-depth illustrative purposes, Section 5 covers a more detailed quantitative case study, using household panel data and various policy indicators, of a single country – Germany – that has experienced a gradual transformation from a male-breadwinner welfare state to a dual-earner social investment welfare model withing the span of two decades. This period is perhaps just about long enough to tease out the implications for employment, poverty and, especially, gender, to see whether emerging policy complementarities evolve in the direction of social investment life-course expectations. Particularly positive is that the stronger social investment emphasis is found to reduce the poverty risk of single mothers who are most vulnerable to experiencing poverty. Furthermore, by combining strong traditional poverty alleviation measures, i.e. safety net 'buffers', with strong family support policies, the highest positive poverty returns can be achieved among women. As a result, the shift from male-breadwinner model to promoting female employment in Germany has curtailed the alarming gender gap in poverty.

Finally, Section 6 shifts the empirical focus from *material* well-being returns on social investment, with respect to employment and poverty to *subjective* well-being returns. Using "Eurofound European Quality of Life Survey, with respect to childcare, active labour market policies, and active ageing and flexible retirement, we observe how the availability of good quality and affordable childcare is related to higher levels of subjective well-being for young families. A similar positive subjective well-being result appears for older workers in relation for access to lifelong learning and flexible retirement. Unsurprisingly, subjective well-being does not positively correspond with active market policies, simply because unemployed individuals who partake in such programmes are still anxious about finding a suitable well-paying job.

Section 7 concludes with confidence that effective 'stock', 'flow' and 'buffer' policy complementarities are associated with higher employment rates, lower levels of poverty, more graduated transitions in and out of work, better conditions for young people to start a family, and more opportunities for older workers to remain in the workforce. In macroeconomic terms, the available evidence on social investment policy complementarities suggests that, as they reinforce each other's effectiveness in promoting employment and fighting poverty across the life course, to a great extent, effective education, active labour market policies and family service provision, can stimulate growth through improved productivity, higher employment and lower poverty, thereby raising the necessary budgetary revenue to support growing numbers of elderly people fairly. All in all, what matters for 21st-century provision is not the *quantity* or *ratio* of social spending, relative to gross domestic product (GDP), but its *quality*, *composition* and *efficacy*.

2. Policy complementarities and the life-course multiplier

Since welfare provision is largely financed out of income taxation and social contributions by workers and employers, key to the financial sustainability of the modern welfare state is the number and productivity of current and future employees and taxpayers. Following the economist Richard Musgrave (1989) and the sociologist John Myles (2002), we can conceptualize the carrying capacity according to a cost-benefit equation, where social investment shifts attention from the *numerator* side of welfare state costs to the *denominator* side concerning the quality and quantity of those carrying the costs:

$$\frac{\text{Number of welfare recipients}}{\text{Number of paid workers}} \times \frac{\text{Average consumption of welfare recipients}}{\text{Average productivity of paid workers}} = \frac{\text{Welfare spending}}{\text{Tax base}}$$

The work-income-family nexus is the *lynchpin* of social investment welfare provision. The greatest contribution to the carrying capacity, and indeed the key driver of the social investment orientation in the welfare state in recent decades, has been the rise in the number of women entering the labour market ever since the 1990s. Like demographic ageing, this evolution represents a major feat of societal emancipation and progress, but at the same time a success formula that must be managed in terms of accommodating welfare provision to balance out work and family care. Female scholars, including Barbara Hobson (1990), Jane Lewis (1992), Ann Orloff (1993), and Diane Sainsbury (1996), were among the first to highlight the new set of gendered challenges to the welfare state, by stressing the need for childcare, long-term care, parental leave, and targeted support for lone parents, mostly women, as part and parcel of post-industrial welfare provision.

Beyond gender, it should be recognized that the logic of social investment also rests on distinctive, often overlooked, normative underpinnings. The normative imperative of social investment is not to blindly push people onto the labour market for economic gain, but to capacitate people to reap life chances and well-being opportunities. In his seminal *The Economics of the Welfare State* (2020), the British economist Nicholas Barr emblematically distinguishes between two concepts of solidarity sustaining the modern welfare state. There is (1) poverty relief based on ‘Robin Hood’ solidarity of income redistribution from the rich to the poor; and then there is (2) ‘piggy bank’ solidarity based on social insurance contributions from earnings intended to smooth life-course consumption. The more service-oriented social investment welfare state adds a third layer of solidarity: ‘stepping stone’ or capacitating solidarity, providing ‘secure capabilities’, especially in critical life transitions, such as starting a family and/or (re-)entering the labour market. Secure capabilities, a notion coined by the political philosophers Jonathan Wolff and Avner de-Shalit (2007), invokes social care in terms of human capacitation, to improve gender balance in combining work and family responsibilities, through the provision of affordable and good quality services to improve life satisfaction.

By and large, welfare provision is strongly redistributive over the life course rather than between risks groups in the present moment, although this is also important. Fundamentally, the welfare state employs policy and administration to modify the play of market forces through at least four interventions. First, by guaranteeing individuals and families a minimum income irrespective of the market value of their work or property. Second, by mitigating economic insecurity by supporting individuals and families to address the social contingencies of sickness, old age and unemployment through collective insurances. Third, by ensuring that all citizens are offered the best standards available in social services, with respect to health, education and family services. Fourth, when the first three provisions are substantial enough, the welfare state contributes to stabilizing the macroeconomy and household incomes by absorbing economic shocks during recessions, to allow

countries to bounce back better from the crisis later. However, sustaining the carrying capacity of the welfare state will be challenging when the number of elderly rises relative to the working-age population. At a minimum, pension spending should not crowd out investments in the human capital of younger generations.

From a life-course perspective, it is not all that interesting to identify which risk group benefits from which social policy intervention (Garritzmann et al., 2022). Welfare beneficiaries, for the most part, are transitory categories: children grow up and go to school; large majorities of the unemployed will re-enter the labour market at some point and most of those who fall ill recover with the help of medical support. Some clients may need more targeted support, whereas others, for example, the higher educated who live longer, will consume more long-term care. The key policy question is not about 'who gets what?', but how to ensure that social and employment policies operate in conjunction to achieve inclusive synergy effects in economic and social well-being?

It is true that the social investment perspective shifts the focus from *ex post* income security and compensation to *ex ante* risk prevention and capacitation. However, it is important to underscore that social investment welfare provision cannot be viewed as a substitute for the more traditional compensatory welfare state functions, but is instead better understood as progressive expansions of social protection to help address post-industrial social risks beyond regular social risks of unemployment and poverty. To wit, the experience of the Great Recession profoundly underscored the key importance of household income protection at the micro level and demand stabilization at the macro level through furlough arrangements. In a complementary fashion, the more social investment-oriented welfare states bounced back better and faster in terms of employment recovery (Hemerijck and Matsaganis, 2024). Or, returning to the normative debate, social investment involves a realignment and reallocation between 'Robin Hood' and 'piggy bank' solidarity to 'stepping stone' solidarity, by reinforcing Robin Hood and piggy bank solidarity in a gender-balanced fashion. In other words, we consider effective and inclusive buffers as part and parcel of the social investment welfare state, even as a precondition for its success. As we convey below, empirically, social protection and social capacitation outlays strongly correlate, suggesting that welfare states that commit to inclusive and generous social protection, are also the ones making the most of policies to help beneficiaries to return to school and work as quickly as possible.

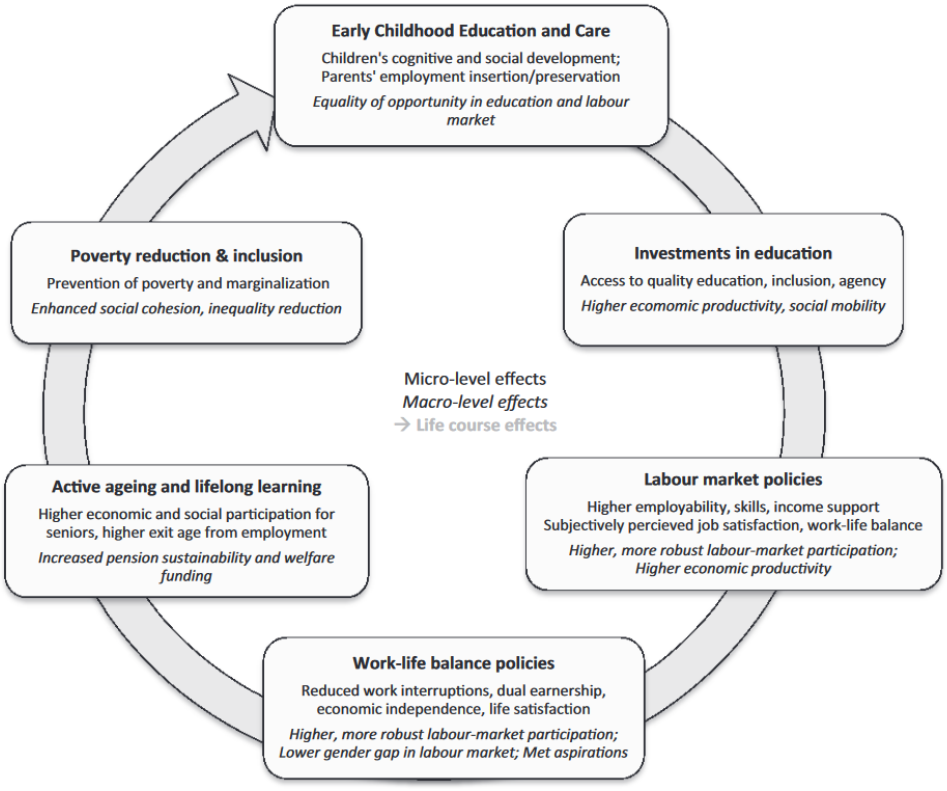
Reasoning from a life-course perspective, Anton Hemerijck (2013) has developed a 21st-century conception of the welfare state, comprising three core functions: (1) raising and maintaining the 'stock' of human capital and capabilities throughout the life course (*lifelong human capital stocks*); (2) easing the 'flow' of gendered labour market and life-course transitions (*work-life balanced flows*); and (3) granting inclusive safety nets (*inclusive buffers*). Human capital 'stock' policies helping people develop the skills they need to thrive in today's knowledge economy. 'Flow' policies help people balance work with family life across the life course. Inclusive safety net 'buffers' provide income support for those (temporarily) out of work. In day-to-day policy practice there is considerable overlap between the different welfare functions of stocks, flows and buffers, to the extent that they ideally reinforce each other. Policy provisions that at face value privilege one of the three functions typically also back up the other functions in an interconnected fashion. Seen from the perspective of 'policy complementarities', poverty alleviation, principally a 'buffering' policy, can help smooth labour market 'flow', because it mitigates pressure on background financial stability to accept any job on offer, with the potential benefit of improved job-matching thus curtailing human capital depletion. By the same token, childcare facilitates stimulate labour market 'flows' for working parents, especially mothers, but good quality childcare also enhances future human capital 'stock' and capabilities by way of investing in the social and cognitive abilities of toddlers. Gender-equal societies, supported by adequate 'flow' provisions, where women are more economically independent, may also help young families to realize fertility aspirations (Esping-Andersen and Billari, 2015).

The macro evidence that we will present below suggests that lifelong human capital 'stock' development and policies designed to ease 'flow' into labour market participation in a gender-balanced way contribute to ensuring high levels of employment, helping to sustain the 'carrying capacity' of welfare state 'buffers' at mitigated levels of (child) poverty.

As any individual's prospects of a healthy retirement are strongly correlated with whether they enjoyed a happy childhood, it is possible to conjecture a 'life-course multiplier' mechanism, whereby social investment returns reaped over the life course generate a positive cycle of well-being returns, in terms of employment opportunities and gender equity, with a positive impact on intra- and intergenerational poverty mitigation (see Figure 1).

At the micro-level of individuals and households, the life-course multiplier suggests how social investments – from early childhood on – improve material household well-being (employment and income) and help mitigate social risks later in life through opportunities to gain new skills, helping ease (gendered) labour market transitions. At the macro level, the multiplier suggests a variety of societal benefits will accrue, ranging from improved productivity, higher employment, and reduced gender gaps to lower poverty, longer careers, and later retirement, all crucial to economic growth and the fiscal sustainability of the welfare state in today's knowledge economies, which need to generate the wealth to support growing numbers of elderly people. Let's focus on individual life chances across six important life-course stages.

Figure 2.1. The social investment life-course multiplier at micro and macro level



Source: Hemerijck, Plavgo, and Ronchi (2023)

Early family life

In the initial stage in the family life course, early childhood education and care play a prominent role. This is for two reasons. First, from the perspective of a parent, enrolling children in affordable and good quality childcare facilities improves parental employment opportunities, allowing parents, especially mothers, to sustain employment and reduce job interruptions, reinforcing more stable gender-balanced career progression (Bonoli, 2013; Hemerijck et al., 2016). By helping parents to maintain consistent employment, childcare provision indirectly stabilises family income, thus also mitigating poverty risks. Second, reasoning from the perspective of the child, the literature underscores that early social and cognitive stimuli provide a strong start and, in the long run, foster higher educational attainment (Heckman, 2006; OECD, 2023) and economic participation (Nelson and Stephens, 2012), facilitating a smoother transition and integration of young people into the labour markets in the future.

Education and training

The subsequent stage in the life-course multiplier model underscores the overriding significance of the quality of the education system. From this perspective, an effective education system improves the cognitive abilities of young individuals, which in turn strengthen the capabilities of young adults to transition smoothly from school to the workforce and to access better jobs (OECD, 2023). The macro corollaries would be higher employment rates, lower poverty and less precarious labour market transitions, whilst fostering the growth of economic sectors that capitalise on a large, skilled human capital pool (see Nelsen and Stephens, 2012; Plavgo, 2023).

Adult labour markets

The next stage in the life-course multiplier concerns the working-age population and the effectiveness of active labour market policies (ALMPs). The expectations are that ALMPs foster continuous skill development through vocational training and promote economic participation by employing activation-focused measures such as direct job creation and public employment services. Job search assistance can improve labour market re-entry of the unemployed (Card et al., 2018). Vocational training, in theory, promotes long-term economic participation (Kluve, 2010; Card et al., 2018; Bakker and van Vliet, 2021) and may reduce poverty (Taylor-Gooby et al., 2015). All in all. ALMPs enhance labour market dynamism as they encourage swift transitions back to work. Unsurprisingly, the success of training programmes seems to be contingent upon their design and implementation and the existence of generous social protection programmes (Bonoli, 2020; Garritzmann, 2022). In theory, ALMPs, with their focus on lifelong learning, make the labour market more responsive to technological changes, by consistently training and re-training individuals after their initial transition to the workforce. From a macroeconomic vantage point, such adaptability is beneficial for labour markets undergoing rapid economic shifts in occupational structure, leading to increased labour market engagement and subsequently, productivity improvements.

Family formation

For obvious reasons starting a family disrupts labour market engagement. Family income assistance programmes aim primarily at sustaining household income after childbirth. On the regulatory side, parental leave provisions, the duration of paid maternity, parental and home care support are important. The quality and affordability of childcare and generosity of parental leave can make it attractive for young couples to have children. Effective combinations of childcare and parental leave influence parental employment engagement, to sustain employment and reduce job interruptions, and thus to enhance gender balance in career progression (Hemerijck et al., 2016). By serving parents to maintain employment, childcare and parental leave indirectly stabilise family income, thereby mitigating poverty risks (see Bonoli, 2013; Finch and Bradshaw, 2021).

Active ageing and flexible retirement

In the concluding stages of the life-course multiplier logic, the focus shifts to long-term care with an overarching aim to promote active ageing, incentivise later retirement, and encourage productive late employment. Three specific policies can be identified to potentially harness these objectives: access to late training is prioritised as it promotes sustained employment and enhances productivity by facilitating the continual updating of skills, ensuring individuals remain competitive in the evolving labour market (Nelson and Stephens, 2012); flexible retirement options are pivotal in prolonging employment, offering a range of retirement pathways that allow individuals to tailor their transition out of the workforce according to personal and financial circumstances (Schmid, 2015); and long-term care provisions are crucial, especially in supporting adult female employment. By offering reliable care for individuals requiring assistance due to disability or old age, following the social investment life-course multiplier logic, long-term care reduces the necessity for family members, predominantly women, to exit the labour force prematurely for caregiving responsibilities. Altogether, these policies are designed to incentivise later retirement and productive late employment, embodying the active ageing ethos central to the life-course multiplier function.

The fundamental conjecture from this cursory survey of the life-course specific policy interventions is that social investment welfare provision potentially contributes to achieving a 'double dividend' of greater and more gender-balanced employment and productivity gains, able to sustain fair and inclusive social protection. Good quality and affordable childcare reinforces labour market attachment for young couples with children, while active labour market policies, lifelong learning, and public health policies all enable adult and older workers to pursue longer careers. Moreover, social investment policy provisions potentially bolster poverty mitigation, precisely by way of improving labour market inclusion and dynamism. Obviously, investments in early family life yield greater long-term well-being returns than spending on active ageing. However, both are associated with tangible positive externalities in terms of more employment, less poverty, longer life expectancy, more income equality, and fiscal stability (Kenworthy, 2019; Lindert, 2021).

To be sure, the social investment logic also strongly applies to health care, which is not covered in this report. Poor health generally appears towards the end of a person's life. In OECD countries people with no high school diploma can on average expect to live about six years less than those with a tertiary education (OECD 2019: 66). The share of people who rate their own health as good is 20 percentage points higher in the highest income quintile than the lowest income quintile (OECD, 2021). The objective of social investment policies is to keep modern welfare states sustainable by investing in strong human capital. This requires not only a large and well-educated workforce, but also one that is *healthy*, including mental health (Goijaerts et al., 2023). Health should therefore also be understood as part and parcel of stock-flow-buffer functions, not just to promote active ageing, but to prevent people from a disadvantaged background becoming inactive due to the early onset of health vulnerabilities. Stock policies should include programmes to stimulate maternal and children's health. Flow policies should treat mental and physical health events as one of the life-course transitions after which people should receive care and support to make their way back to the labour market. Finally, buffer policies should be viewed not only as social protection narrowly understood, but also as an investment in public health.

In the following section, we will put empirical meat on the bones of social investment life-course multiplier logic, beginning with looking into some of the macro correlations suggested in passing above.

After examining the macro relationships of life-course multiplier effects on material well-being across EU member states in the following section, we then proceed with more micro level analysis based on employment and income data for specific risk groups, through which we hope to establish stronger causal claims about the policy complementarities of stock, flow and buffer policies. This is followed by a more focused quantitative analysis, that includes microdata, for Germany, a country that has experienced a veritable social investment switch since the turn of the millennium.

3. The macroeconomic correlates of social investment[1]

How can we relate social investment policy effort to welfare performance statistical terms at the macro level, teasing out the connections between changes in social spending and gender- and age-related employment and poverty outcomes from a life-course perspective? Rather than trying to establish correlations at each stage of the life-course multiplier, this section relies on a somewhat simplified conception of social investment, for two reasons. First, it introduces a unified 'social investment performance' indicator that encapsulates the complementarities of various life-course interventions. Second, it lays a foundation for the report's further empirical analysis by presenting clear and consistent macro correlations, that are distinct from the more detailed micro-level evidence in the subsequent two sections, which focus more on those life-course stages.

Our overall interest in this section is to explore how social investment policy provisions align with economic development, competitiveness, employment participation and relative poverty rates. The evidence suggests strikingly consistent correlations between social investment and socioeconomic well-being. We cover the years from 2009 until 2019, including the financial crisis, but not the COVID-19 pandemic, using several data sources from Eurostat and the OECD. Obviously, any assessment of the macro returns to social investment based on varying degrees of correlation between policy inputs, policy outputs and measurable outcomes cannot be understood as causal. What follows is a rough and ready first cut for the more complex econometric analysis of social investment policy complementarities.

Social investment policy complementarities

Let us begin by identifying key social investment policies: education, vocational training and active labour market policies, early education and childcare, and inclusive buffers. These policies collectively provide a comprehensive framework to measure social investment which focuses on the development of human capital, facilitating labour market participation after childbirth, and expanding social rights to parts of the workforce engaged in new forms of work. We use two components to gauge the quality of social investment.

The first concerns government investment in each of these policies. This is measured by taking government expenditure weighted against social needs. Here, we use the number of potential beneficiaries in each respective area instead of actual beneficiaries. This approach prevents take-up rates from skewing generosity levels. Thus, the final figures avoid showing higher investment due to a smaller baseline number, representing only a fraction of people who could benefit from these programmes. The second component concerns stocks. This is measured using educational attainment levels, participation in adult learning, and coverage rates of buffer programmes. Table A3.1 in the appendix details the different indicators developed for this analysis.

All these indicators are based on average figures over a ten-year period from 2009 to 2019. This approach minimizes the influence of outliers and aligns with the theoretical framework presented in the previous section. The rationale is that social policy investments often manifest their effects over extended periods, and the socioeconomic outcomes we observe are the result of sustained investment over time.

Building on these indicators, we develop a single variable that captures the *quality of social investment*. This is achieved by first standardizing (*z-scores*) and then summing all eight indicators together. The resulting variable indicates that countries with higher social investment attain correspondingly high values, whereas countries with lower investment register lower values. This approach not only simplifies the analysis by focusing on social investment, but also allows us to assess the joint effect of these policies. As argued in the previous section of this report, policy complementarities are critical to socioeconomic outcomes. Thus, the sum of all social policy investments is greater than its constituent parts.

1 This section is based on ongoing work by Daniel Fernandes and Anton Hemerijck.

A first look at the data reveals that investment in the four policy areas under analysis are positively correlated, as Table 3.1 indicates. This suggests that welfare states with high investment and participation in one area also tend to perform better in other areas. The positive relationship challenges the notion of a trade-off between different dimensions within social investment policy domains. While welfare states may lean towards specific social investment strategies, they appear to stem more from contextual, institutional, and political factors rather than from a rigid economic trade-off concerning resource allocation. This observation underscores the importance of using an aggregated indicator to measure social investment performance, especially considering that policy complementarities are likely to have a substantial effect on socioeconomic outcomes. To put it in other words, the sum of all social policy investments is greater than its constituting parts. Thus, for the empirical macro correlates presented in this section, we correlate total social investment with economic performance, employment and poverty to see whether the expected patterns hold.

Table 3.1. Correlation between social investment policy dimensions (average, 2009–2019)

Policy	Education	ALMPs	ECEC	Incl. Buffers
Education	1			
ALMPs	0.70	1		
ECEC	0.51	0.92	1	
Incl. Buffers	0.37	0.47	0.38	1

Abbreviations: ALMP = active labour market policies, ECEC = early childhood education and care, incl = including.

Economic development and competitiveness

Figures 3.1 and 3.2 show a positive correlation between social investment and economic development and competitiveness. Economic development is gauged using GDP per capita in purchasing power standards (PPS). Competitiveness is measured through the Global Competitiveness Indicator (GCI) developed by the World Bank.

The data shows the Nordic countries leading in social investment and ranking high in both indicators. Alongside these are Austria, Belgium, France, Germany and the Netherlands. Although the social investment strategies of the Continental welfare states differ – with a greater focus on inclusive buffers and less on lifelong learning (Chevalier, 2016) – their performance in terms of GDP and competitiveness is comparatively strong. Conversely, Southern and Eastern European countries display lower GDP figures and competitiveness levels. Ireland, focusing mainly on means-based policies and education, has high GDP per capita but a lower competitiveness ranking.

These first sets of correlations already suggest that social investment bodes well with healthy economies. While a causal link cannot be conclusively drawn from this data, it helps to dispel concerns about potential pernicious effects of such policies on the economy.

Figure 3.1. Correlation between social investment performance and economic development (average, 2009–2019)

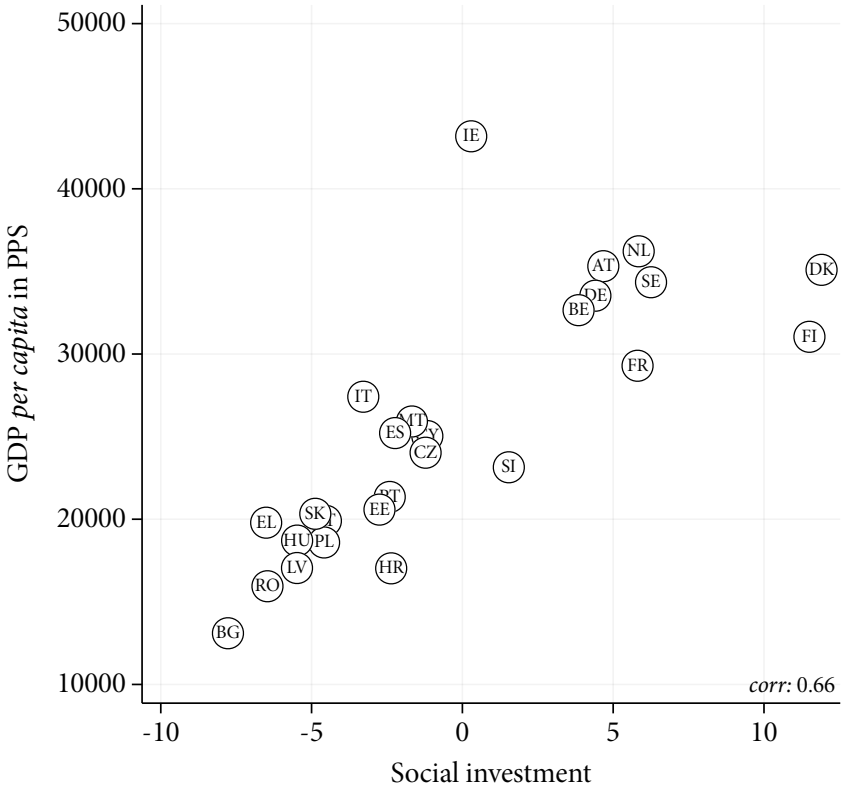
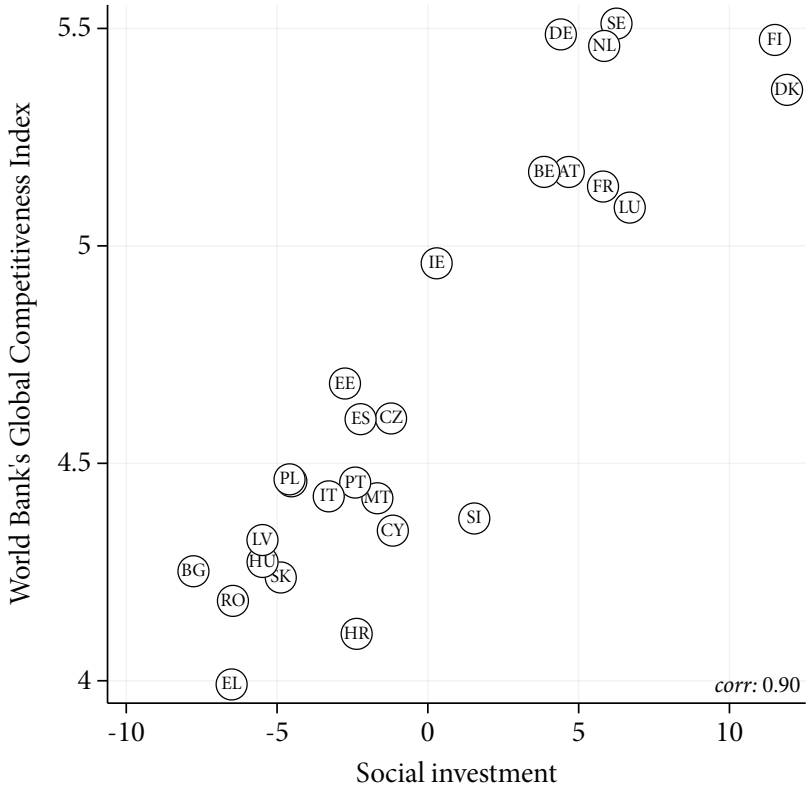


Figure 3.2. Correlation between social investment performance and competitiveness (average, 2009–2018)



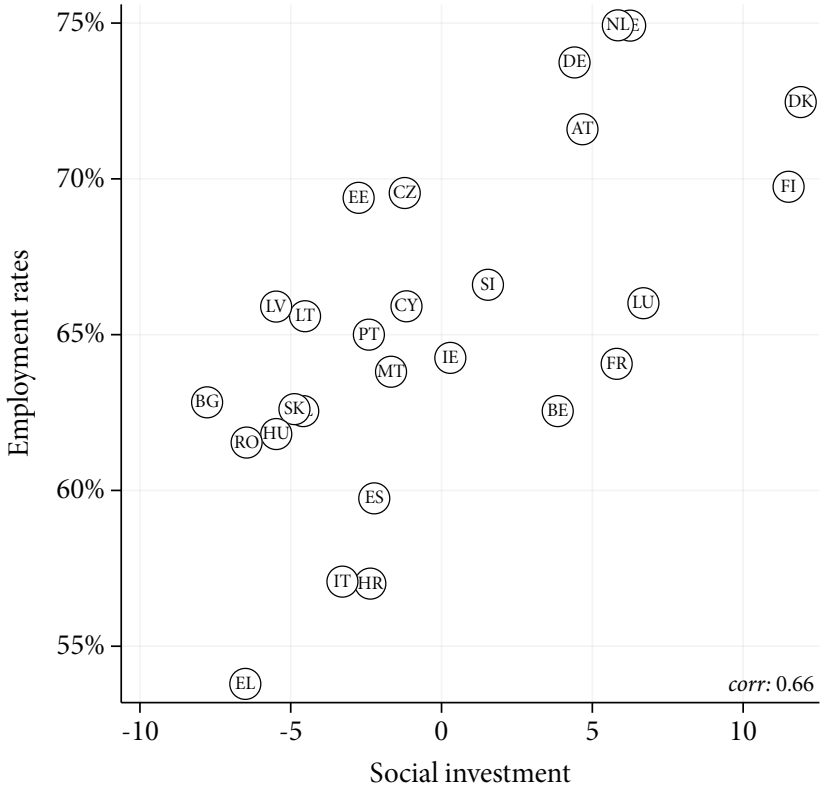
Employment participation and relative poverty rates

The nexus between social investment, economic development and competitiveness also appears to extend its influence on the labour market domain. This analysis delves into two pivotal indicators, as underscored by academic literature (see Bonoli, 2013), that are crucial for understanding the dynamics within this sphere: economic participation and poverty reduction.

In examining economic participation, our analysis centres on general employment rates, as depicted in Figure 3.3. This indicator captures the proportion of individuals within the working-age population who are actively participating in the labour market. Consistent with earlier observations, the data presents a positive correlation between social investment policies and levels of economic participation.

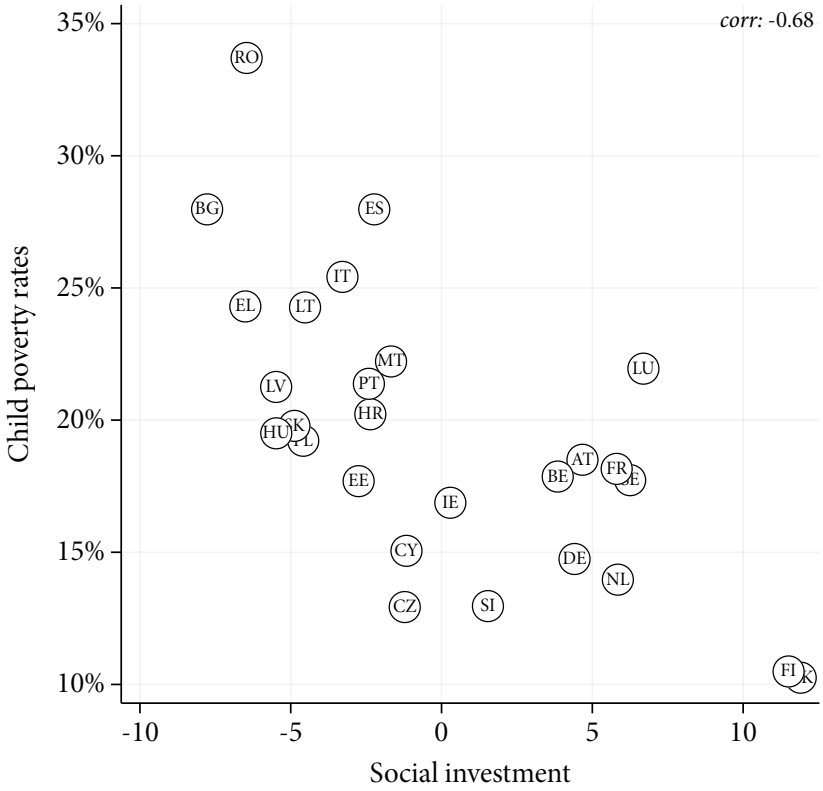
Turning our attention to relative poverty, we look at at-risk-of-poverty rates for those aged under 16 , as shown in Figure 3.4. This indicator is a cornerstone of the social investment strategy, since early socioeconomic outcomes tend to impact subsequent stages of life. Existing literature shows this for higher educational outcomes and cognitive and social development, and economic participation (Heckman, 2006; Nelson and Stephens, 2012; OECD, 2023).

Figure 3.3. Correlation between social investment performance and employment rates (average, 2009–2019)



In both these graphs, Denmark and Finland are the clear frontrunners, achieving the best outcomes both in terms of economic participation and creating conducive socioeconomic conditions for young people. These countries are closely trailed by Sweden and several continental welfare states, including Austria, Germany and the Netherlands, which have demonstrated a reformative impetus towards employment-centric policies in recent decades. Belgium and France, while achieving good outcomes in youth welfare, lag behind in employment rates. This discrepancy may be attributed to a social policy strategy that, albeit generous in buffers, lacks a comprehensive orientation towards the creation and mobilisation of human capital across all life stages. By contrast, Southern and Eastern European countries register inferior performance in social spending and the ensuing labour marking indicators, aligning with our argument.

Figure 3.4. Correlation between social investment performance and child poverty rates (average, 2009–2019)

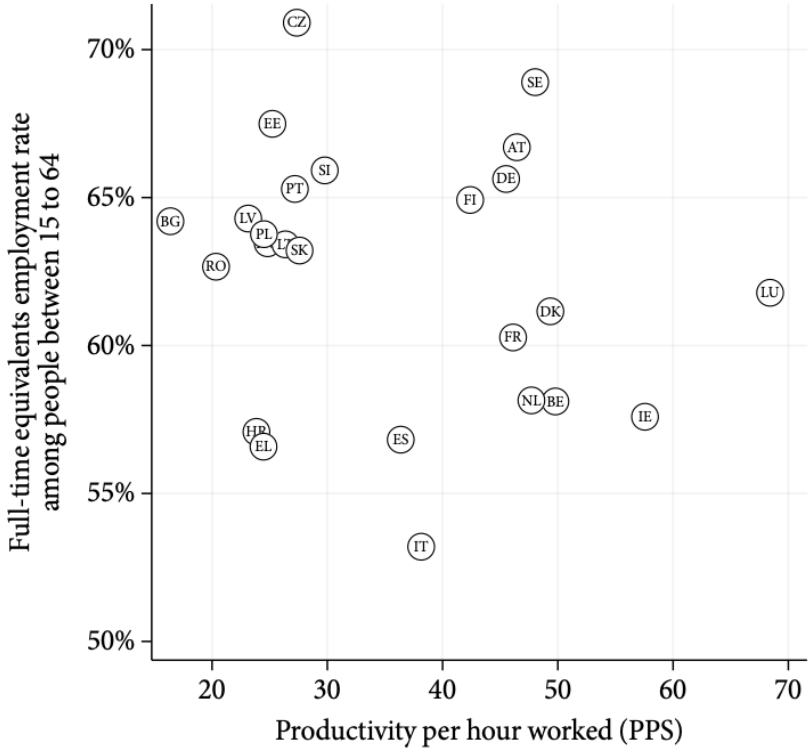


Takeaways

Social investment strongly correlates with positive socioeconomic outcomes, as evidenced by the analysis. Countries that excel in economic development, competitiveness, employment and reduced relative poverty rates, are those that consistently invest in social investment. This observation suggests a close link between social investment and economic well-being.

Reflecting on the macro-level evidence, the traditional apprehensions regarding a trade-off between government economic activity and economic performance seem unfounded. The current analysis indicates that government interventions through social investment policies do not conflict with economic performance; rather, they complement each other. These findings align closely with the concept of the 'carrying capacity' of welfare states, introduced in the previous section of the report. Figure 3.5 illustrates the positioning of each country regarding the number and productivity of workers. Austria, Finland, Germany and Sweden (some of the leaders of social investment) achieve high workforce mobilisation and productivity levels. While they have not yet reached this position, other countries have unique opportunities to achieve similar outcomes. In Belgium, Denmark, France and the Netherlands, the primary focus is not on enhancing productivity but rather on increasing labour market participation. Conversely, for most Eastern European countries and Portugal, the opposite prescription applies. They already have good economic participation rates and can focus on boosting productivity. Greece, Hungary, Italy and Spain stand out as the countries requiring improvements in both productivity and employment rates to enhance their carrying capacity. Greece and Italy especially, combine low female employment, meagre minimum income protection, high levels of social spending on pensions, and troubled public financing. Social investments are a sine quo non in these troubled contexts, offering the means to enhance carrying capacity through workforce capacitation, the dynamization of labour markets, and strengthening of the economy.

Figure 3.5. Mapping full-time equivalent employment rates and productivity per hour (average, 2009=2019)



These findings set the stage for a more detailed empirical exploration later in this report, which will delve into the micro-level evidence and underlying mechanisms of these correlations. The remaining question is whether a country's wealth enables social investment or if social investment drives economic well-being. The evidence and theoretical discussions lean towards social investment being a catalyst for a healthy economy and labour market. The following sections will further investigate this relationship, focusing on more detailed micro patterns.

4. Micro-level analysis of joint policy effects on individuals' employment and poverty

Understanding possible joint effects of social policies on people's life chances – including the possibilities of policy complementarity or tensions in promoting employment and fighting poverty – requires digging deeper than the broad macro-level patterns presented. It is important to consider how and whether social policies play out at the level of individual Europeans. This requires micro-level analysis, ideally using quality data tracking over time to record the employment and income positions of individuals as functions of exposure to various kinds and measures of social policy interventions.

This section reports such analysis, where the focus is explicitly on possible joint effects of social investment and social protection policy effort for individual-level employment and poverty across different risk groups of Europeans, across European member states and over time. The focus is on whether such joint effects entail complementarity or conflict in shaping individual-level employment (Figure 4.1) or poverty (Figure 4.2).

Joint social-investment policy effects on individuals' employment chances[2]

Following the life-course multiplier logic, social policies affect people's employment chances in interconnected ways. A given policy intervention can have weaker or stronger employment effects on the target population, depending on the presence or absence of other policy interventions. In this section, we explore how national spending efforts for both active labour market policies (ALMP) and early childhood education and care (ECEC) jointly affect employment chances among individuals with children in Europe.

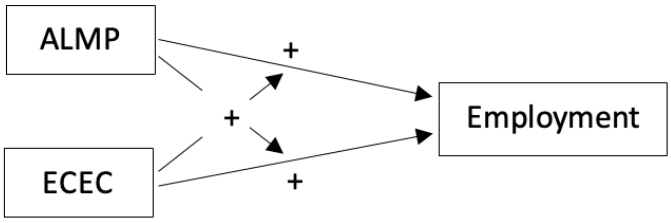
Both ALMP and ECEC policy interventions have been extensively studied in terms of their effectiveness in facilitating employment (and child development in the case of ECEC). Both policy interventions serve crucial social investment functions to promote employment: ALMP by facilitating (re)insertion and activation in the labour market (Bonoli and Liechti, 2018; Card, Domnisoru, and Taylor, 2022), and ECEC by supporting work-care reconciliation through education and care assistance (Boekmann et al., 2015; Hegewisch and Gornick, 2011).

Active labour market policies and early childhood education and care: complementary policy effects or substitution?

How these policies interact with each other and condition one another's employment implications remains unclear. On the one hand, ALMP and ECEC are expected to have a reinforcing, complementary effect on one another. Enhanced access to the labour market can be better sustained if having a job can be combined with care duties (Boeckmann et al., 2015; Cukrowska-Torzewska, 2017; Hemerijck et al., 2016; Korpi et al., 2013). On the other hand, increased investments in ALMP and ECEC may lead to a kind of conflict between the policies, particularly a substitution effect, whereby both policies promote employment but face diminishing marginal returns to further investments in the other policy (Bakker and Van Vliet, 2021; Nieuwenhuis, 2022). We also cannot exclude the possibility of non-interaction: the policy provisions analysed may not alter each other's effectiveness, or they could be used by different target populations.

The life-course multiplier logic presented in section 2 suggests that at the micro level, the dynamics of complementarity are more plausible. While ALMP provision is directly aimed at increasing or preserving people's employment chances, the extent to which parents with children can benefit from such programmes and commit to employment is expected to largely depend on whether work-care reconciliation provisions are in place. Likewise, while not all parents who benefit from ECEC services need ALMP provision to be employed, access to both types of services can be mutually reinforcing in employment promotion especially among those who are unemployed or inactive. This expectation of a complementarity or reinforcement effect between ALMP and ECEC is visualised in Figure 4.1.

Figure 4.1. Theoretical expectations based on the life-course multiplier: ALMP–ECEC complementarity in employment effects among families with children



2 This subsection is based on: Plavgo, Ilze, Burgoon, Brian, di Pietro, Alessandra and Hemerijck, Anton, 'Complementarity or Substitution? The Joint Employment Effects of Active Labour Market Policy and Early Childhood Education and Care', *Working Paper*, European University Institute, under review.

Micro-level data and research design and methodology

The analyses draw on high-quality micro-level longitudinal data from Eurostat and EU Statistics on Income and Living Conditions (EU-SILC) surveys. EU-SILC longitudinal data contain information on changes over time at the individual level, observed periodically over a four-year period. All available survey data between 2003 and 2015 were merged using the 'eusilcpanel' tool developed by Borst (2018). The final sample comprises 283 surveys with individuals from 25 European countries and 5 to 13 surveys per country. Appendix Table A4.1 lists countries and surveys included in the present study. The analytical sample comprises working-age individuals between the ages of 20 and 64 with one or more children under age 18, followed for two to four consecutive years. The final sample contains 711,668 observations, or 330,711 individuals. To assess national social investment policy effects on individuals' employment chances, we combine these micro data with aggregate macro indicators on social policy spending and target population size retrieved from the OECD database, the statistical office of the European Union (Eurostat), and the World Bank Databank.

Individuals' *employment* is measured using self-defined current *economic status*, expressed as a binary variable with a value of 1 if a person is in employment (full-time, part-time, and self-employed), and 0 if not in employment (unemployed, persons fulfilling domestic tasks and care, and other inactive persons). We exclude those in education or training, retired, permanently disabled or unfit to work, and persons in compulsory community or military service, which is 7.8 per cent of the sample aged 20–64 with children. In our final sample, 79.9 per cent of all observations were in employment, 8.3 per cent were unemployed and 11.8 per cent were inactive. 23.4 per cent of all those who were unemployed or inactive switched to employment during the observed period.

National ALMP policy effort is measured using public expenditure data which comprise expenditures on public employment services, training, employment incentives, supported employment and rehabilitation, direct job creation, and start-up incentives (LMP categories 1–7). The ALMP spending as a percentage of GDP is divided by the percentage of unemployed persons aged 15–74 in each respective observation year to adjust for the target population. Such adjustment has been applied in other empirical comparative studies analysing social investment policy efforts (Bakker and Van Vliet, 2021; Nieuwenhuis, 2022; Ronchi, 2018; Hemerijck et al. 2016). The adjusted ALMP spending measure in the analysed sample ranges from 0.006 in Greece to 0.52 in Denmark.

National ECEC policy effort is measured using data from the OECD Family Database on public expenditure on early childhood education and care services, expressed as a percentage of GDP, adjusted for the population share of children aged 0 to 5. The ECEC expenditures include all public spending towards formal day-care services, generally aimed at children under 3 (day-care centres and family day care) and pre-primary education services, usually for children aged from 3 to 5 inclusive (kindergartens and day-care centres). The adjusted ECEC spending measure ranges from 0.002 in Greece to 0.27 in Sweden.

All our statistical estimates control for individual characteristics and national contextual factors that may influence respondents' employment chances beyond ALMP and ECEC availability.

Individual-level covariates include respondent's employment status in the previous year; age; household size; number of young children aged 0–1; gender; self-reported general health; marital status; educational attainment; and poverty status in the previous year, equal to 1 if an individual was from a household with total equivalized disposable income below 60 per cent of the national median.

Macro-level covariates include unemployment as a share of total population aged between 15 and 74 years; old-age dependency ratio expressed as the ratio of older dependents to the working-age population; and total public social expenditure as a share of GDP, subtracting spending on ALMP, ECEC, pensions and survivors' pensions since our analyses focus on working-age adults. These controls capture key national macroeconomic conditions, demographic conditions, and social protection generosity, known to be relevant for labour market demand and supply.

Research strategy: The joint ALMP-ECEC effects on individual employment probabilities are assessed by fitting dynamic panel random intercept multilevel logit regression models combining individual- and macro-level data. All models include a lagged dependent variable – an individual's employment status in previous year – to control away non-observed characteristics of respondents' employment-related conditions to address likely autocorrelation, omitted variable bias and possible selection-into-treatment. The full model is presented in the following equation:

$$E_{icy} = \beta_0 + \beta_1 E_{icy-1} + \beta_2 X'_{icy} + \beta_3 ALMP_{cy} + \beta_4 ECEC_{cy} + \beta_5 ALMP_{cy} \cdot ECEC_{cy} + \beta_6 M'_{cy} + \upsilon_{0cy} + e_{icy}$$

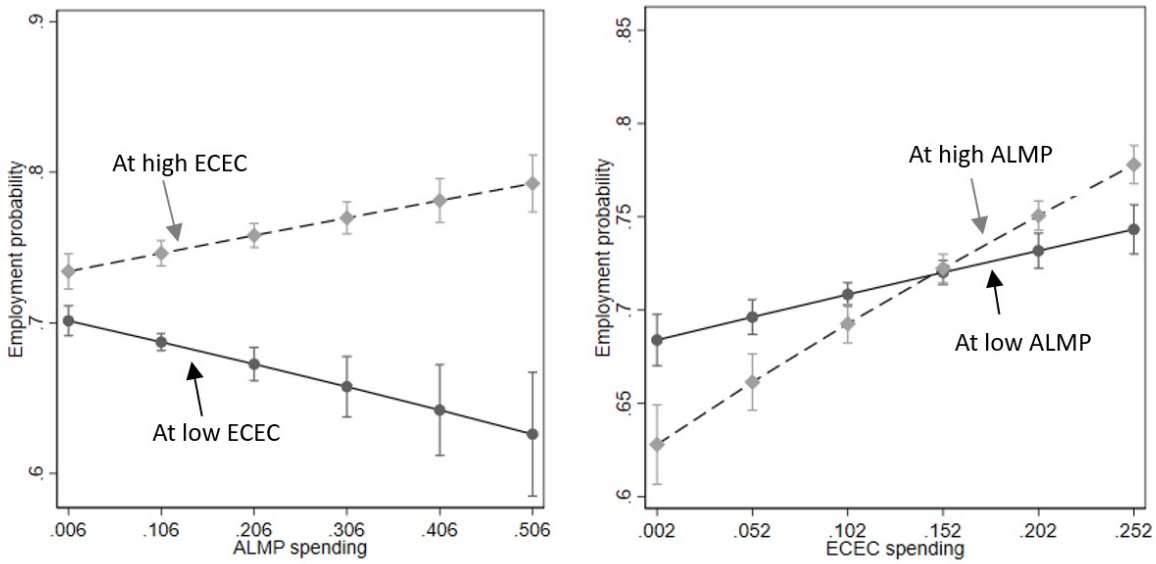
where E_{icy} is the employment status of individual i in country year cy; β_0 is the intercept; β_1 is the effect of employment status in the previous year; $\mathrm{X}'_{\mathrm{icy}}$ is a vector of individual-level control variables; parameters β_3 and β_4 are estimated effects of ALMP and ECEC spending on the probability to be employed; β_5 is the interaction effect between ALMP and ECEC (the focus of the present analysis); M'_{cy} is a vector of macro-level control variables; υ_{0cy} is the effect of country-year on employment outcome; and e_{icy} is an individual-level residual. Individuals are nested in country-years and households. The random effects are allowed to co-vary with random intercepts. We also consider a more restricted model with country fixed effects, and a range of supplemental estimates to explore the robustness of the results. The resulting empirical results are stable across a wide range of sensitivity and robustness analyses (e.g. model estimates using country fixed effects, lagged ALMP-ECEC measures, alternative embedding structures, etc.).

Results: clear complementarities

Our analyses show that in European societies, national ALMP and ECEC spending efforts promote individuals' employment chances in reinforcing ways. This is captured by marginal effect estimates plotted in Figure 4.2. Both ECEC and ALMP efforts are associated with a higher individual employment likelihood, but the marginal effect of higher spending effort in one policy increases at higher spending levels in the other policy. This pattern is stable across all subsamples and alternative model specifications (see Table A4.2 in the Appendix for full estimates).

The complementary policy effects are somewhat stronger among female respondents, and especially strong for how ECEC efforts moderate (strengthen) the generally positive ALMP effect on employment probability. To visualise this, Figure 4.2 graphically plots predicted probabilities to be employed among female respondents at different levels of national ALMP and ECEC spending levels (Figure A4.1 in the Appendix plots estimates for the total sample). In the left panel, we plot probabilities across the full sample distribution in ALMP spending in settings with low and high levels of ECEC spending efforts. In the right panel, we plot the same across the full distribution in ECEC spending in settings with low and high levels of ALMP spending efforts.

Figure 4.2. Predicted probability of employment among female respondents with children for ALMP effects by ECEC spending level (left-hand panel) and for ECEC effects by ALMP spending level (right-hand panel)



The plotted estimates in the left panel show a clear pattern of the complementary role of ECEC on the association between ALMP spending and employment. In contexts with high ECEC spending (the 90th percentile), employment probability among women with children is high and increases with higher ALMP spending levels, from 74 to 79 per cent across the ALMP spending distribution (from 81 to 87 per cent for the total workforce including male respondents, see Figure A4.1). By contrast, when ECEC spending effort is low (10th percentile), employment probability is overall lower and decreases with higher ALMP spending levels. Such patterns suggest that at low ECEC levels, ALMP might promote unemployment or inactivity for families with children, especially among mothers, whereas ALMP-enhanced employment take-up is likely to be concentrated among adults without care responsibilities.

The right side panel graphically shows a similar complementarity pattern in how ALMP enhances ECEC's employment promotion among female respondents. We see that ECEC is significantly more employment-promoting at higher levels of ALMP effort. When ALMP effort is high (the steeper dashed line), the positive association between ECEC spending and employment is significantly stronger than when ALMP effort is low (the flatter line). In settings with high ALMP spending, the predicted employment probability among women with children increases by 15 percentage points across the ECEC spending distribution (from around 63 to 78 per cent). In settings with low ALMP spending, the estimated increase is only around six percentage points. The complementarity dynamics are weaker but still significant for the total workforce, pointing at somewhat weaker ALMP-ECEC policy interdependencies for male respondents with children (see Appendix, Figure A4.1).

We can conclude from these empirical analyses that, while national ALMP efforts are generally positively associated with increased employment chances, the likelihood of being or choosing to be employed tends to significantly increase by public ECEC efforts that allow combining employment activity with family duties. Likewise, parents of children in contexts with higher national ECEC efforts are more likely to find and keep a job, but this probability is substantively higher at more elevated levels of national ALMP efforts to up-skill and ease transition into employment. This reinforcing policy effect is evident for all working-age individuals with children, particularly among women.

The strength of the identified reinforcement effect is bound to vary by the quality of ALMP and ECEC services, employment protection legislation, and other factors not studied here that directly affect parents' likelihood to engage in paid employment. Auxiliary analyses assessing different country clusters separately reveal cross-country variation in the strength of ALMP-ECEC interaction effect on employment probability. While the direction of the estimated interaction effect across different country clusters remains positive, and is therefore in line with the overall conclusions, the identified variation points that the extent to which the two social investment policies reinforce each other's effectiveness is shaped by policy design and other country specificities.

Does social investment undermine poverty-fighting through social protection?3

Policy complementarities (or possible conflicts) are also relevant to understanding how social policy investments shape individual-level poverty risk. Particularly important are possible broader complementarities or conflicts between social investment provisions (e.g. ECEC and ALMP) on the one hand, and social protection provisions (e.g. income, health, unemployment, and other transfers and services) on the other, in shaping the chances that an individual is in – or falls into – poverty.

Some observers worry that social investment can have 'Matthew effects' where social investments hurt the most vulnerable citizens, traditionally most dependent upon welfare state provisions (Bonoli et al., 2017; Bonoli and Liechti, 2018; Cantillon and Van Lancker, 2013). Such effects might arise not only by potentially crowding-out spending on social-protection (buffer-focused) policies, but also through possible conflicts – actual incompatibilities – between social investment and social protection: deepening of social investment policies like ALMP and ECEC might tend to diminish the poverty-fighting efficacy of social protection buffers like unemployment and family insurance transfers.

This possibility is conceptually plausible and to be taken seriously, following several (mutually inclusive) logics. A first, most basic, logic is that social investment provisions most focused on labour market activation or on combining work with parenthood might provide very limited direct poverty-fighting in the short and medium term, such that more full-throated social protection measures must work harder to make a poverty-fighting difference. A second logic is that social investment might entail a crowding-out of investment in social protection buffers, either by choking scarce budgets or by overwhelming social policy administration, in ways that diminish the capacity of social protection buffers to fight poverty. A third logic is that social investment might alter the incentive structures of social benefit recipients to pursue work and take labour market risks that do not pay off enough at the margin for the earnings of such recipients and ultimately increasing the likelihood of poverty among them.

These feared policy interactions count as possible policy incompatibilities (negative interactions) between social protection and social investment provisions that add up to Matthew effects. These effects can be either an issue for any given citizen – that is, for the population at large or the working-age population ostensibly served by unemployment insurance, housing subsidies, minimum-income assistance, family support, disability, and health provisions. Or, perhaps, the conditional Matthew effects might show up and be a problem only, or mainly, for key vulnerable groups in the society including the unemployed, the less educated or single mothers.

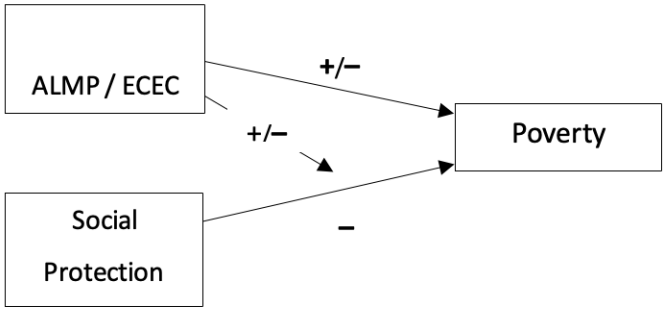
Having summarized the conceptual reasons to expect such Matthew effects, there are good reasons to be doubtful of their severity and to expect instead patterns of complementarity between the poverty-fighting effects of social investment and of social protection. First, as social investment interventions focused on labour market activation and work-family reconciliation that serve as spurs to flows and stocks, both ECEC and ALMP may well also have short-term positive effects on earned income and hence operate as barriers to poverty. Second, even if the aforementioned

3 This sub-section is based on: Burgoon, Brian, Hemerijck, Anton, di Pietro, Alessandra and Plavgo, Ilze, 'Does Social Investment Undermine the Poverty-fighting Effectiveness of Social Protection?'. *Working Paper,* European University Institute. Under review.

incompatibilities occur empirically, the interactions between social investment and social protection in shaping poverty risk may well be accompanied by important forces of complementarity. To name but one example, vulnerable unemployed citizens able to make use of ALMP and ECEC social investment provisions can be expected at the margin to more quickly leverage social protection assistance to seek and reach income gains in labour markets.

Considering these offsetting possibilities and early state of empirical inquiry in social policy studies, our expectations with respect to possible complementarity or incompatibility are open, as summarized in Figure 4.3.

Figure 4.3. Theoretical expectations based on the life-course multiplier: social investment and social protection joint effects on poverty



Micro-level data and research design

To explore possible complementarities or incompatibilities in how social policies shape poverty risk, we carried out micro-level empirical analyses on data and use an estimation approach like our micro-level exploration of complementarity in employment promotion (see previous section). We rely again on the EU-SILC true-panel data tracking the socioeconomic status of millions of individuals in EU member states between 2003 and 2015. This analysis focused on whether an individual respondent has real household income below the EU-defined 'at risk of poverty' line (60 per cent or less of national median real household post-tax, post-transfer income).

Our analysis estimates this poverty status as a function of the possible interaction – complementarity or incompatibility – of measures of social investment and of social protection. The social investment measures on which we focus are ALMP and ECEC spending, again normalized by the unemployed and parents of young children, respectively – both measures focused on assisting particularly the working-age population. The social protection buffer measures on which we focus are those policy programmes geared towards maintenance of social minima in that same working-age population through a range of benefits and transfers – all unemployment, disability, minimum-income, family, housing and health assistance provisions other than ALMP, ECEC and pensions and survivors' benefits. To estimate possible complementarities or incompatibilities, we model how our macro-level social-investment policy measures (ECEC and ALMP effort) might render more negative the relationship between social protection measures and poverty (suggesting complementarity), or instead yield less negative or more positive relationships between social protection and an individual's chance of being in poverty.

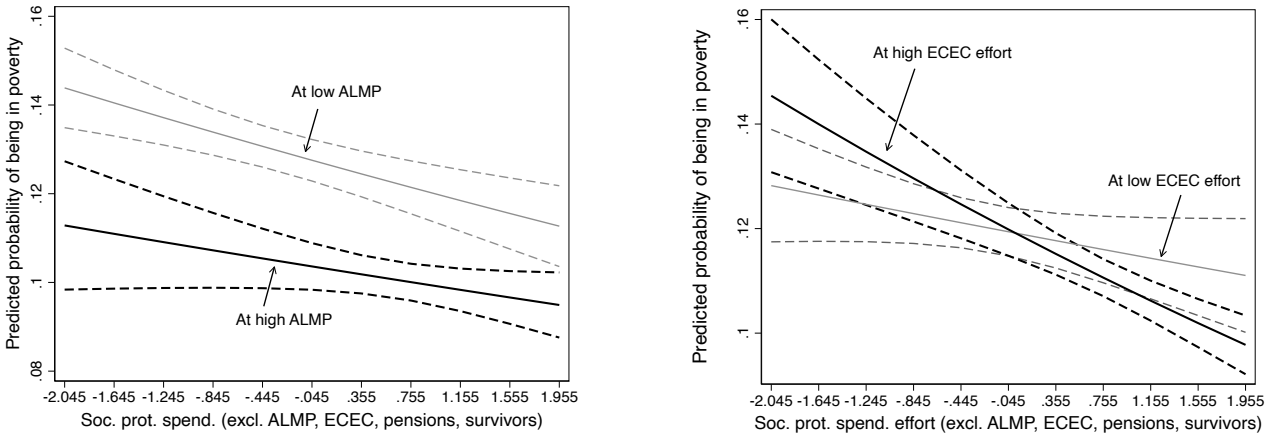
In particular, we estimate an individual's household poverty status as a function of social protection provision, of a given aspect of social investment provision (ALMP or ECEC effort), and of their interaction. Such a set-up shows how combinations of social investment and social protection are associated with individual poverty chances – for a given policy measure and for combinations of measures (e.g. both generous social investment and generous social protection). That set-up allows us to see whether macro-level social investment moderates – negatively (complementarity) or positively (incompatibility) – the extent to which our macro-level social protection measures are associated with lower chance of poverty of individuals living in those macro-level settings. The models try to isolate such joint and moderating effects of macro social policy conditions on the micro-poverty status – and address possible endogeneity, omitted variable bias, and other threats to causal inference – by controlling for a range of conditions at individual and country-year levels. At the individual level, we also control for age, education, marital status, household composition, children and gender. The key country-level correlates are unemployment rates and dependency ratios. In our baseline models, we also control for the lagged poverty status of a given respondent – using the true-panel character of the data to control for many unmeasured reasons why a household might be in poverty and exposed to a particular social policy. (The results reported below, however, are very similar in models excluding such lagged poverty status).

With these variables, our baseline estimates fit a series of multilevel random-intercept logistic regression models (individuals nested in country-years). (See the model summary in the econometric equation from section 4.1, but here the components and interaction term involve either ECEC or ALMP on the one hand, and social protection on the other.) Our analyses focus on six different population samples: (1) full working-age sample (i.e. those aged 18–64); (2) low-educated respondents (i.e. those with no more than secondary-school education); (3) bad-health respondents (i.e. those reporting their own health to be bad or very bad); (4) unemployed respondents (i.e. those not in work and either actively seeking work or not); (5) parents (i.e. those with one or more child aged under 16 in the household); and (6) single mothers (i.e. those women who are unmarried and who have one or more child aged under 16).

Results: more complementarity than incompatibility

The portrait to emerge from our analyses is one betraying few signs of incompatibility and significant signs of complementarity in the poverty-fighting performance of social investment and social protection efforts in Europe. Such a portrait is captured by snapshots in Figures 4.4 (fuller results in Tables A4.3-A4.5). The snapshots focus on the low-educated subsample – a key economically vulnerable group of concern among those fearing Matthew effects. The two panels show how the full sample variation in social protection spending effort predicts lower probability of a given respondent being in poverty in settings with low (bottom 10th percentile) and with high levels (top 90th percentile) of social investment with respect to ALMP (left-hand panel) and ECEC (right-hand panel) (see column 2 in Table A4.4 for the joint effects of ALMP and social protection; and column 2 in Table A4.5 for the joint effects of ECEC and social protection).

Figure 4.4. Conditional effects of social protection on probability of poverty among low-educated, in high vs. low ALMP settings (left-hand panel) and ECEC settings (right-hand panel)



While the two panels capture quite different joint and interactive effects for fighting poverty, they both show complementarity in their joint effects. We can see in the various schedules that settings characterised by generous social protection *combined with* generous ALMP or ECEC are associated with the lowest probability of an individual falling into household poverty compared to individuals in settings marked by social protection without generous social investment. In fact, our analysis also shows that social investment measures of ALMP and ECEC show signs of poverty-fighting in their negative associations with individual-level poverty for all of the sample populations. In many subsamples social investment measures are revealed to be more consistently poverty-fighting in the current data and period of analysis than the most encompassing social protection buffer measure (results not shown but visible in Table A4.3).

More important are the two broad results for how ALMP and ECEC might moderate the poverty-fighting efficacy of social protection buffers. There we see contrasting results for the ways ALMP, as opposed to ECEC, moderate the poverty-fighting effects of social protection. We find that ALMP tends to have no statistical or substantive moderating effect on how social protection measures affect, or are associated with, poverty risk – that is, betraying neither complementarity nor incompatibility in how ALMP-based social investment moderates poverty-fighting effects of social protection. This can be seen in the left-hand panel of Figure 4.4, in how social protection's negative association with poverty is only very slightly stronger in the low ALMP settings than the high ALMP settings. Even in the latter case, we see (marginally) significant negative effects of social protection on poverty risk. This pattern holds across all of the samples in our estimates – even, for instance, among the unemployed population that might be most victim or subject to the Matthew effects logics sketched above (for results see Table A4.4).

On the other hand, we do find a significant moderating effect of ECEC effort on the poverty-fighting function of social protection, but in the direction of poverty-fighting complementarity rather than Matthew-effects incompatibility. The right-hand panel of Figure A4.1 captures this pattern: there we see that social protection's negative association with poverty risk is significantly more negative in settings characterized by generous ECEC than in settings with meagre ECEC spending effort. This is a clear and strong moderation pattern of complementarity. This pattern holds across most of the subsamples: for all but the unemployed subsample, social protection has a more statistically-significant negative association with poverty probability in settings with higher, rather than with lower, ECEC effort (results not shown but available in Table A4.5).

In sum, our micro-level analysis of how social investment and social protection jointly shape poverty-fighting provides little support for Matthew-effects incompatibility. Both social investment and social protection are associated with lower poverty risk – with the combinations of generous ECEC and ALMP with generous social protection being associated with the lowest individual poverty risk. Also, Matthew-effect incompatibilities where social investment measures might be expected to diminish the poverty-fighting effectiveness of social protection are never significant in our analyses. On the contrary, ECEC-based social investment measures interact with social protection in a show of complementarity: social protection buffers show patterns of more strongly buffering against poverty in settings with higher, rather than lower, ECEC-based social investment.

Takeaways

The more general conclusion is that our exploration of possible complementarities or incompatibilities in how social investment and more social protection policies jointly shape employment and poverty provides more support for a portrait of complementarity than conflicts (either incompatibility or substitution). This is important because the micro-level analyses provide substantial leverage to explore complementarities or conflicts by allowing us to look at substantial individual-level variation in the large EU-SILC true-panel and controlling for individual households' poverty and employment past. This said, we are keenly aware of the many limits to such analysis, not just as is relevant to any observational approach, but also as one that relies on macro-level measures of social policy settings in which our sample individuals work and live. This is a necessary shortcoming for anyone looking to explore complementarities for a substantial cross-section of European countries and years.

5. Poverty alleviation in Germany through social investment: a case study[4]

Over the first decade of the 21st century, successive German governments implemented various reforms that enhanced the German welfare state's social investment portent. These changes have transformed the German welfare state from the male-breadwinner model towards a dual-earner family model. Although the main aims of these reforms were not directly focused on poverty alleviation, they have all impacted families' and individuals' livelihoods in terms of disposable income across critical life-course situations where the risk of experiencing poverty is heightened. With a rapid increase of poverty rates at the beginning of the 21st century, followed by significant changes in the welfare state provisions, Germany is an ideal case to examine how social investment has impacted the lives of vulnerable groups, namely single parents and young adults, particularly at risk of poverty.

Considering social protection to be the traditional welfare state tool in poverty alleviation, the so-called Hartz reforms in the mid-2000s changed the nature of German unemployment insurance significantly. The most contentious Hartz IV reform of 2005 involved the merger of the provisions of unemployment assistance for the long-term unemployed with social assistance for those in need without an employment record, creating a new unemployment benefit with stricter eligibility criteria and sanctions. Although this has had a positive impact on overall employment, the reform has been combined with a new low-wage job-creation programme and deregulation of temporary and atypical work, which has also resulted in an increase in in-work poverty (Gerlitz, 2018).

The government also put families at the core of its policy platform with generous tax deductions for parents taking up childcare facilities to stimulate demand, especially among low-income families. But the work-life balance parental leave and childcare policies were revolutionized in the mid-2000s when the right to childcare was extended to children under 3 years old and more generous and earnings-related parental leave was introduced. The rapid expansion of childcare facilities was due by 2013 with financial support from the German government to the Länder to improve quality standards in

4 This section is based on Pöyliö, Heta: The Holy Trinity of Social Investment: Empirical Evidence of the Impacts of Stock, Flow and Buffer Policy Functions on Poverty in Germany, under review.

early education. All and all, by raising childcare as a public concern of early childhood education, alongside the important 2015 Constitutional Court ruling invalidating the home-care allowance, Germany decisively pulled away from the male-breadwinner model towards a fully-fledged political commitment to bring more mothers and single parents into the world of paid employment in a country plagued by low birth rates.

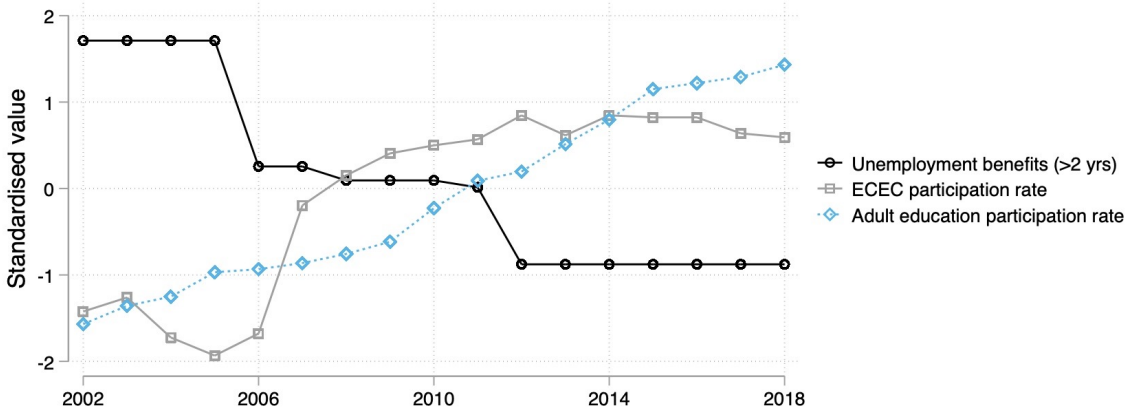
As a response to the high poverty rates, Germany also introduced new incentives for training and further education. With a wider educational emphasis, adult education being the new trend across Europe in the early 2000s, Germany aimed at reforming vocational training towards lifelong learning. Also, more targeted programmes for disadvantaged groups, such as training opportunities for low-skilled and unemployed individuals, and employer subsidies for youth employment, were introduced to promote employment of marginalised groups (Fleckenstein, 2011).

All in all, considering the vast set of reforms, Germany, as a social investment late-bloomer, arguably took over from the Netherlands as the social cheerleader among continental welfare regimes (Di Carlo et al., 2024). The policy changes all aimed at higher employment levels of the population, particularly of those not yet well integrated into the labour market, namely (single) mothers and young adults. These same groups are also most vulnerable to poverty. While employment-enhancing social investment policies such as ALMP and ECEC, in addition to monetary social protection, are found to have positive poverty returns, especially for single mothers (Maldonado and Niewenhuis, 2015; Moller et al., 2007; Zagel et al., 2021), the policy impacts on young adults has obtained far less attention, although results on training efforts intended to improve employment situations provide some light in this relation (Zabel, 2013). Further, as elaborated in the previous chapter, the complementary effects of social investment and social protection on poverty can be manifold, yet are understudied. Hence, this chapter examines the independent and complementary effects of the changes in these policies, namely unemployment benefits (buffer), ECEC (flow) and adult education (stock), on individual poverty risk in Germany.

Methodology

The analyses are based on longitudinal individual-level data from the German socioeconomic panel, for the years 2002–2018, limiting the analysis to 17–60-year-olds. The individual poverty risk is measured as being below 60 per cent of the equivalised median disposable household annual income. Age groups (youth, 17–29; working age, 30–49; and older, 50–60) are used to analyse the policy effects on young adults, and information on partnership and children in the household is used to examine the effects on single mothers. Individuals are matched with information on policy indicators from OECD and Eurostat: (1) long-term unemployment benefits, measured as the replacement rate after two years of unemployment; (2) ECEC, measured as participation rate; and (3) adult education participation rate. These policies reflect the major changes that have taken place in Germany in the 21st century: a reduction in unemployment benefits, rapid expansion of ECEC and a gradual increase in adult education. To correctly observe the effect of policy changes, the policy indicators are time lagged (the value of the previous year is used to analyse the poverty risk on the current year) and for comparability across the policy indicators, they have been standardised (see Figure 5.1). Because unemployment benefits have been reduced over time in Germany, this variable has been reversed for analyses so that it represents the volume of the reduction instead, allowing easier interpretation of the indicator as a continuous measure.

Figure 5.1. Policy indicators (lagged) 2002–2018 in Germany



Note: Unemployment benefit values are reversed in the models for easier linear interpretation

To examine individual poverty risk in a longitudinal setting, logistic regression models with clustered standard errors and cross-sectional individual weights were used. The overall poverty risk levels across the age and family groups (Figures 5.2 and 5.4) are presented as unadjusted probabilities to show the absolute, not comparative or controlled, poverty risks. When examining the effects of the policies, models include individual (education, labour market status, immigrant status, age and region) and macro-level (GDP) covariates. The modelling allows the covariates to be either time-varying or stable. Further, interaction terms are used when studying the policy effects on vulnerable groups, presented as average marginal effects (AMEs) of each policy on the poverty risk of the groups studied, controlling for the other policy indicators to draw out the independent impacts of each policy (Figures 5.3 and 5.5). Hence, the results can be interpreted as the percentage change in the probability of being in poverty with a one-unit increase in the policy, while controlling for other individual and contextual factors influencing the poverty risk. Results on policy complementarities, namely the interaction effects between the policies (Figure 5.6), are presented as predicted probabilities (GDP not controlled for collinearity). Results of all interaction models are in the Appendix (Tables A5.1-3).

Results

Although women have a higher poverty risk than men throughout almost all their life course, worrying levels of youth poverty are found among both genders. Figure 5.1 demonstrates how the poverty risk (of both men and women) has developed since 2002 in Germany and clearly demonstrates the persistency of youth poverty. Although the poverty risk of young adults slightly decreased after 2010, this reduction has been part of a wider poverty alleviation in Germany and the drastic difference in the poverty risk between young adults and the rest of the working population has not diminished.

To test whether social investment and social protection policies can mitigate the alarmingly high poverty risk of young adults, Figure 5.3 demonstrates the interaction results between each policy, age groups and gender. The results demonstrate that the increases in ECEC and adult education have had an alleviating effect on the risk of poverty across all age groups for women, but less so among young men. The reductions in unemployment benefits, however, have had an opposite impact, heightening the poverty risk for all, and particularly for young men. While the policies are found to reduce the poverty risk among men and women in working and older ages, for young adults the impact is gendered. Although the policy changes in Germany have not been able to breach the overall age gap in poverty risk, the positive effect on women may have bridged the gender gap in poverty.

Figure 5.2. Poverty risk (unadjusted) 2002–2018 by age group

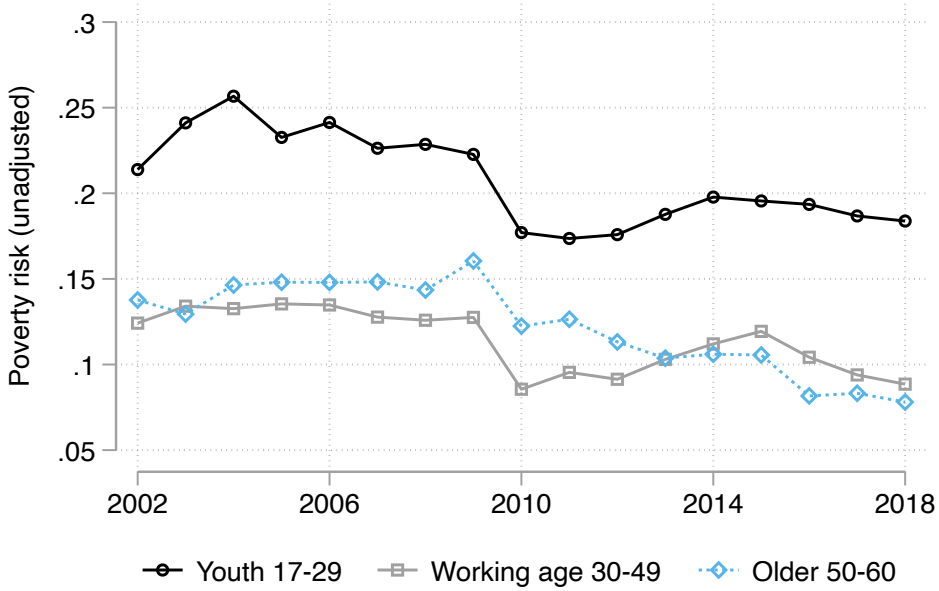
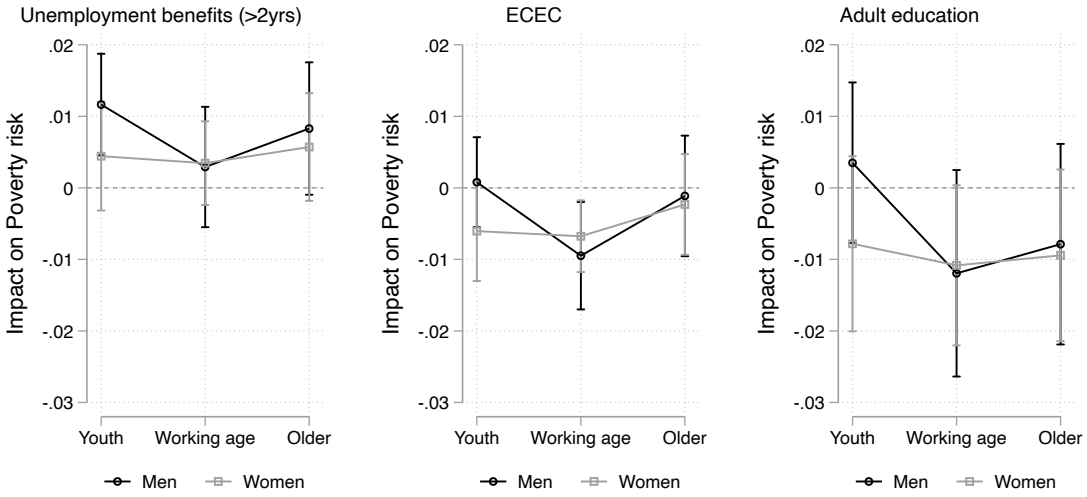
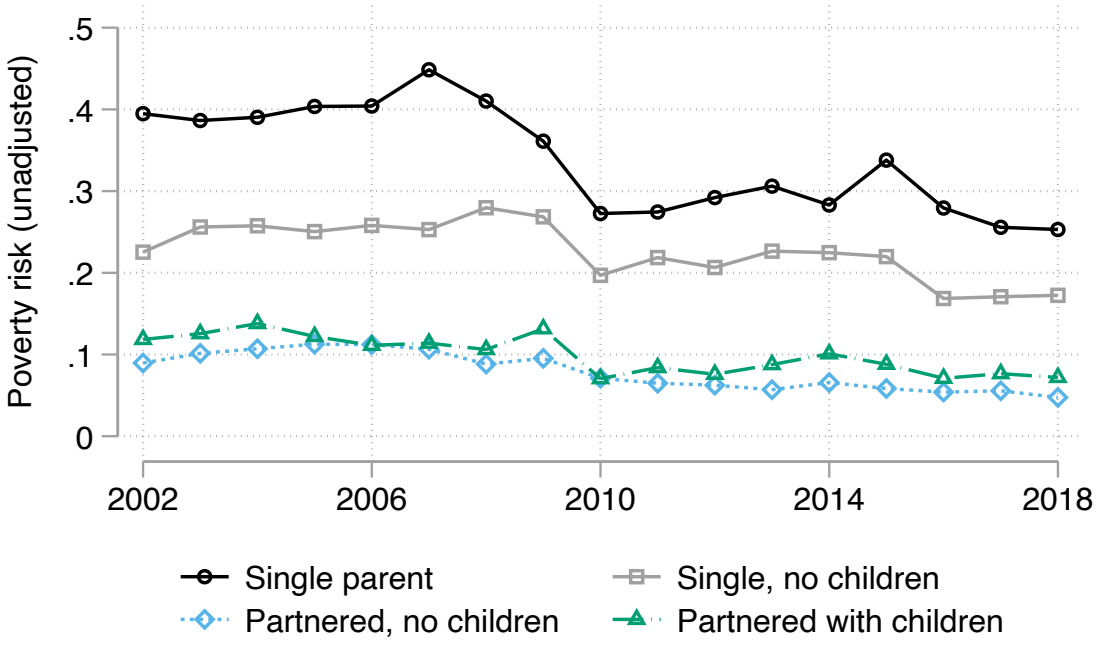


Figure 5.3. Policy impacts on individual poverty risk by gender across age groups



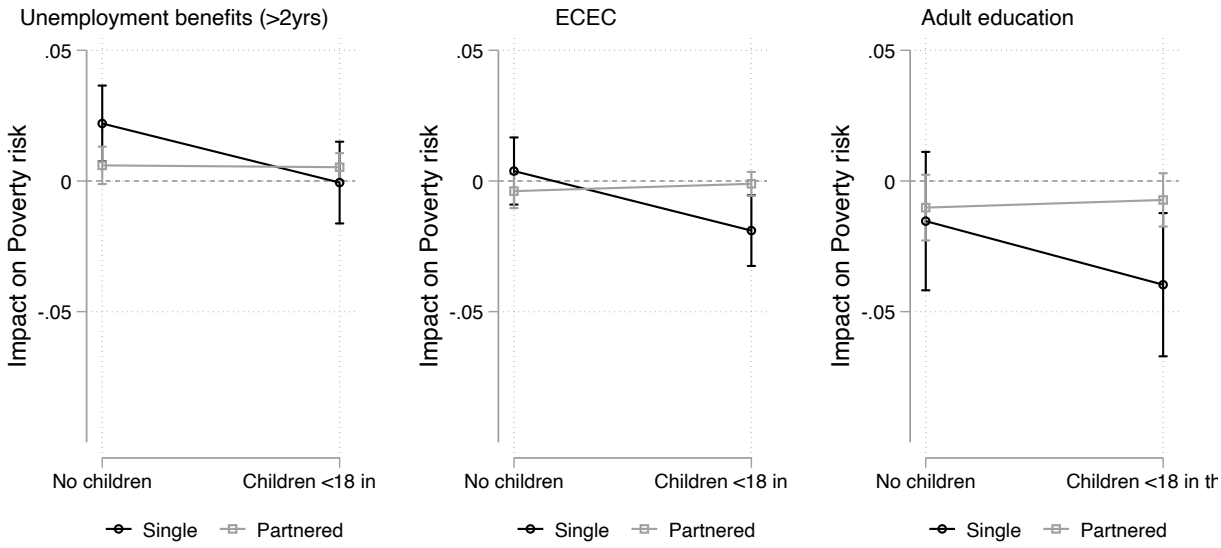
Another group extremely vulnerable for poverty is single parents, and particularly single mothers as fathers don't suffer similar disadvantage from parenthood, and numbers of single mothers are much higher in every welfare state than single fathers. Figure 5.4 shows the poverty risk of women based on their family status, illustrating that single mothers clearly have the highest poverty risk between 2002 and 2018 in Germany. However, positive changes are also visible as the poverty risk of single mothers reduced after the mid-2000s and remained at lower levels. Although some positive alleviation has occurred among other family groups, single mothers' poverty risk has diminished also comparatively since the volume of the change is higher than in other family groups.

Figure 5.4. Women's poverty risk (unadjusted) in Germany by family status 2002–2018



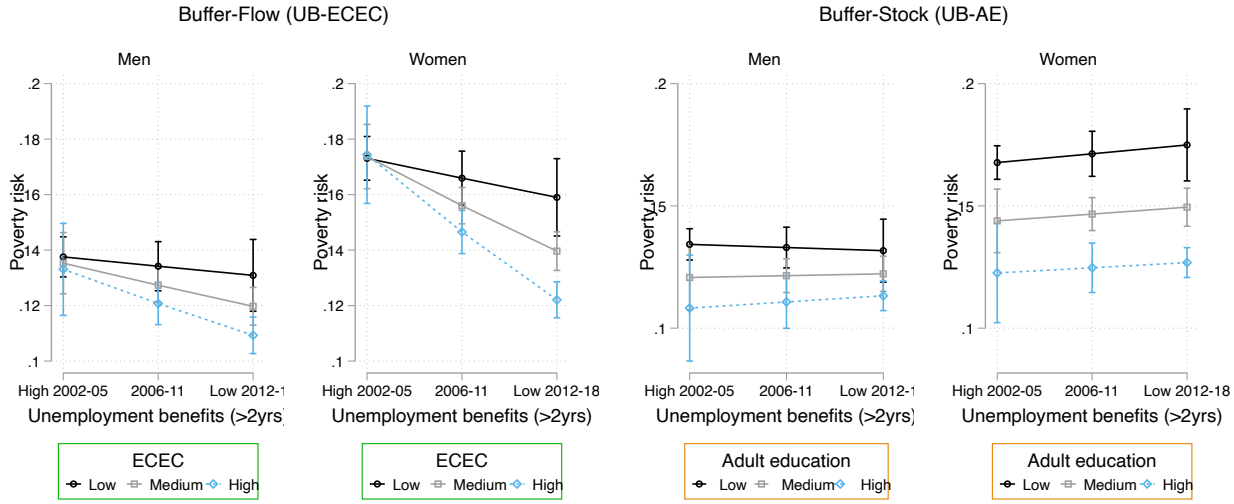
The results in Figure 5.5 show that the social investment policy changes implemented in Germany, namely the expansion of ECEC and increase in adult education, have had a positive effect on poverty among single mothers. Whereas the poverty reduction achieved by expanded ECEC is very small and group differences are marginal, adult education has a more evident positive effect on the poverty risk of all women, but particularly of single mothers compared to women in any other family situation. The reductions in unemployment benefits, however, have again been found to have an opposite, negative effect on poverty; while partnered women do not seem to be affected by the changes, the poverty risk of single women is increased by the cuts in unemployment benefits made early in the 21st century.

Figure 5.5. Effects of policy functions on individual poverty risk for single and partnered women with and without under-aged children in the household



While these individual policies show interesting results on the poverty alleviating effects of social investment and social protection changes in Germany, the possible complementary associations may yield further insights into the changes in poverty risk for vulnerable groups. Figure 5.6 presents interaction effects between social protection buffers (unemployment benefits) and social investment policy (ECEC on the left and adult education on the right of the figure) on men's and women's poverty risk. The results demonstrate a complementary effect, particularly of an accumulative nature, between buffer and flow policies, but a more neutral association between buffers and stock policies. The buffer-flow policy complementarities indicate that the changes in unemployment benefit alone would not have resulted in lower poverty risk, but combined with extended ECEC, the poverty risk is significantly reduced. The interaction with adult education, however, is not the same, as the poverty risk is lowest at high adult education levels, despite the changes in unemployment benefits. Surprisingly, the policy complementarities seem to be applying to both genders, although among women the differences are somewhat more complex. This highlights the importance of policies promoting work-family balance as a syndicator for the traditional poverty alleviation measures to be efficient in reducing women's, but apparently also men's, poverty risk.

Figure 5.6. Policy complementarities, for men and women



Takeaways

The German welfare state has implemented various changes towards social investment in the 21st century. These changes seem to have resulted in positive poverty returns even among vulnerable groups, namely young women and single mothers. This shows that policy reforms that strengthen social investment, such as ECEC and adult education, have been able to promote the well-being of the groups most vulnerable to poverty. Particularly positive findings relate to a reduced poverty risk among women who, whether young women or single mothers, have benefited from the social investment turn in Germany. The results show that stronger flow policies can enhance the impact of buffers on women's poverty risk, suggesting that the positive policy impacts on women could be an outcome of the higher emphasis on maternal employment and gender equality improving the well-being of all women in Germany. While the policy changes seem to be less influential in reducing young men's poverty risk, the changes in the German welfare state have been able to decrease the gender gap in poverty.

The results show that the social protection reform in unemployment benefits that emphasised activation has been inadequate to boost better livelihoods in terms of individual poverty risk, whereas strengthened education and family policies are found to alleviate poverty. Further, the results on policy complementarities indicate the strong importance of ECEC in poverty reduction. Correlation is not causation. It is difficult to infer causal policy effects from a few quite recent reforms. However, the German case study does add credibility to social investment life-course multiplier effects, and purported policy complementarities, and provides evidence that reforming a male-breadwinner welfare state more strongly towards social investment comes in tandem with poverty alleviation and promotes more sustainable livelihoods even for the most vulnerable groups in society.

6. Subjective well-being returns on social investment[5]

This section addresses the subjective impacts of social investment, emphasizing that while material well-being returns are now generally appreciated, subjective psychological effects of social investment provision remain poorly understood. Social investment claims to strengthen individual and family agency in a 'stepping stone' capacitating manner, yet empirical evidence is scarce. While certain life-course stages, such as parenthood, unemployment and old age, are critical for subjective well-being, previous studies have found that their negative impact can be alleviated by specific policies. For example, parental leave, financial benefits to families, high childcare provision, high working time flexibility, paid time off and childcare subsidies were found to moderate the negative subjective well-being disparity between parents and non-parents (Pollmann-Schult, 2018; Radó, 2020). Further, workfare programmes, educational policies, unemployment benefits, low employment protection legislation, and regulation of temporary employment have alleviated the negative well-being effects of unemployment (Crost, 2016; Högberg et al., 2019; Kamerāde and Bennett, 2018; Voßemer et al., 2018). In relation to old-age policy, the policy impact evidence is scarce, and only pension insecurity has been found to have a negative effect on life satisfaction (Olivera and Ponomarenko, 2017). Contributing to this literature, the penultimate section of this study examines whether social investment governmental policies in the form of in-kind expenditure can impact subjective capacity disparities associated with critical life-course stages.

The empirical investigation delves into cross-sectional analyses on both types – traditional and social investment – of welfare state expenditure and their correlation with subjective well-being. Introducing the concept of 'subjective capacity', we aim to offer a more comprehensive well-being measure, assessing the impacts of social investment on individuals' agency, resilience, potentiality and meaning, in the sense of purpose in life. Focusing on critical life-course stages like parenthood, unemployment, and aging, the study provides empirical evidence on whether social investment keeps its promise of enhancing well-being beyond material and societal levels over the life course.

Methodology

Micro-level data from the 4th round (years 2016–2017) of the European Quality of Life Survey (EQLS) (Eurofound, 2018), is matched with Social Expenditure Database (SOCX) (OECD, 2024), and Labour Market Programme statistics (OECD, 2013) from the year 2016 to examine the relationship between social investment and subjective capacity. Focusing on parenthood, unemployment, and old age as main groups of interest, the samples encompass 23 EU member states, comprising 21,076 individuals aged 18 to 70 in parenthood models, 14,449 individuals aged 18 to 65 in unemployment models, and 19,533 individuals aged 35 to 95 in old-age models.

5 This section is based on the findings from Lehmus-Sun, A. 'From Making Work Pay to Making Welfare to Capacitate: Social Investment's Promise of Wellbeing'. (PhD Dissertation, defended at the European University Institute in November 2023).

The subjective capacity Index (Table 6.1) is a composite measure, comprising agency, resilience, potentiality and life purpose (see table below), and serves as a pivotal outcome measure in this study. The four dimensions contribute equally to the index, demonstrating high internal consistency (Cronbach α: 0.7). The measure is distinct from traditional subjective well-being indexes and provides a nuanced exploration of well-being outcomes associated with social investment policies. Reflecting individuals' subjective evaluation of their functioning capacity, this index aligns closely with the philosophical foundation of social investment and secure functioning.

Table 6.1. Variables used in the models

Category	Variables	Measurement
Outcome	Subjective capacity index (range 1–5)	Agency: freedom to decide how to live (survey-based self-report)
		Resilience: ability to bounce back after facing problems (survey-based self-report)
		Potentiality: having trust in the future and oneself (survey-based self-report)
		Purpose: believing that own actions in life are worthwhile (survey-based self-report)
Parenthood	Social investment in-kind family policy spending	Early childhood education and care, home help, and other in-kind benefits
	Traditional welfare state cash family benefits spending	Family allowances, maternity and paternity leave, and other cash benefits
Unemployment	Active labour market policy spending	Public employment services and administration, training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation, and start-up incentives
	Passive labour-market policy spending	Out-of-work income maintenance and support and early retirement
Ageing	Social investment in-kind old-age benefits spending	Residential care, home-help services, and other in-kind benefits
	Active ageing index	Independent living, participation in paid employment and social activities, and capacity for active ageing
	Traditional welfare state cash old-age benefits spending	Pension, early retirement pension and other cash benefits

Policy spending is measured as expenditure on family benefits, labour market measures and old-age benefits. Each of these measures are categorized into two indicators based on the type of expenditure (as a percentage of the total GDP): one representing traditional welfare state cash benefits, and another for social investment in-kind benefits (Table 6.1).

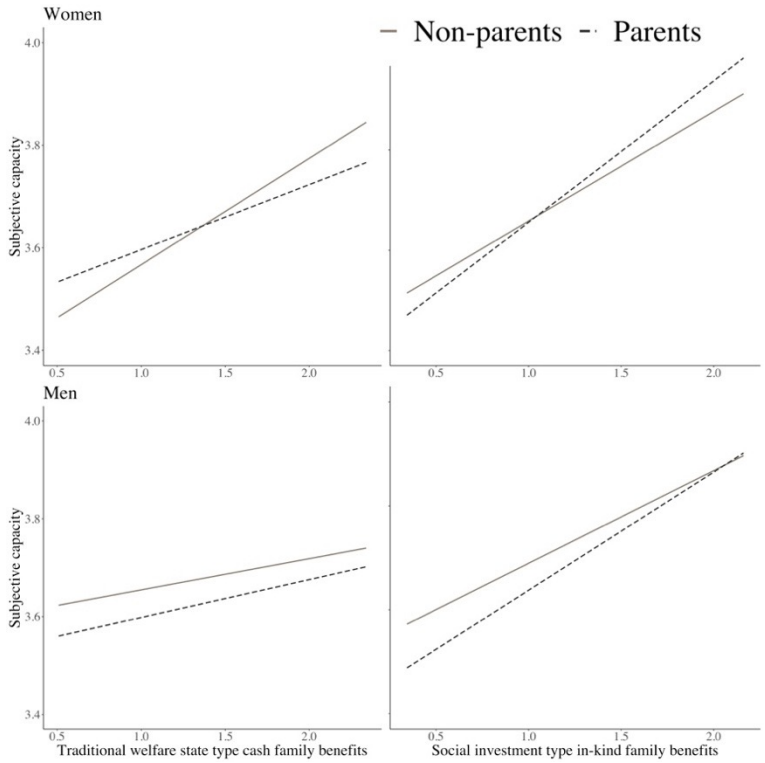
All analyses employ linear regression multi-level models considering individuals nested within countries, reflecting variations in policy spending at the macro level. These models estimate random intercepts with robust standard errors, assessing cross-level interactions between family, labour market, and old-age policy spending and specific sociodemographic characteristics (having child(ren), being unemployed, ageing) on individual subjective capacity. All analyses include control

variables for gender, age, relationship status, educational level, and GDP per capita except when included as the main independent variable in the models. Population weights for cross-sectional within-EU analyses (Eurofound, 2018) were applied to all models.

Parental well-being

The findings indicate that increased spending on any type of family benefit is linked to higher subjective capacity across gender and parenthood (Figure 6.1). Cash benefits (family allowances, maternity and paternity leave and other cash benefits) seem to have a greater positive impact on subjective capacity for non-parent women compared to mothers, with no discernible difference for fathers and non-parent men. However, the results show that the positive influence of in-kind family policies (early childhood education and care, home help and other benefits in kind) is more pronounced among mothers and fathers than non-parents, completely bridging the capacity gap at the highest expenditure levels, leading to mothers surpassing non-mothers in subjective capacity. Further examinations indicate that the most pronounced effects are observed in terms of resilience, potentiality and purpose. Among men, the impact is similar with the highest spending levels closing the gap but not surpassing the subjective capacity of fathers beyond that of non-parent men.

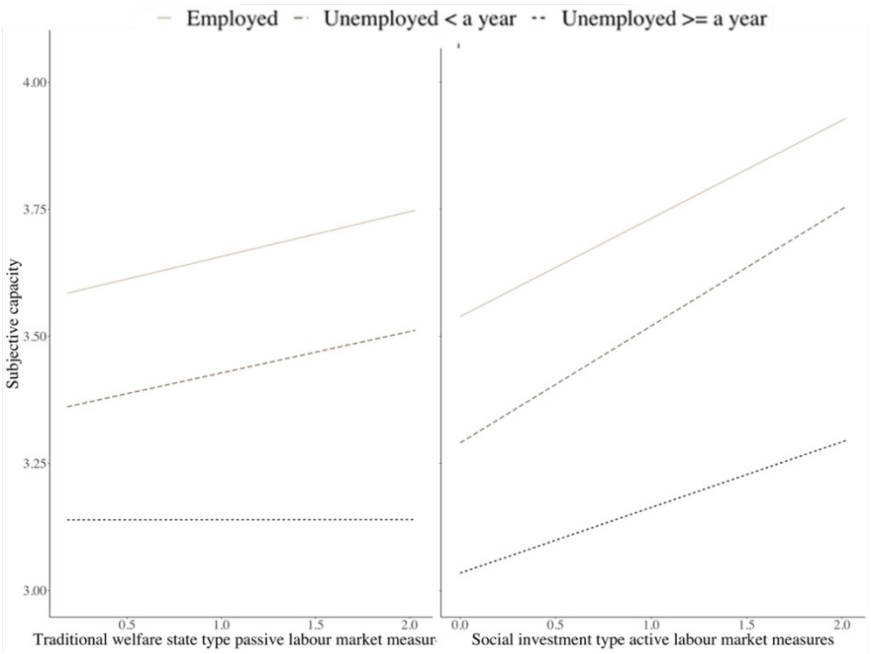
Figure 6.1. Parental subjective capacity



Navigating unemployment

The results on the impact of labour market policies on individuals' subjective capacity show that increased spending on active labour market policies (public employment services and administration, training, employment incentives, sheltered and supported employment and rehabilitation, direct job creation and start-up incentives) correlates positively with higher overall subjective capacity levels among all individuals independent of employment status (Figure 6.2). Additional analyses reveal that the most significant impacts are observed in terms of resilience and purpose. The positive impact of passive labour market policy spending (out-of-work income maintenance and support and early retirement), on the other hand, is less tenacious and contributes to increased subjective capacity only for the employed and short-term unemployed, but not for the long-term unemployed.

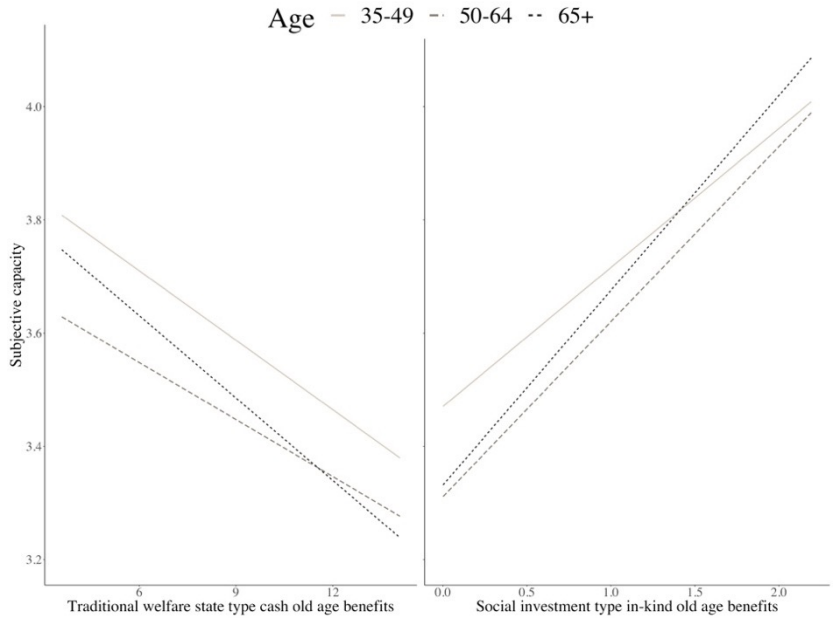
Figure 6.2. Unemployment and subjective capacity



Active ageing

Lastly, we investigate the correlation between social investment in old-age policies and subjective capacity across different age groups (Figure 6.3). The results reveal a substantial positive impact of in-kind spending in old-age policy (residential care, home-help services and other in-kind benefits) on all age groups but the increase is higher among the older age groups (50–64 and 65+), compared to the younger group (35-49). The findings were notably robust concerning agency and meaning. The spending on traditional welfare state cash benefits (pension, early retirement pension and other cash benefits) has an opposite impact as higher levels of in-cash spending are associated with lower subjective capacity among all age groups, the steepest reduction being among those aged over 65. Investigating the correlation between the Active Ageing Index and various categories of expenditure on the elderly, the research reveals a robust positive connection with the allocation of resources towards in-kind old-age benefits. Nations allocating greater funds to in-kind old-age policies also demonstrate increased investment in active ageing, encompassing aspects such as independent living, engagement in paid employment and social activities, and the overall capacity for active ageing. This heightened commitment is positively linked to an enhanced subjective capacity among the ageing population.

Figure 6.3. Ageing and subjective capacity



Takeaways

The outcomes emphasize the crucial role of services based on social investment in influencing individuals' subjective well-being, particularly in the domains of family and aging policies. Countries with lower investment in in-kind policies may enhance the subjective capacity of individuals and families by improving social investment in their welfare policy repertoires. Each social investment policy expenditure seems to yield positive impacts for their respective target populations, with certain sectors (such as family services) demonstrating more pronounced effects compared to others (like active labour market measures), and some policies having broader positive implications (such as active ageing investment).

Notably, we have provided insights into the impact of social investment in family services, emphasizing that in-kind family policy significantly mitigates the adverse relationship between parenthood and subjective capacity. In examining the impact on mothers, the findings suggest that a narrow policy focus on cash family policy spending leaves them somewhat 'left behind', whereas countries with high investments in in-kind family policies see mothers thriving. While the available data does not permit a more detailed analysis of policy measures, the potential catalyst for positive subjective well-being could likely be early childhood education and care. Previous studies have indicated its positive impact on parental well.being and the promotion of a better work-life balance (Pollmann-Schult, 2018; Radó, 2019).

The widely recognized positive effects of active labour market policies on short-term unemployment and labour market dynamism find support in our results to some extent. The findings imply a very modest yet positive influence of active labour market policies on the subjective well-being of the short-term unemployed. Speculatively, this positive effect may stem from a well-balanced set of active labour market policy measures, with particular emphasis on training and employment services. In addition, we expose the complexities in effectively addressing the negative subjective capacity impact of long-term unemployment. Traditional passive labour market spending is deemed inadequate in promoting the well-being of long-term unemployed individuals by underscoring the important role of active policies that reach out to marginalized groups.

Noteworthy is the impact of expenditure on old-age benefits, which indicate that countries allocating more funds to in-kind old-age benefits positively affect subjective capacity across all age groups. In-kind old-age benefits, particularly residential care and home-help services, exhibit a strong correlation with a higher Active Ageing Index. This implies that nations allocating greater funds to

old-age care services also demonstrate increased investment in enabling elderly independent living, fostering participation in employment, and enhancing the capacity for active ageing. This implies that social investments in active aging policies contribute positively to the overall subjective well-being of the population. This contrasts with the adverse impact of higher spending on traditional welfare state cash benefits, which is associated with lower a Active Ageing Index of the country, as well as subjective capacity across all age groups. Unlike cash benefits, in-kind benefits as capacitating services appear to be crucial not only for the elderly but also for the entire working-age population, emphasizing the significance of services for the aging parents of the working-age population and suggesting a robust intergenerational contract facilitated by services, alongside more established cash benefits, such as pensions.

7. Conclusion

The central objective of our contribution has been to articulate a theoretically-informed assessment of the social and economic 'returns' of social investment welfare provision. Given the very complex ambiguity of the debate about social investment, rendering a fair empirical assessment is difficult – far more than with respect to directly redistributive social security policy provisions. We have opted for a layered and pluralist approach that combines and compares different kinds of data and evidence that can contribute to the understanding of social investment welfare provision. Each layer of information, individually, constitutes only a limited insight into the proficiency of social investment but, taken together, the different parts add up to a strong case of cumulative causal adequacy, clarifying how the relationship between given aspects contribute to given aspects of social well-being. The different levels of analysis adopted ranged from comparative quantitative macro analysis to quantitative micro analysis of individual socioeconomic experience, to the country-specific micro-quantitative analysis of Germany in recent years, and finally included a comparative quantitative analysis of subjective well-being with respect to critical life-course transitions. All four layers of analysis entail observational empirical research, but each level provides distinct inferential leverage, each of which includes room for a broad range of particular methods to develop descriptive and causal inferences about the returns to social investment.

By way of conclusion, we would like to very briefly consider a few of the most important policy pointers of our study and methodology, and offer concrete recommendations to policymakers for the application and further development of a methodology for measuring well-being returns of social investment. Our overall conclusion that is social investment welfare provision provides powerful leverage to the inference of returns to social investment in Europe according to the logic of the life-course multiplier. The macro correlational analysis reveals fairly strong descriptive inferences about positive returns with respect to economic growth, competitiveness, employment, income equality and fiscal balance. Two important take aways from our micro-quantitative analysis are that, firstly, work- and care-related social investment policies tend to reinforce each other's effectiveness in promoting individuals' employment chances, and secondly, social investment and social protection policies have strong synergy effects in terms of positive redistributive outcomes. Regarding social investment complementarities, estimates show that in European societies, national ECEC and ALMP spending efforts are associated with a higher employment likelihood among individuals with children, but the marginal effect of higher spending effort in one policy increases at higher spending levels in the other policy. This is in line with the theoretical expectation that at an individual level, the likelihood of being or choosing to be employed tends to significantly increase through public efforts that allow combining employment activity with family duties.

Regarding social activation and social protection complementarities, estimates show that while spending efforts on both policy types are associated with lower poverty risk, the combination of generous ECEC and ALMP with generous social protection is associated with the lowest individual

poverty risk. The analyses do not find any substantive evidence for the so-called Matthew Effect argument where social investment measures might be expected to diminish the poverty-fighting effectiveness of social protection.

The latter inference is confirmed by case-analysis of Germany, using German micro-level panel data. Finally, we have also been able to reach beyond material well-being measures of employment and poverty, to include subjective well-being, unsurprisingly suggesting that ECEC and active ageing contribute to psychological well-being and agency. A more qualitative institutional analysis is perhaps warranted to analyse the 'goodness of fit' between maternity/parental leave arrangements and early childhood education programmes, which we have merely touched upon above. However, much of our analysis has been constrained by data limitations that prevent exploration of more long-term implications of social investment for well-being. We know that the real returns to a given face of social investment for such well-being might only show up after many years, yet most of the evidence we can supply reveals the positive externality promise of social investment.

Based on the evidence we collected, we believe that all in all welfare states today are far less subject to equity-efficiency trade-offs and employment trilemmas. Generous welfare states are no drag on economic growth and competitiveness. What matters is the complementary design of welfare policy provisions, with an emphasis on inclusive buffers and gender-balanced flow, and lifelong human capital development. Social investment welfare states are expensive, yet effective, popular and affordable. Ex post social protection is crucial for mitigating poverty. Unemployment benefits do not adversely affect labour market dynamism but stabilize the macro economy in recessions by absorbing shocks. Early childhood education and care is crucial for parental employment continuity, especially for working mothers, reducing gender imbalances, and fostering children's cognitive and social development. Investments in high-quality education systems correlate with improved employment rates and reduced poverty among young adults, by fostering a skilled workforce. Active labour market policies also promote skill development and economic participation, especially through vocational training, helping to reduce unemployment and poverty, and mitigating the risk of moral hazard. Active ageing, with its focus on late career training, flexible retirement options, and long-term care to promote continued activity, prolong employment, and support female labour market participation. Moreover, ECEC and active ageing reinforce subjective well-being and agency.

The overarching conclusion of our work is that there (no longer) is any reason to fall prey to an unwarranted opposition between passive, ex post compensatory social policies and active, ex ante capacitating social policies. The more advanced social investment welfare states are able to sustain the highest levels of social protection in the EU. Social protection and social investment go together! The other good news is that there is an overall convergent trend underway in the direction of social investment reform across Europe. The long-term strength of the economy and welfare provision is increasingly contingent on the contribution of social policy to the (dynamic) productive denominator side of the welfare equation. However, we can also observe 'clustered' vulnerabilities in terms of (gendered) underemployment, intergenerational inequality, and fiscal imbalances. The dual-earner model, the knowledge economy, and an ageing society, require a wider and more multidimensional ambit of policy interventions across the entire life course, beginning with children. It is quite revealing that over the past decade the EU has become ever more actively engaged in social investment agenda-setting, diffusion and monitoring. Having learned from the mistakes of the sovereign-debt austerity reflex and the more salutary COVID-19 pandemic experience, we observe a distinct shift from the nominator-biased Annual Growth Strategy policy recommendations to gendered denominator-oriented European Semester and European Pillar of Social Rights.

This brings us to our final methodological recommendations on how best to extend the analysis and methodology on social investment returns. We recommend that policymakers gather new and (in our judgment) better data on social investment provisions and on their take-up. As our discussion in the sections above has already suggested, there are many empirical gaps in the data needed to understand the various aspects of social investment. To give but one example, we know that there

are too few standardised measures of spending and effort on parental leave and childcare provisions. There are fewer measures of the generosity of various social investment services and regulatory measures that would allow us to go beyond spending-based operationalization of 'effort'. Most scarce are good indicators of labour market 'flow' over the life course. This might involve an entirely new data apparatus for various aspects of social policy programmes, (co-)financed and carried out by Eurostat or national statistical bodies. But an easier fix might be to modestly expand the EU-SILC data instrument to include more information on respondents' detailed experiences with social policy benefits or receipt of monies relevant to the various programmes, and especially capacitating social services that we strongly associate with social investment. Individual-level measures of social policy programme participation will allow assessment of direct policy impacts to derive improved causal inferences, and will facilitate urgent research into how social investment and social protection programmes in various policy designs play out for avoiding poverty and ensuring employment for Europe's citizens.

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Appendices

Table A3.1. Indicators of social investment performance

Policy	Investment indicator	Stock indicator
Education	Government expenditure on secondary vocational and tertiary education, measured in Purchasing Power Standards (PPS) and weighted by the population aged 15 to 24 years.[6]	Share of people between 25 and 34 years old with completed secondary vocational education and tertiary education.[7]
ALMPs	Government expenditure on (1) vocational training programmes weighted by the number of working-age individuals with formal education up to lower secondary level;[8] and (2) activation policies weighted by the number of unemployed people.[9] Activation policies include employment services, employment incentives, supported employment and rehabilitation, direct job creation, start-up incentives, and out-of-work income maintenance and support. All these components are measured in PPS.	Participation rate in education and training programmes in the past four weeks among individuals aged 15 to 54 years.[10]
Early education and childcare	Government expenditure on early education and childcare, measured in PPS and weighted by the population under 5 years old.[11]	Average weekly hours of formal childcare for children younger than the compulsory school age, including those not enrolled in formal childcare services.[12]
Inclusive buffers	Net government expenditure on contributory unemployment benefits and social assistance, measured in PPS and weighted by the number of unemployed individuals and those earning 40% or less of the median equivalised income before social transfers but after pensions.[13]	Pseudo-coverage rates: the ratio of actual beneficiaries to potential beneficiaries (OECD). This includes the number of beneficiaries of unemployment and social assistance programmes, weighted by the number of unemployed individuals and those earning 40% or less of the median equivalized income before social transfers but after pensions.[14]

6 Sources: Eurostat (educ_uoe_fine01; nama_10_gdp; demo_pjangroup).
7 Source: Eurostat (edat_lfse_03).
8 Sources: Eurostat (spr_exp_fun; nama_10_gdp; edat_lfs_9902).
9 Sources: Eurostat (lmp_expsumm; nama_10_gdp; une_rt_a).
10 Source: Eurostat (trng_lfs_01).
11 Sources: Eurostat (spr_exp_ffa; nama_10_gdp; demo_pjan).
12 Sources: Eurostat (ilc_camnforall; demo_pjan).
13 Sources: Eurostat (spr_exp_fun; spr_exp_fex; nama_10_gdp; spr_net_ben; une_rt_a; ilc_li10 demo_pjangroup).
14 Sources: OECD (SOCR); Eurostat (une_rt_a; ilc_li10; demo_pjangroup).

Table A4.1. Countries and surveys included in the study

Country	Survey year	Country	Survey year	Country	Survey year
Austria	2004–2015	Ireland	2004–2015	Portugal	2004–2015
Belgium	2004–2015	Iceland	2004–2015	Slovakia	2005–2015
Czech Republic	2005–2015	Italy	2004–2015	Slovenia	2005–2015
Denmark	2003–2015	Latvia	2005–2015	Spain	2004–2015
Estonia	2004–2015	Lithuania	2005–2015	Sweden	2004–2015
Finland	2004–2015	Luxembourg	2003–2015	Switzerland	2011–2015
France	2004–2015	Netherlands	2005–2015	United Kingdom	2005–2015
Greece	2008–2015	Norway	2003–2015		
Hungary	2005–2015	Poland	2005–2015		

Table A4.2. Odds ratios of being employed: interaction between early childhood education and care (ECEC) and active labour market policy (ALMP) spending

	Total workforce	Total workforce	Country fixed effects	ALMP and ECEC one-year lag	Female sample
ECEC spending (std.)	1.248***	1.242***	0.983	1.243***	1.325***
	[0.028]	[0.027]	[0.037]	[0.028]	[0.034]
ALMP spending (std.)	1.090***	0.999	1.052	0.997	0.966
	[0.028]	[0.029]	[0.044]	[0.029]	[0.033]
ECEC X ALMP		1.111***	1.091***	1.120***	1.121***
		[0.020]	[0.032]	[0.021]	[0.024]
Employed/Active (t-1)	40.925***	40.898***	40.706***	40.660***	57.047***
	[0.695]	[0.695]	[0.691]	[0.724]	[2.636]
Gender: female	0.359***	0.359***	0.359***	0.370***	
	[0.004]	[0.004]	[0.004]	[0.004]	
Education: secondary	1.446***	1.442***	1.446***	1.436***	1.494***
(Ref: no/primary)	[0.018]	[0.018]	[0.018]	[0.019]	[0.025]
Education: higher	2.024***	2.021***	2.025***	2.016***	2.176***
	[0.029]	[0.029]	[0.029]	[0.030]	[0.042]
Poor (<60% median)	0.467***	0.467***	0.468***	0.464***	0.479***
	[0.006]	[0.006]	[0.006]	[0.006]	[0.008]
Age	1.010***	1.010***	1.010***	1.010***	1.010***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
Household size	0.924***	0.924***	0.924***	0.925***	0.930***
	[0.004]	[0.004]	[0.004]	[0.004]	[0.005]
Children aged 0-1	0.530***	0.530***	0.530***	0.525***	0.370***
	[0.006]	[0.006]	[0.006]	[0.006]	[0.006]
Health (scale good-bad)	0.813***	0.813***	0.813***	0.807***	0.846***
	[0.005]	[0.005]	[0.005]	[0.006]	[0.007]
Marital status: married	1.032***	1.032***	1.036***	1.033***	0.856***
	[0.012]	[0.012]	[0.012]	[0.012]	[0.012]
Unemployment rate	0.946***	0.933***	0.955***	0.931***	0.948***
	[0.007]	[0.007]	[0.007]	[0.007]	[0.008]
Old-age dependency ratio	0.990**	0.987***	1.012	0.988**	0.982***
	[0.005]	[0.004]	[0.008]	[0.005]	[0.005]
Social spending	0.965***	0.967***	0.928***	0.970***	0.973***
	[0.008]	[0.007]	[0.011]	[0.008]	[0.009]
Observations	663,924	663,924	663,924	595,456	353,975
Groups (households)	398,157	398,157	398,157	356,949	336,025
Groups (country-years)	258	258	258	233	258
Log-likelihood	-174189	-174173	-174043	-156690	-114025
Variance households	.2839	.2834	.2836	.2881	.7132
Variance country-years	.0755	.0646	.0166	.0607	.0890

Notes: Dependent variable: employed. All models multi-level random intercept logistic regression (with country-years as level 2 and households as level 3 variables), robust standard errors (in parentheses). **** p<0.001, ** p<0.01, * p<0.05*

Table A4.3. Direct effects on poverty of social protection/buffers, active labour market policy (ALMP) and early childhood education and care (ECEC) spending effort

	All working age	Low-educated	Bad health	Unemployed	Parent	Single mother
Social protection spending. effort	-0.041	-0.065**	0.016	-0.038	-0.032	-0.036
	(0.021)	(0.021)	(0.038)	(0.029)	(0.024)	(0.026)
ALMP spending effort	-0.139***	-0.143***	-0.220***	-0.290***	-0.170***	-0.190***
	(0.025)	(0.022)	(0.036)	(0.050)	(0.028)	(0.033)
ECEC spending effort	-0.108***	-0.061**	-0.289***	-0.143***	-0.129***	-0.142***
	(0.025)	(0.024)	(0.037)	(0.043)	(0.028)	(0.030)
Female	0.055***	0.065***	-0.036**	-0.152***	0.117***	
	(0.006)	(0.008)	(0.014)	(0.015)	(0.006)	
Age	-0.001*	-0.003**	0.003**	0.008***	0.001	-0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Children	0.314***	0.347***	0.342***	0.413***	0.262***	0.332***
	(0.013)	(0.013)	(0.023)	(0.019)	(0.015)	(0.021)
Married	-0.345***	-0.354***	-0.339***	-0.319***	-0.295***	
	(0.013)	(0.017)	(0.020)	(0.021)	(0.017)	
Household size	-0.152***	-0.183***	-0.194***	-0.231***	-0.059***	-0.172***
	(0.011)	(0.013)	(0.015)	(0.014)	(0.010)	(0.016)
Education level (category)	-0.517***		-0.412***	-0.371***	-0.586***	-0.503***
	(0.009)		(0.019)	(0.013)	(0.011)	(0.016)
Unemployment rate	0.037***	0.042***	0.014	-0.003	0.046***	0.038***
	(0.006)	(0.006)	(0.010)	(0.008)	(0.007)	(0.008)
Dependency ratio	0.020***	0.013**	0.033***	0.013	0.019***	0.022***
	(0.005)	(0.005)	(0.007)	(0.007)	(0.005)	(0.006)
Lagged poverty	3.269***	3.256***	3.527***	2.786***	3.087***	2.864***
	(0.032)	(0.033)	(0.052)	(0.031)	(0.036)	(0.036)
Constant	-2.759***	-2.993***	-2.994***	-1.452***	-3.125***	-2.509***
	(0.130)	(0.123)	(0.192)	(0.193)	(0.149)	(0.169)
Var(_cons)	0.080***	0.078***	0.196***	0.108***	0.108***	0.119***
	(0.008)	(0.008)	(0.017)	(0.018)	(0.010)	(0.014)
Intra-class correlation coef-ficient	0.022**	0.023**	0.021**	0.022**	0.023**	0.022**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)

Table A4.4. How active labour market policies (ALMP) moderate associations between poverty and social protection/buffers

	All working age	Low-educated	Bad health	Unemployed	Parent	Single mother
Social protection spending effort	-0.040	-0.060**	0.022	-0.033	-0.034	-0.042
	(0.022)	(0.021)	(0.037)	(0.032)	(0.025)	(0.028)
ALMP spending effort	-0.141***	-0.153***	-0.235***	-0.298***	-0.164***	-0.181***
	(0.028)	(0.024)	(0.040)	(0.051)	(0.031)	(0.035)
Social protection XALMP	0.005	0.021	0.031	0.018	-0.014	-0.026
	(0.017)	(0.014)	(0.025)	(0.026)	(0.021)	(0.024)
ECEC spending effort	-0.109***	-0.067**	-0.298***	-0.147***	-0.125***	-0.136***
	(0.026)	(0.024)	(0.037)	(0.044)	(0.029)	(0.030)
Female	0.055***	0.065***	-0.036**	-0.152***	0.117***	
	(0.006)	(0.008)	(0.014)	(0.015)	(0.006)	
Age	-0.001*	-0.003**	0.003**	0.008***	0.001	-0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Children	0.314***	0.347***	0.342***	0.413***	0.262***	0.332***
	(0.013)	(0.013)	(0.023)	(0.019)	(0.015)	(0.021)
Married	-0.345***	-0.354***	-0.339***	-0.319***	-0.295***	
	(0.013)	(0.017)	(0.020)	(0.021)	(0.017)	
Household size	-0.153***	-0.183***	-0.194***	-0.231***	-0.059***	-0.172***
	(0.011)	(0.013)	(0.015)	(0.014)	(0.010)	(0.016)
Education level (category)	-0.517***		-0.412***	-0.371***	-0.586***	-0.503***
	(0.009)		(0.019)	(0.013)	(0.011)	(0.016)
Unemployment rate	0.036***	0.041***	0.011	-0.004	0.047***	0.039***
	(0.006)	(0.007)	(0.010)	(0.008)	(0.007)	(0.007)
Dependency ratio	0.020***	0.013**	0.032***	0.012	0.019***	0.022***
	(0.005)	(0.005)	(0.007)	(0.007)	(0.005)	(0.006)
Lagged poverty	3.269***	3.256***	3.527***	2.786***	3.087***	2.864***
	(0.032)	(0.033)	(0.052)	(0.031)	(0.036)	(0.036)
Constant	-2.756***	-2.981***	-2.975***	-1.444***	-3.133***	-2.523***
	(0.129)	(0.125)	(0.191)	(0.190)	(0.148)	(0.168)
Var(cluster)	0.080***	0.078***	0.195***	0.108***	0.108***	0.118***
	(0.008)	(0.008)	(0.017)	(0.018)	(0.010)	(0.014)
Intra-class correlation coefficient	0.021**	0.023**	0.023**	0.020**	0.022**	0.021**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
N	1927697	890631	384185	147271	817992	150968

Notes: Dependent variable: poverty in household income. All models multi-level random intercept logistic regression, with country-years as level 2 variable, robust standard errors (in parentheses). *** p<0.001, ** p<0.01, * p<0.05.

Table A4.5. How early childhood education and care (ECEC) moderate associations between poverty and social protection/buffers

	All working age	Low-educated	Bad health	Unemployed	Parent	Single mother
Social protection spending effort	-0.049*	-0.071***	0.011	-0.043	-0.041	-0.048
	(0.021)	(0.021)	(0.038)	(0.031)	(0.024)	(0.026)
ECEC spending effort	-0.087**	-0.045	-0.271***	-0.132**	-0.105***	-0.117***
	(0.027)	(0.025)	(0.039)	(0.045)	(0.029)	(0.031)
Social protection X ECEC	-0.065***	-0.053**	-0.063*	-0.034	-0.077***	-0.089***
	(0.019)	(0.018)	(0.031)	(0.023)	(0.020)	(0.023)
ALMP spending effort	-0.116***	-0.125***	-0.197***	-0.280***	-0.144***	-0.164***
	(0.027)	(0.024)	(0.041)	(0.051)	(0.030)	(0.034)
Female	0.055***	0.065***	-0.036**	-0.152***	0.117***	
	(0.006)	(0.007)	(0.014)	(0.015)	(0.006)	
Age	-0.001*	-0.003**	0.003**	0.008***	0.001	-0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Children	0.314***	0.347***	0.342***	0.413***	0.262***	0.331***
	(0.013)	(0.013)	(0.023)	(0.019)	(0.015)	(0.021)
Married	-0.345***	-0.354***	-0.340***	-0.319***	-0.295***	
	(0.013)	(0.017)	(0.020)	(0.021)	(0.017)	
Household size	-0.152***	-0.183***	-0.193***	-0.231***	-0.059***	-0.171***
	(0.011)	(0.013)	(0.015)	(0.013)	(0.010)	(0.016)
Education level (category)	-0.517***		-0.412***	-0.371***	-0.585***	-0.503***
	(0.009)		(0.019)	(0.013)	(0.011)	(0.016)
Unemployment rate	0.039***	0.044***	0.016	-0.002	0.048***	0.040***
	(0.006)	(0.006)	(0.010)	(0.008)	(0.007)	(0.007)
Dependency ratio	0.023***	0.016**	0.036***	0.014*	0.022***	0.025***
	(0.005)	(0.005)	(0.007)	(0.007)	(0.006)	(0.006)
Lagged poverty	3.269***	3.256***	3.527***	2.786***	3.087***	2.864***
	(0.032)	(0.033)	(0.052)	(0.031)	(0.036)	(0.036)
Constant	-2.821***	-3.040***	-3.047***	-1.474***	-3.196***	-2.582***
	(0.130)	(0.123)	(0.193)	(0.194)	(0.150)	(0.168)
var(_cons)	0.077***	0.076***	0.194***	0.107***	0.104***	0.114***
	(0.008)	(0.008)	(0.017)	(0.018)	(0.010)	(0.013)
Intra-class correlation coefficient	0.022**	0.023**	0.021**	0.022**	0.023**	0.022**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
N	1 927 697	890 631	384 185	147 271	817 992	150 968

Notes: Dependent variable: poverty in household income. All models multi-level random intercept logistic regression, with country-years as level 2 variable, robust standard errors (in parentheses). *** p<0.001, ** p<0.01, * p<0.05

Figure A4.1. Predicted probability of employment for total working-age population with children for active labour market policy (ALMP) effects by early childhood education and care (ECEC) spending level (left-hand panel) and for ECEC effects by ALMP spending level (right-hand panel)

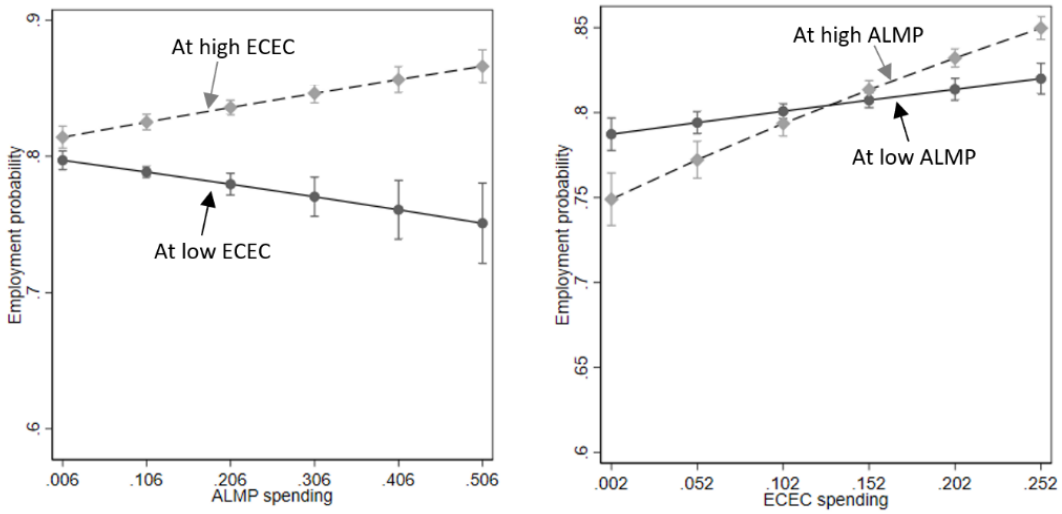

Table A5.1. Results for policy impacts on poverty risk across age groups in Figure 5.3 (odds ratios of logistic regression models)

	Unemployment benefit	Early childhood education and care	Adult education
Unemployment benefit (UB) (>2yrs, reversed)	1.154** (0.052)	1.063* (0.028)	1.065* (0.028)
Early childhood education and care (ECEC) (participation rate)	0.953* (0.020)	1.010 (0.040)	0.954* (0.020)
Adult education (AE) (participation rate)	0.923 (0.054)	0.923 (0.054)	1.044 (0.074)
Working age	2.192*** (0.179)	1.956*** (0.131)	1.933*** (0.128)
Older	1.654*** (0.159)	1.562*** (0.122)	1.538*** (0.119)
Women	1.432*** (0.108)	1.306*** (0.079)	1.290*** (0.078)
Children <18 in the household (hh)	1.051 (0.038)	1.049 (0.038)	1.053 (0.038)
Working age # Women	0.445*** (0.043)	0.493*** (0.039)	0.496*** (0.038)
Older # Women	0.551*** (0.063)	0.593*** (0.054)	0.599*** (0.054)
Working age # UB	0.889* (0.044)		
Older # UB	0.940 (0.052)		
Women # UB	0.908 (0.047)		
Working age # Women # UB	1.114 (0.072)		
Older # Women # UB	1.081 (0.080)		
Working age # ECEC		0.910* (0.043)	
Older # ECEC		0.979 (0.052)	
Women # ECEC		0.928 (0.046)	
Working age # Women # ECEC		1.089 (0.068)	
Older # Women # ECEC		1.062 (0.077)	
Working age # AE			0.861** (0.047)
Older # AE			0.886* (0.052)
Women # AE			0.881* (0.050)
Working age # Women # AE			1.122 (0.080)
Older # Women # AE			1.105 (0.087)
Observations	275 879	275 879	275 879

Notes: All models control for educational attainment, labour market status, GDP, immigrant status, east/west, parenthood and partnership status. Exponentiated coefficients; Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A5.2. Results for policy impacts on poverty risk across different family groups in Figure 5.5 (odds ratios of logistic regression models, only women)

	Unemployment benefit	Early childhood education and care	Adult education
Unemployment benefit (UB) (>2yrs, reversed)	1.143** (0.051)	1.085* (0.039)	1.085* (0.039)
Early childhood education and care (ECEC) (participation rate)	0.970 (0.027)	1.023 (0.041)	0.970 (0.027)
Adult education (AE) (participation rate)	0.870 (0.067)	0.869 (0.067)	0.911 (0.075)
Children <18 in the household (hh)	1.207** (0.088)	1.053 (0.059)	1.044 (0.058)
Partnered	0.205*** (0.017)	0.205*** (0.017)	0.205*** (0.017)
Partnered # Children <18 in the hh	0.625*** (0.065)	0.727*** (0.061)	0.730*** (0.060)
Partnered # UB (>2yrs, rev)	0.947 (0.046)		
Children <18 in the hh # UB (>2yrs, rev)	0.872** (0.041)		
Partnered # Children <18 in the hh # UB	1.153* (0.077)		
Partnered # ECEC		0.928 (0.045)	
Children <18 in the hh # ECEC		0.872** (0.042)	
Partnered # Children <18 in the hh # ECEC		1.186* (0.080)	
Partnered # AE			0.960 (0.050)
Children <18 in the hh # AE			0.865** (0.043)
Partnered # Children <18 in the hh # AE			1.178* (0.084)
Observations	147 617	147 617	147 617

Notes: All models control for educational attainment, labour market status, GDP, immigrant status, east/west, age and age squared. Exponentiated coefficients; Standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A5.3. Results for policy complementarities across unemployment benefit (UB) and early childhood education and care (ECEC) and adult education (AE) in Figure 5.6 (odds ratios of logistic regression models)

	UB - ECEC		UB - AE	
	Men	Women	Men	Women
Unemployment benefit (UB) (>2yrs, reversed)	1.097* (0.043)	1.175*** (0.037)	0.991 (0.051)	0.973 (0.041)
ECEC (participation rate)	0.923* (0.030)	0.912** (0.026)		
UB # ECEC	1.056* (0.029)	1.102*** (0.025)		
Adult education (AE) participation rate			0.872** (0.038)	0.794*** (0.029)
UB # AE			0.976 (0.034)	1.004 (0.027)
Observations	128 262	147 617	128 262	147 617

Notes: All models control for educational attainment, labour market status, GDP, immigrant status, east/west, parenthood, partnership status, age and age squared. Exponentiated coefficients; Standard errors in parentheses.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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