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No activation without reconciliation?

The interplay between ALMP and ECEC in relation to women's employment, unemployment and inactivity in 30 OECD countries, 1985–2018

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The interplay between ALMP and ECEC in relation to women's employment, unemployment and inactivity in 30 OECD countries, 1985-2018

by

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Abstract

Comparative welfare state research has mostly examined the outcomes of active labour market policies and work-family reconciliation policies separately. As a result, potential complementarities between these policy areas have received scant attention empirically. Using macro-level data, this study answers the question to what extent, and in which way, governments' efforts in active labour market policies (ALMP) and in early childhood education and care (ECEC) services are correlated with women's employment rates, women's unemployment and inactivity rates in 30 OECD countries from 1985 to 2018. The article theorizes about how the various policies that constitute a welfare state relate to each other, distinguishing between pluralism, complementarity and substitutability. I interpret the empirical findings as being consistent with welfare pluralism, in the sense that ALMP and ECEC policies work together in improving women's employment rates in slightly different ways: ALMP is associated with low female unemployment rates, whereas ECEC also is associated with lower inactivity rates for women. There was, however, more support for the notion of substitution rather than complementarity: the marginal benefits associated with an increase in either ALMP or ECEC were smaller in the context of large investments in the other policy. In other words, the highest rates of women's employment, and the lowest rates of unemployment and inactivity, are found in countries with large investments in both ALMP and ECEC, but such higher investments are associated with diminishing returns.

Keywords: ALMP, ECEC, women's employment, substitution, complementarity, pluralism
JEL-codes: Z18, J16, J21

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1 Background and Research Question

Welfare states comprise a multitude of policies that potentially work in conjunction, or against each other, yet the comparative welfare state literature predominantly analyses different policy areas in isolation. As a result, little is known about potential complementarities between multiple social policies, even though these are often assumed to exist. This study explicitly analyses the potential interplay between active labour market policies (ALMP) and early childhood education and care (ECEC) services, two policy areas that have gained prominence with the shift towards a more active welfare state over the last decades – in particular in wealthy countries in the OECD (Organisation for Economic Cooperation and Development), and that have been studied extensively in their own right – but not together.

The shift from 'passive' to 'active' modes of operation was observed across multiple policy areas, and in welfare states across the OECD. Described using different terms that include the 'Third Way', the 'turn towards activation' (Bonoli, 2013) and the social investment perspective (Morel et al., 2012), this change includes active labour market policies such as employment assistance, training and employment incentives / direct job creation (Bonoli, 2013) and work-family reconciliation policies such as early childhood education and care (ECEC), as well as paid parental leave (Nieuwenhuis, Need, et al., 2012; Nieuwenhuis & Van Lancker, 2020; Pettit & Hook, 2009). The shift to a more 'active' logic of welfare provision was motivated by common perceptions about new social risks, and combating of poverty while maintaining sustainable levels of public expenditure (but, see: Jenkins, 2020; Vandenbroucke & Vleminckx, 2011), all the while fostering competitive economies and high rates of economic growth. However, although there is an abundant literature on the effectiveness of both active labour market policies and work-family reconciliation policies, it remains largely unknown whether there actually are synergies or complementarities between these policy areas.

In part, potential synergies between active labour market policies and work-family reconciliation policies have received little attention in relation to research designs that focus on the implementation of specific programs or interventions. Particularly with respect to active labour market policies, a strong micro-econometric tradition exists evaluating the outcomes of specific labour market programs (Card et al., 2018; Kluve, 2010; Kluve & Schmidt, 2002). Numerous specific programs were evaluated by comparing the employment outcomes of participants to a control group - often by random assignment of participants to treatment or control groups. These studies typically indicate that ALMP are successful in reducing unemployment, although differences exist between the levels of effectiveness among the different programs. Card, Kluve & Weber (2010) presented a meta-analysis of 199 program evaluations, concluding that job-search assistance programs were effective in combating

unemployment, that training was only effective on the medium-term, and that public creation of jobs did not reduce unemployment. This meta-analysis showed differences across countries in program effectiveness, but did not test explanations for such cross-national variation.

There is a vast sociological and econometric literature on the impact of national-level ECEC policy on (aspects of) women's employment, as will be outlined below. Yet, there seem to be fewer micro-econometric evaluations of the effect of public provision of specific programs for early childhood education and care (ECEC) on women's or men's labour force participation, although there are evaluations - and meta-analyses thereof - of the impact of ECEC on children's outcomes (Egert et al., 2018; Van Huizen & Plantenga, 2018).

These micro-econometric evaluations have typically focused on single programs, in single countries, and cover a relatively short period of time. While this allowed to achieve a high level of detail in measurement, sometimes randomization, and in precise identification of causal effects, two limitations arise from this specificity in time and place. First, these micro-econometric evaluations were unable to observe the consequences of cross-national variation in how extensively different policies or programs (ALMP or ECEC) were used, nor the consequences of the 'turn towards activation'. Secondly, partly in relation to the efforts to rule out confounding factors, program-based evaluations are limited in the degree to which they can demonstrate the potential interplay with other aspects of the national institutional context.

The first limitation has been addressed in the country-comparative literature on outcomes of ALMP and work-family reconciliation policies. Such comparative studies complement micro-econometric evaluations, even though their designs cannot identify causal effects in the same sense as randomised, micro-econometric evaluations. Bradley and Stephens (2007) found that expenditure on ALMP in 17 "advanced capitalist democracies" (p. 1486) from 1974 to 1999 was positively associated with higher employment rates. Covering 11 European countries, Engelhardt (2012) found that higher ALMP expenditure was negatively associated with individuals' transition into inactivity. Estevão (2007), and Bruno and Rovelli (2010), found ALMP expenditure to be positively associated with employment rates in panels of 15 and 25 countries, respectively. With respect to work-family reconciliation policies, the country-comparative literature is possibly (even) more expansive. The expansion of paid parental leave and early childhood education and care services (ECEC) has been found effective in promoting women's employment (Olivetti & Petrongolo, 2017). Availability of public childcare (/ECEC) services in a country was found associated with higher employment rates among women in these countries (Nieuwenhuis et al., 2019; Pettit & Hook, 2009), less occupational segregation (Korpi et al., 2013), smaller gender employment gaps in full-time, high-skilled jobs (Kang, 2021), as well as smaller motherhood-wage penalties across skill levels (Cukrowska-

Torzewska, 2017; Halldén et al., 2016). While parental leave was also found to be associated with higher rates of women's employment (Adema et al., 2016, 2020), the impact of ECEC was found to be more substantial (Olivetti & Petrongolo, 2017). In particular ECEC that is available, affordable, and of adequate quality (the 'childcare triangle') was found to increase its effectiveness and to equalize its benefits (Gambaro et al., 2015; Sirén et al., 2020; Van Lancker, 2018). Yet, in contexts with very high rates of women's employment, further increases in ECEC availability and reductions in costs were found associated with diminishing returns (Akgunduz & Plantenga, 2018; Havnes & Mogstad, 2011; Lundin et al., 2008).

Generally, the findings of these country-comparative studies are in line with those from the micro-econometric evaluations, and add the insight that cross-national variation in the extent to which active labour market policies and work-family reconciliation policies are used relates to country-level rates of (un)employment. The few studies that cross-nationally examined potential synergies in the areas of active labour market policies or work-family reconciliation policies are examples of 'systematic complementarities': such studies provide an indication of how much the outcomes of a specific policy vary by the overall context, but do not explicitly examine the interplay between two (or more) policies (Bassanini & Duval, 2009). For instance, public provision of childcare policies was found to be more effective in the context of a regime that is generally more supportive to women's employment (Thévenon, 2016). Better paid parental leave policies were more effective in reducing gender employment gaps in countries with a coordinated (rather than liberal) market economy (Kang, 2021). Examining the interplay between different active labour market policies, Fredriksson (2020) finds that job creation and on-the-job training are more effective in promoting employment in countries that heavily invest in the public employment services. In the literature on family policy outcomes, a prominent example of how different work-family reconciliation policies fail to align is that many countries have a gap between the end of (well paid) parental leave and the beginning of ECEC entitlements (Blum et al., 2018). Paid parental leave (if not overly long) was found associated with reduced employment- and wage gaps associated with motherhood, *particularly* in countries that also provided extensive childcare services (Cukrowska-Torzewska, 2017).

In sum, although country-comparative research has studied extensively how the turn towards active social policy has brought about various outcomes, two key areas of active labour market policies and work-family reconciliation policies have by and large been studied separately. Potential complementarity between these areas of policy making in bringing about employment outcomes at the national level, has therefore received scant attention empirically. The purpose of this study is to examine the possible complementarity between active labour market policies (ALMP) and early childhood education and care (ECEC) across OECD countries over a long

period of time. Because ECEC, at least traditionally, has mostly been relevant for maternal employment, the focus is here on women's economic activity, examining women's employment, unemployment and inactivity rates. This study answers the question: To what extent, and in which way, are active labour market policies (ALMP) and early childhood education and care (ECEC) services complementary to each other in promoting women's employment rates and reducing women's unemployment and inactivity rates in 30 OECD countries from 1985 to 2018? The research design is of a correlational nature, and no causal claims are made.

Answering this question makes a threefold contribution. First, testing the often-made, but seldomly empirically examined, assumption about complementarity in the relevant context of welfare states' turn to active provision of welfare – across multiple areas of policy. Naturally a single study cannot address all possible complementarities between two areas of policy. Yet, by focusing on ALMP and ECEC, policy areas that are central to many policy makers are included in this analysis. Second, this study theorises about three ways in which different social policies can relate to each other. Thirdly, this study brings together insights from scholarly fields that have largely been treated separately, at least in the comparative welfare state literature, in particular the study of labour market policies involved in outcomes related to (un)employment, and the study of family policies largely focused on outcomes related to gender (in)equality.

The next section discusses theoretical perspectives and formulates hypotheses on the interplay between ALMP and ECEC. This is followed by a discussion of the data and methods used, and the results of the analyses. The final section concludes and discusses the broader implications of the findings.

2 Theory and hypotheses

This section theorizes about how the various policies that constitute a welfare state relate to each other, distinguishing between pluralism, complementarity and substitutability. In its most straightforward form, the various policies that make up a welfare state each independently contribute part of the total outcomes associated with that welfare state, even though the different policies do not affect the level of effectiveness of other policies. This relates to what Dahlberg (2005) refers to as 'welfare pluralism'. Examples can be found in classic typologies of welfare state regimes, each of which is based on how a number of different policies work together towards a common goal.

Examining how welfare states organised redistribution and the protection against income loss, Esping-Andersen (1990) classified differences in how, and to what extent, welfare states achieved decommodification; that is, provided social rights that ensured that individuals could

"*maintain a livelihood without reliance on the market*" (p. 22). Simply put, whereas liberal welfare state regimes applied rigorous means testing of benefits, conservative regimes had occupational-specific programs, and social-democratic regimes showed higher degrees of universalism (also see: Korpi & Palme, 1998). Related to historical legacies, the same principles were reflected in a range of policies within regimes, including minimum income protection, unemployment benefits, sickness pay and pension schemes. In contrast to the active labour market policies that will be detailed below, these decommodification policies are typically considered a passive form of social policy.

When it comes to the area of family policies, Lister (1994, p.29) defined defamilization as the way in which institutional arrangements change the "terms and conditions under which people engage in familial or caring arrangements" (also see: McLaughlin & Glendinning, 1994). Lewis (1992) distinguished between regimes based on a combination of policies that serve a similar purpose related to unpaid work. Empirically applied, Korpi (2000) distinguishes between "ideal typical models of gendered welfare state institutions" (p. 144) that represent different goals, either to provide 'general family support' or 'dual-earner support' (in addition to the laissez-faire market-oriented model). Countries seeking to support dual-earner families tend to have a combination of policies in place to do so, including public childcare for the youngest children, paid maternity and paternity leave, and public homes for the elderly (Korpi, 2000, p. 146). General family support takes shape by public provisions of cash child allowances, family tax benefits and public childcare only for somewhat older children (Korpi, 2000, p. 145).

The examples above illustrate welfare pluralism, as the different policies are thought to contribute to a common outcome, but any interplay between the policies themselves is not explicitly analysed. The notion of coordination between different policy areas is developed prominently in the varieties of capitalism (VoC) approach (Hall & Soskice, 2001). The VoC approach distinguishes between coordinated market economies (CME) and liberal market economies (LME) based on how labour market policies and educational systems are coordinated differently. The VoC approach applies more broadly to the question how welfare state outcomes are shaped by the interplay between different policies, and distinguishes between 'complementarity' and 'substitutability'. Two policies are considered complementary when the presence of one improves the effectiveness of another (also see: Höpner, 2005). Substitutability, on the other hand, refers to a policy being less effective in the presence of a different policy. Complementarity received more attention in the VoC literature, based on the assumption that if different policies are well-coordinated, this provides competitive advantage by increasing the effectiveness across different areas (Hall & Gingerich, 2004).

While the three welfare state typologies outlined above each relate only to one (broad) area of policy making, they have provided important insights in the different ways policies can relate to each other. In the remainder of this section, hypotheses are formulated on how active labour market policies and work-family reconciliation policies relate to each other through welfare pluralism, complementarity and substitutability.

Active labour market policies (ALMP) as well as early childhood education and care (ECEC) represent important parts of the shift towards a more active welfare state, that seeks to address so-called new social risks that include lack of continuous careers, low or obsolete skills, and well as reconciling work and family life.

ALMP form an attempt to "harness rational individual choice expressed in carefully designed quasi-market and target-driven welfare institutions to achieve cost-efficient and responsive services" (Taylor-Gooby, 2008, p. 182). ALMP attempt to alter incentives making unemployment less attractive and employment more attractive, and to remove obstacles for employment by providing training to the unemployed, providing job-search assistance through public employment services, and by supporting the creation of jobs (Bonoli, 2013). This is done through a number of different types of ALMP programs (Fredriksson, 2020b). Public employment services improve matching (through case-workers) between the unemployed and potential job opportunities (Hägglund, 2014), employment incentives often take the form of wage subsidies that facilitate employers to cover wage costs to hire more workers (Martin & Swank, 2004), and training programs invest in vocational skills among the unemployed to increase their employability (Abrassart, 2015). Although some European countries have ALMP programs aimed at the inactive at the periphery of the labour market, most ALMP programs are aimed at the (registered) unemployed (Fredriksson, 2020a). Although not specifically aimed at women's employment – or at addressing barriers to employment that are disproportionally experienced by women (Caliendo & Künn, 2015) – it is expected that ALMP facilitate the large share of women who are active in the labour market, and thus reduce unemployment and increase employment.

Work-family reconciliation policies, on the other hand, seek to address one of the most important determinants of particularly women's economic inactivity. The most important explanation of women's (non-)employment was found to be that having children reduced women's opportunities for employment (Van der Lippe & Van Dijk, 2001). Parental leave allows young parents (and, in most countries mostly mothers) to combine work and family sequentially, while early childhood education and care (ECEC) services provide the opportunity to combine work and family responsibilities concurrently (Gornick & Meyers, 2003; Nieuwenhuis, Need & Van der Kolk, 2012; Pettit & Hook, 2009). As a result, the absence of

work-family reconciliation policies may make it less likely that women are employed, to an important degree because they are economically inactive: neither employed nor actively looking for employment. It is thus expected that work-family reconciliation policies are associated with higher rates of women's employment, and lower inactivity rates. As parental leave rights are strongly tight to previous work history, they are less relevant for the inactive and unemployed who are targeted by active labour market programs – therefore for this article's purpose of analysing the interplay between ALMP and work-family reconciliation policies we focus on ECEC services.

The interplay between ALMP and ECEC can take three different forms, as outlined above: pluralism, complementarity and substitution. With respect to *welfare pluralism*, active labour market policies and work-family reconciliation policies can be considered to address barriers to employment experienced by different groups. In this line of reasoning, ALMP address mismatches between job-seekers and vacancies (public employment services, training) and the lack of vacancies (employment incentives that include wage subsidies). ECEC services, on the other hand, address motherhood as a key barrier to women's employment, with ECEC allowing parents to combine work and family responsibilities. Because these policies (at least to some extent) address different groups, both can be related to higher employment rates irrespective of the other. Empirically, this would be observed as average marginal effects while ALMP and ECEC are controlled for each other.

Welfare Pluralism Hypothesis: Increases in governments' expenditure on ALMP and ECEC policies were associated with higher employment among women in OECD countries from 1985 to 2018, independently from each other. Yet, ALMP are more strongly associated with lower unemployment and ECEC with lower inactivity rates.

Although this hypothesis, and the two that follow, are formulated in terms of "active labour market policies", they are expected to hold – and will be tested – specifically for measures to increase employment incentives, training, and public employment services on the one hand – as well as overall public expenditure on active labour market policies. However, as the empirical and theoretical argumentation on whether they relate in different ways to employment and inactivity is limited and ambiguous (Abrassart, 2015; Boone & van Ours, 2009) – let alone with respect to possible interplay between ALMP and other aspects of institutional context such as work-family reconciliation policies. As such, these programs will be distinguished between empirically, but no program-specific hypotheses will be formulated.

From the perspective of *complementarity*, it can be argued that the outcomes of active labour market policies are partially conditional on the availability of work-family policies – and vice versa. If ALMP reduce some barriers for employment this may be less effective if other barriers remain, such as conflicting family responsibilities that are disproportionally experienced by women. When it comes to women's employment, and in particular mothers' employment, active labour market policies such as training, employment incentives, or support from the employment office may be less effective in the absence of measures that facilitate the combination of work and family. Conversely, of course, the contribution of reconciliation policies that address motherhood as a barrier to employment can be expected to be lower in a context with a lack of jobs or a mismatch between (women's) skills and vacancies. Empirically, this would be observed as a positive interaction between ALMP and ECEC.

Complementarity Hypothesis: Increases in governments' expenditure on ALMP are associated with larger increases in women's employment in contexts characterized by *greater* expenditure on ECEC (and vice versa), across OECD countries from 1985 to 2018.

Substitution, finally, has received substantially less attention in the comparative welfare state literature, but should be considered here as well. Substitution suggests that to the extent that two policies serve a similar purpose, having either policy in place suffices to achieve that purpose. For instance, if high rates of women's employment are already achieved by means of early childhood education and care policies, diminished returns might be expected in association with an increase in active labour market policies. Conversely, if for instance public employment services guide unemployed parents (and, in particular, mothers) to jobs in the public sector, or to part-time jobs (Haapanala, 2021), that are easier to combine with family responsibilities, an increase in the availability of work-family reconciliation policies might be associated with a smaller increase in women's employment. Empirically, this would be observed as a negative interaction between ALMP and ECEC.

Substitution Hypothesis: Increases in governments' expenditure on ALMP are associated with larger increases in women's employment in contexts characterized by *lesser* expenditure on ECEC (and vice versa), across OECD countries from 1985 to 2018.

3 Data and Method

The goal of the analyses is to test the three hypotheses on pluralism, complementarity and substitution between ALMP and ECEC, and to do so across a large number of countries over a longer period of time. As such, this study is based on data from OECD countries for which longer time-periods of data are available. This section introduces the data and analytical strategy, and discusses the trade-offs involved with the large-scale comparative approach.

3.1 Data and variables

The main analyses are based on macro-level data from the OECD Statistics Database, obtained from various tables detailed below. All data were downloaded through the OECD package (Persson, 2019) in R (R Core Team, 2020) to ensure reproducibility. In total, the dataset comprises 597 country-years between 1985 and 2018, and the 30 countries included in the analyses are Australia, Austria, Belgium, Canada, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Israel, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Slovakia, Slovenia, Sweden, Switzerland, Portugal, the United Kingdom, and the United States. All variables are measured annually at the country-level, and are thus time-varying.

This section will first outline the main dependent and independent variables, followed by the empirical strategy. After that, a range of sensitivity tests are introduced, including the additional variables used therein.

The key dependent variables indicate women's employment, unemployment, and inactivity rates. These were obtained from the "LFS by Sex and Age" [LFS_D] table in OECD.stat[1], and focus on women in typical childbearing ages. *Women's employment* indicates the percentage of all women aged 25-44 who are employed. *Women's unemployment* is defined as the percentage of unemployed women (who are out of a job and actively looking for a new job) as a percentage of all women in the labour force (aged 25-44). *Women's inactivity* is defined as the percentage of all women (aged 25-44) who are out of the labour market (that is, neither employed nor unemployed and actively looking for employment).

Indicators on active labour market policies were obtained from the "Public expenditure and participant stocks on Labour Market Policies" [LMPEXP] table in OECD.stat.[2] The extent to which governments' labour market programs can be considered 'active' is measured as the public expenditure on *active labour market programs* as a proportion of total expenditure on both active- and passive labour market programs (examples of passive programs include social

[1] This table can also be accessed directly online: https://stats.oecd.org/Index.aspx?DataSetCode=LFS_D
[2] This table can also be accessed directly online: https://stats.oecd.org/Index.aspx?DataSetCode=LMPEXP

assistance, unemployment insurance and early retirement). As such, the measure intends to capture the turn towards more active policy provision. Furthermore, using the same calculation, the measure on active expenditure is differentiated to *public employment services*, *employment incentives*, *training programs*, and *public job creation*. From the "Family database" [FAMILY] table in OECD.stat[3], *Early childhood education and care (ECEC)* is measured as public expenditure on ECEC as a percentage of GDP.

The challenges of using expenditure-related policy measures have been well documented, both in the area of labour market policies and of work-family reconciliation policies (Clasen & Siegel, 2007; Sirén et al., 2020). These challenges include that such measures cannot differentiate between coverage, eligibility, and (non-)take-up (Nelson & Nieuwenhuis, 2021), and do not necessarily represent individual entitlements. Yet, to be able to cover many countries of long periods of time, these are the best measures available, and for that reason are commonly used in comparative welfare state research (Fredriksson, 2020b). To better approximate individual entitlements, the expenditure on ALMP is divided by the unemployment rate (among both women and men) and the expenditure on ECEC is divided by the total fertility rate (as an indication of the share of very young children in society). It will further be examined here whether the associations between the policy indicators and outcome measures are in line with commonly reported findings before examining the interactions to test the hypotheses.

A number of control variables were used. In a few cases, the number of observations in these controlled models are restricted due to data limitations. This is indicated with the respective models. Most importantly, the models for women's employment, unemployment and inactivity rates will respectively be controlled for *men's employment, unemployment and inactivity* (as percentages). The aim of these controls is to account for all unobserved factors (that can vary between countries and over time) that equally affect both women's and men's employment / unemployment / inactivity.

Next, two structural factors known to have greatly affected (trends in) women's employment are controlled for: fertility and the size of the service sector (Nieuwenhuis, Need, et al., 2012). The *total fertility rate* was obtained from the [FAMILY] table in OECD.stat, and the size of the *service sector* (as percentage of all employment) from the Annual Labour Force Statistics Summary [ALFS_SUMTAB] table[4].

Finally, two policies also known to be relevant for women's employment are accounted for: Cash benefits to families with children, typically associated with the traditional breadwinner model, tend to be a disincentive for women's employment (Korpi et al., 2013; Nieuwenhuis et

[3] This table can also be accessed directly online: https://stats.oecd.org/Index.aspx?DataSetCode=FAMILY
[4] This table can also be accessed directly online: https://stats.oecd.org/Index.aspx?DataSetCode=ALFS_SUMTAB

al., 2019; Thévenon, 2011). The total public social expenditure on *cash benefits* for families with children as a % of GDP was obtained from the [FAMILY] table in the OECD.stat. The duration of *parental leave*, finally, and is measured as the total length (measured in weeks) of paid maternity and parental leave available to mothers. This indicator was also obtained from the [FAMILY] table. Whereas paid parental leave can be associated with higher rates of women's employment, longer durations have also been identified as a mechanism of exclusion (Nieuwenhuis et al., 2017; Pettit & Hook, 2009). The indicator for duration of paid parental leave was therefore recoded into 'short' (0.5 standard deviation or more below the average duration), 'medium', and 'long' (0.5 standard deviation or more above the average duration).

Table 1 provides descriptive statistics on all variables (prior to standardization), including the number of valid observations, the mean and distributional measures. Table 2 lists the countries included in the analyses, including the first and last year in which each country was observed.

Table 1 Descriptive Statistics (before standardization)

	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Core variables							
Women's Employment	597	0.724	0.067	0.437	0.687	0.772	0.863
Women's Unemployment	597	0.076	0.042	0.016	0.049	0.093	0.301
Women's Inactivity	597	0.216	0.063	0.091	0.169	0.251	0.428
ECEC	597	0.771	0.432	0.000	0.501	1.020	2.929
ALMP	597	7.271	4.944	0.575	3.721	9.645	38.106
Public Employment Service	597	1.982	2.018	0.037	0.750	2.377	15.374
Training	597	1.935	1.903	0.056	0.692	2.555	14.944
Employment Incentives	597	1.159	1.236	0.034	0.341	1.399	6.600
Control variables							
Men's Employment	597	0.869	0.040	0.702	0.849	0.895	0.954
Men't Unemployment	597	0.065	0.035	0.010	0.042	0.078	0.249
Men's Inactivity	597	0.071	0.022	0.024	0.057	0.083	0.139
Service Sector	511	70.033	7.960	50.426	64.606	76.244	90.343
Total Fertility Rate	597	1.648	0.323	0.980	1.410	1.840	3.110
Cash Benefits	435	1.382	0.640	0.030	0.930	1.780	3.550
Paid leave (categorical):							
Short	578	.43		0			1
Medium (reference)	578	.33		0			1
Long	578	.23		0			1

Table 2 Time-coverage by country

Country	First Year	Last Year
Australia	1985	2017
Austria	1995	2017
Belgium	1995	2017
Canada	1992	2018
Czechia	1995	2017
Denmark	1995	2017
Estonia	2005	2017
Finland	1985	2017
France	1985	2018
Germany	1995	2017
Greece	1995	1997
Hungary	1999	2018
Ireland	1995	2017
Israel	2005	2018
Italy	2004	2015
Japan	2008	2017
Korea	2008	2018
Luxembourg	1995	2017
Netherlands	1998	2017
New Zealand	1986	2018
Norway	1995	2017
Poland	1995	2017
Portugal	1995	2017
Slovakia	1997	2017
Slovenia	2005	2017
Spain	1995	2017
Sweden	1995	2017
Switzerland	1995	2018
United Kingdom	1996	2011
United States of America	1994	2018

3.2 Analytical strategy

A number of OLS regression models were estimated, with different combinations of outcome measures, policy indicators and (multiplicative) interactions between active labour market policies and ECEC policies. As motivated in the introduction of this study, the focus here is to capture broad associations, across countries and over time, between different policies and outcomes related to women's employment – and in particular their interplay. Although the number of countries in this study is conventional in comparative research, the number of country-level (control) variables that can be included needs to be limited. Instead, unobserved time-invariant heterogeneity is accounted for using country-fixed effects, and unobserved trends/fluctuations over time (common to all countries) are accounted for using time-fixed effects. Nevertheless, the design is of a correlational nature, and no causal claims are made.

All variables are standardized (to a mean of 0 and standard deviation of 1) to facilitate the interpretation of in particular the interactions. Expenditure on ALMP was top-coded at 4 standard deviations to reduce potential outliers. Because there are no non-linearities in these models, the (standardized) coefficients of the main effects can be interpreted as average marginal effects – while still on the same scale as the multiplicative interaction terms. All presented 95% confidence intervals are based on bootstraps with 1000 replications to allow for asymmetric confidence intervals. Additionally, the main model will be presented with panel corrected standard errors (Bailey & Katz, 2011).

As the numbers of countries and years on which the analyses are based are relatively small, the possibility in comparative research like this is that the observations of a single country (or year) are influential cases (Nieuwenhuis, Te Grotenhuis & Pelzer, 2012; Van der Meer et al., 2010). Therefore, as a final sensitivity test, the main model will be re-estimated while iteratively removing all observations from a single country, and from a single year, at a time.

4 Results

Table 3 presents the first test of the hypotheses, using different sets of fixed effects. The first model simply presents the correlation between women's employment on the one hand, and active labour market policies (ALMP) and early childhood education and care (ECEC) on the other. The results are consistent with those reported throughout the literature: ALMP and ECEC are associated with higher rates of women's employment. Accounting for unobserved heterogeneity at the level of countries (model 2), years (model 3), or both (model 4) produces smaller associations, but the main findings remain the same. Finally, in model 5, the interaction between ALMP and ECEC is added. While both ALMP and ECEC remain (on average) positively associated with higher employment rates among women, the interaction suggests that

the marginal effect of ALMP is reduced in the presence of extensive ECEC, and vice versa: investments in ECEC have relatively smaller returns in the context of greater public expenditure on ALMP. As interactions are notoriously hard to interpret based on the parameters alone (Brambor et al., 2006), this last finding is further explored in Figure 1.

Table 3 Women's employment rates regressed on ALMP, ECEC and their interaction

	Dependent variable:				
	Women's Employment				
	(1)	(2)	(3)	(4)	(5)
ALMP	0.284***	0.270***	0.271***	0.237***	0.234***
	(0.041)	(0.026)	(0.043)	(0.027)	(0.027)
ECEC	0.221***	0.492***	0.144***	0.353***	0.375***
	(0.040)	(0.028)	(0.044)	(0.039)	(0.039)
ALMP*ECEC					-0.098***
					(0.022)
Country Fixed Effects		√		√	√
Year Fixed Effects			√	√	√
Observations	597	597	597	597	597
R^2	0.165	0.851	0.200	0.875	0.879
Adjusted R^2	0.162	0.843	0.150	0.859	0.864
Residual Std. Error	0.916 (df = 594)	0.396 (df = 565)	0.922 (df = 561)	0.375 (df = 532)	0.368 (df = 531)
F Statistic	58.517*** (df = 2; 594)	104.305*** (df = 31; 565)	4.008*** (df = 35; 561)	57.959*** (df = 64; 532)	59.457*** (df = 65; 531)
Note:	*p<0.10**p<0.05***p<0.01				

Figure 1 Marginal effect plots of interaction between ALMP and ECEC in relation to women's employment, unemployment, and inactivity rates

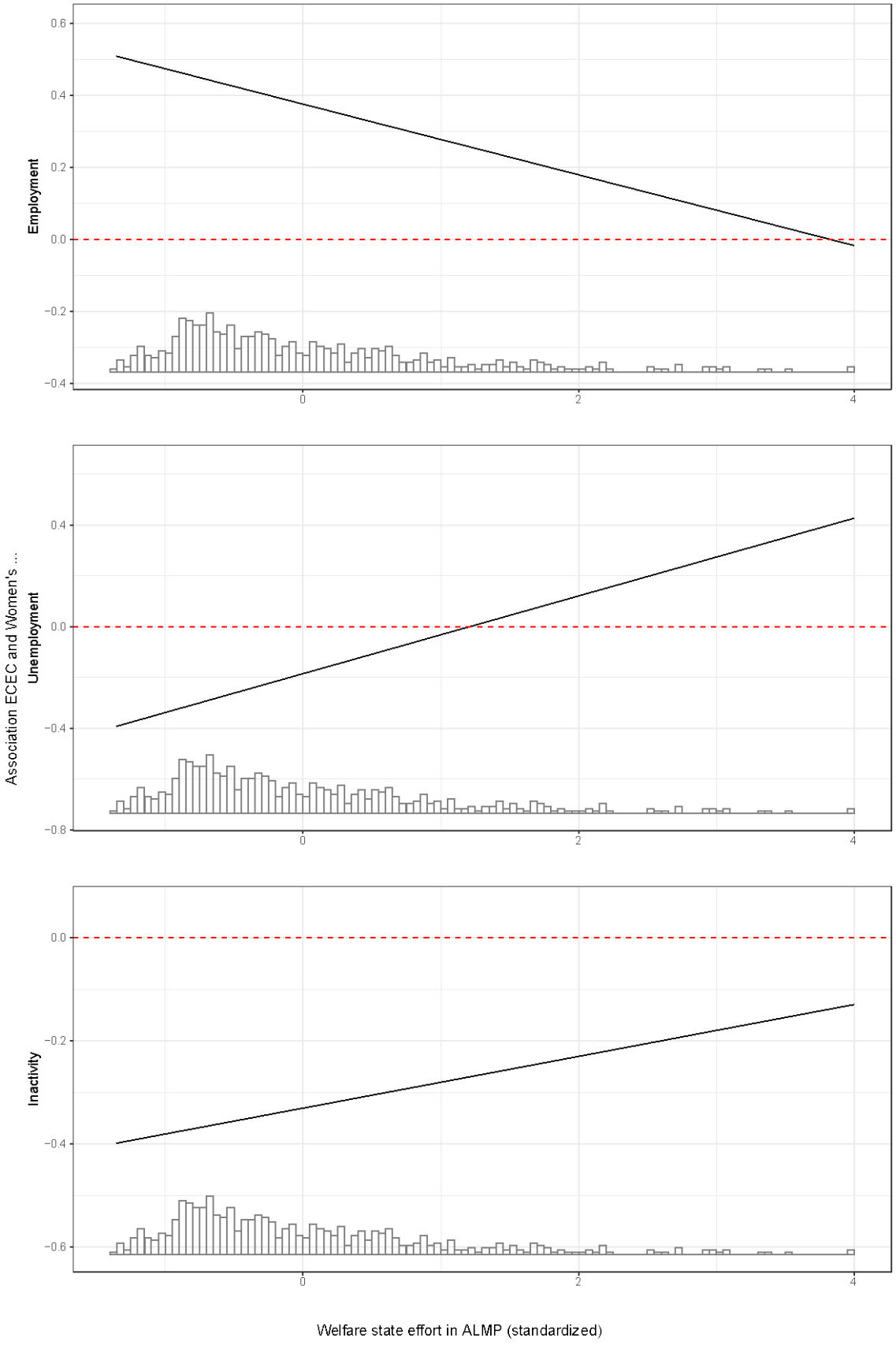
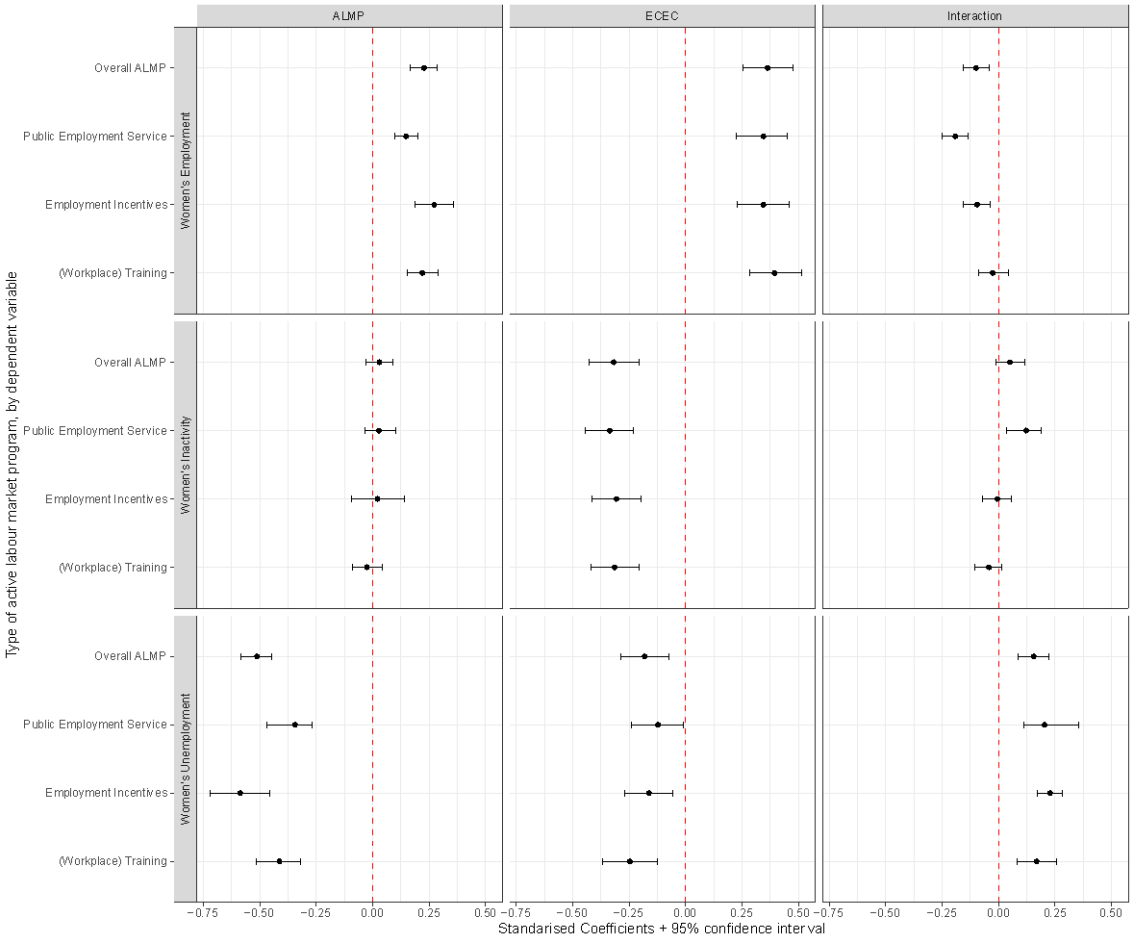


Figure 1 shows the marginal effects plot of the association between ECEC and women's employment / unemployment / inactivity (across the three panels), at different levels of public investment in ALMP. The histograms along the horizontal axis represent the distribution of the ALMP variable. In line with the interpretation above, ECEC is most strongly associated with higher women's employment rates at lower levels of ALMP. At higher levels of ALMP (around 1 standard deviation above average) the association between ECEC and women's employment is even reduced to 0. Further investments in ALMP are even estimated to be linked with a negative association between ECEC and women's employment, but as this is only the case with very high investments in ALMP in a few cases, this finding is not interpreted further. The findings, finally, are consistent when analysed for women's employment and women's inactivity rates. In contexts with higher investment in ECEC women are less likely to be unemployed and less likely to be inactive, and this association is particularly strong in the absence of (substantial investments in) active labour market policies.

These findings are further explored in Figure 2, differentiating the results by type of active labour market policy. Each row in Figure 2 represents the results from a single regression model. Each column shows one of the three key estimates (fixed effects for country and year are not shown): the average marginal effect of an ALMP, the average marginal effect of ECEC, and the interaction term. The models were estimated for the overall ALMP effect, and a differentiation to public expenditure on the public employment service, on measures to increase employment incentives, and (workplace) training. Finally, all models were estimated with women's employment, women's inactivity and women's unemployment as dependent variables (shown by the panels on the left).

The first row of Figure 2 corresponds to model 5 in Table 3: Women's employment is somewhat higher (on average) in association with overall ALMP expenditure (first column), with greater public investment in ECEC (second column), and the interaction term is negative (third column). The results for the different types of ALMP (rows 2, 3 and 4) are rather consistent, although there is no evidence of an interaction between workplace training and ECEC. Examining the other dependent variables suggests that active labour market policies show little to no association with women's inactivity rates, but are strongly associated with lower unemployment rates. ECEC is related to reducing women's unemployment and in particular with reducing women's inactivity rates. Finally, the interaction terms suggest that investments in ALMP reduce the marginal gains from ECEC – with respect to reducing unemployment – and vice versa.

Figure 2 Interactions between various ALMP and ECEC, in relation to women's employment, unemployment, and inactivity rates (bootstrapped 95%-confidence intervals)



Taken together, what does the evidence presented so far mean for the hypotheses? First and foremost, there seems to be support for the welfare pluralism hypothesis. The average marginal effects of ALMP and ECEC, with respect to higher employment rates and lower unemployment rates among women, hold up even when controlled for each other. Moreover, ALMP and ECEC are related to women's economic activity in different ways: whereas ECEC is associated with lower unemployment and especially inactivity rates among women, ALMP seems particularly related to reduced unemployment rates. Secondly, the evidence presented so far falsifies the complementarity hypothesis and corroborates the substitution hypothesis: the marginal increases of women's employment (and decreases in unemployment and inactivity) associated with an increase in ALMP and ECEC is larger in a context devoid of (substantial investments in) the other policy. Comparing the interaction terms, this seems in particular to be the case with the public employment service, while it is much less the case with respect to workplace training. In the remainder of this section, it will be shown that these results, and accordingly this test of the hypotheses, hold up when a number of possible confounders are accounted for.

Table 4 Women's employment rates regressed on the interactions between ALMP and ECEC and various controls, and PCSE sensitivity test

	Dependent variable:					
	Women's Employment					
	(1)	(2)	(3)	(4)	(5)	(6)
ALMP	0.158***	0.217***	0.205***	0.185***	0.221***	0.234***
	(0.031)	(0.027)	(0.024)	(0.021)	(0.026)	(0.034)
ECEC	0.358***	0.387***	0.210***	0.283***	0.383***	0.375***
	(0.038)	(0.040)	(0.040)	(0.041)	(0.039)	(0.040)
Men's Employment	0.121***					
	(0.032)					
Total Fertility Rate		0.068				
		(0.065)				
Service Sector			0.181**			
			(0.084)			
Cash Benefits				-0.115***		
				(0.040)		
Short Parental Leave					-0.163**	
					(0.068)	
Long Parental Leave					-0.196*	
					(0.103)	
ALMP * ECEC	-0.094***	-0.105***	-0.052**	-0.043**	-0.091***	-0.098***
	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)	(0.027)
Country Fixed Effects	√	√	√	√	√	√
Year Fixed Effects	√	√	√	√	√	√
PCSE						√
Observations	597	597	511	435	578	594
R^2	0.882	0.879	0.914	0.929	0.881	0.887
Adjusted R^2	0.867	0.864	0.902	0.920	0.865	0.959
Residual Std. Error	0.364 (df = 530)	0.369 (df = 530)	0.291 (df = 445)	0.249 (df = 385)	0.366 (df = 510)	0.367 (df=529)
F Statistic	60.110*** (df = 66; 530)	58.425*** (df = 66; 530)	73.028*** (df = 65; 445)	102.874*** (df = 49; 385)	56.134*** (df = 67; 510)	57.54*** (df=64; 529)

Note: *p<0.10**p<0.05***p<0.01
Model 6 presents results with panel-corrected standard errors (PCSE) – for this procedure observations from Greece had to be removed to allow for pair-wise correction of the unbalanced data.
*p**p***p<0.01

Table 4 shows the results of a number of regression models that test the extent to which the interaction between ALMP and ECEC (with respect to women's employment) is sensitive to the effects of time-varying confounders. Five factors are accounted for, and the results are in line with findings reported in the literature (although it should be noted that the models that include parental leave, the size of the service sector, and in particular cash benefits to families with children, are based on fewer observations due to limited data availability). In Model 1, men's employment rate is controlled for – thus accounting for all unobserved factors that equally affect women's and men's employment. Not surprisingly, in countries with higher men's employment, women's employment rates are also higher – likely representing variation in labour market conditions that are relevant to both women and men. Women's employment rates are not (significantly) related to total fertility rates (Model 2) (which should not be interpreted to mean that motherhood is unrelated to women's employment (Engelhardt & Prskawetz, 2004, 2004; Nieuwenhuis, 2015). A larger service sector has long been shown associated with greater women's employment rates, and this is further corroborated in Model 3. Finally, regarding the controls for two policies, cash benefits to families with children (Model 4) and both short and long periods of parental leave (Model 5) were found to be disincentives (Thévenon, 2011) or mechanism of exclusion (Pettit & Hook, 2009) for women's employment. Most important regarding these controls, is that in all five models the interaction term between ALMP and ECEC remains negative. The analyses of women's unemployment and women's inactivity were subjected to the same controls (with men's unemployment and men's inactivity in the respective models, and otherwise with the same control variables). These models also show that the interactions between ALMP and ECEC remain as they were reported above with these five control variables, with the exception of the model for women's inactivity that controls for cash benefits (the results are available as Appendix Tables A1 and A2). As a sensitivity test, Model 6 presents the main model with panel-corrected standard errors, which confirms highly similar results and standard errors.

As a final sensitivity analysis, the main models were re-estimated while iteratively removing one country at a time, and (separately) one year at a time. This is to test whether a single country, or a single year, overly influenced the reported findings. This turned out not to be the case: the estimates remained substantively similar, and in all cases the interaction between ALMP and ECEC remained in the same direction and statistically significant. This also indicates that the unbalanced panel (with some countries observed for more years than other countries) has not biased the findings. The results are presented in Appendix Tables A3 and A4.

5 Conclusion

This study set out to examine the potential interplay between how active labour market policies (ALMP) and early childhood education and care (ECEC) are related to women's employment, unemployment and inactivity rates. Although often assumed in comparative welfare state research, few empirical studies specifically examined such interplay across different areas of social policy. An approach to include a large number of countries over a longer period of time was motivated by the need to cover a wide range of contexts, and to complement the comparative welfare state literature.

Corroborating studies that separately studied ALMP or ECEC, it was found that greater investments in ALMP were associated with increased women's employment rates, and in particular lower unemployment rates among women. This indicates that ALMP are in particular effective for women who are economically active. ECEC were also associated with higher rates of employment, as well as with lower inactivity and unemployment rates, among women. These findings provide support for the notion of *welfare pluralism*, in the sense that these different policies work together in improving women's employment rates in slightly different ways: ALMP achieve this through reducing women's unemployment rates, whereas ECEC also achieve lower inactivity rates for women – thus associated with a larger (female) labour force. There was, however, more support for the notion of *substitution* rather than *complementarity*: the marginal benefits associated with an increase in either ALMP or ECEC were smaller in the context of large investments in the other policy.

This study was inherently correlational in nature to be able to cover a large number of country-contexts over time required to examine the interplay between different policies across a variety of contexts. This complements knowledge from micro-econometric evaluations of specific policies or program, that are typically context-specific. The results, nonetheless, held up when accounting for unobserved factors at the levels of both country and year, context-specific factors that affect both women's and men's employment, unemployment, and inactivity, and a number of structural and policy factors.

Comparative welfare state research, particularly the literature that is informed by regime-based theories, often assumes an interplay between different policies but leaves this empirically implicit and theoretically underspecified. The results of this study indicate that this assumption needs further elaboration, and partial reconsideration, on at least two grounds. First, the notion of "welfare pluralism" (Dahlberg, 2005) needs to receive more attention. Surely studies have examined the outcomes of multiple policies simultaneously, but typically those studies are limited to policies from a single domain - such as studies examining the outcomes of (active) labour market policies (Card et al., 2010; Fredriksson, 2020b) or of family policies (Gornick &

Meyers, 2003; Nieuwenhuis, Need, et al., 2012; Pettit & Hook, 2009; Thévenon, 2011). By simultaneously examining both ALMP and ECEC, as well as multiple outcome measures, this study demonstrated that these policies can work together to achieve a common outcome of higher women's employment rates, but do so through the somewhat different mechanisms of reducing unemployment and reducing inactivity rates. ALMP reduce women's unemployment, whereas ECEC also reduces women's economic inactivity. Secondly, the main assumption in comparative welfare state research is that policies are complementary to each other, rather than substitutes. This is particularly strong in the varieties of capitalism approach (Hall & Soskice, 2001). Complementarity, understood as two or more institutions or policies increasing their respective effectiveness, is considered a main reason why specific constellations of political economies can have competitive advantage over others. The possibility of substitution, defined as when "*the absence or inefficiency of one [institution] increases the returns to using the other*", is merely acknowledged in a footnote (Hall & Soskice, 2001, p. 17). Yet, the findings reported here suggest that investments in either ALMP or in ECEC are associated with greater marginal increases in women's employment in the absence of investments in the other polices. In other words, the highest rates of women's employment, and the lowest rates of unemployment and inactivity, are found in countries with large investments in both ALMP and ECEC, but such higher investments are associated with diminishing returns.

Understanding the exact mechanisms underlying the substitution hypothesis requires future research. It should be acknowledged that women's employment was already high in many countries at the start of the time-period covered here. In earlier time-periods, with lower women's employment rates, there may have been a form of complementarity. ALMP were found more effective in times of economic crisis (Card et al., 2018) – with high unemployment – so a possible mechanism underlying the finding on substitution could be that ECEC services also help protect women against unemployment in times of an economic crisis. Although the results for overall ALMP and for specific programs were by and large very similar, further research could address why public employment services showed the strongest substitution with ECEC for women's employment and inactivity. As a main function of public employment services is to address mis-matches between (potential) workers and jobs, a plausible hypothesis would be that this matching can address some of the barriers to women's employment that are also be addressed by childcare services – for instance by matching with jobs that are part-time or in the public sector. However, this also brings into focus potential *trade-offs* involved with the associated rise in women's employment rates, including part-time employment, precarious employment, and occupational segregation (Haapanala, 2021; Pettit & Hook, 2009). In addition, there could be selection effects in the sense that in contexts that are supportive to women's

employment, the women who are not employed are harder to active. This directly relates to the often-reported Matthew effect of ECEC being ineffective in enrolling (children of) parents with a larger distance to the labour market (Van Lancker, 2018) – which provides another hypothesized mechanism underlying the diminishing returns reported here. Further, these findings should be replicated with policy indicators that go beyond expenditure to also account for the details of coverage, eligibility, and (non)-take-up (cf. Nelson & Nieuwenhuis, 2021). In addition, it should be noted that ECEC policies are implemented not only to increase women's employment, but also outcomes in relation to children's well-being, development, and equal opportunities (Gambaro et al., 2015).

Policy makers in the OECD and EU have set increasingly high targets with respect to employment, and related to these targets a 'turn towards activation' was observed in policy making across multiple areas of policy making. For instance, the EU Commission set the target to have 75% percent of the working-age population in employment by 2020[5]. For men, this target was met, but most countries failed to reach this target for women (European Institute for Gender Equality, 2020). As active labour market policies were only found associated with higher women's employment through reducing unemployment, whereas early childhood education and care services also reduce inactivity rates, the policy implication of this study is to take a pluralistic view on policy making. Such a view, that addresses social problems by considering multiple policy areas simultaneously may be especially important to address gendered inequality, given the multifaceted barriers to (for instance) employment. Even though diminishing returns were associated with higher levels of policy investment, on average the highest women's employment rates were found in the context of investments in both ALMP and ECEC.

[5] See, for instance: https://ec.europa.eu/eurostat/statistics-explained/index.php/Europe_2020_headline_indicators

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Appendix

Table A1 Women's unemployment rates regressed on the interactions between ALMP and ECEC and various controls

	Dependent variable:				
	Women's Unemployment				
	(1)	(2)	(3)	(4)	(5)
ALMP	-0.135***	-0.433***	-0.434***	-0.514***	-0.469***
	(0.023)	(0.030)	(0.032)	(0.032)	(0.030)
ECEC	-0.084***	-0.249***	-0.206***	-0.393***	-0.189***
	(0.029)	(0.045)	(0.052)	(0.064)	(0.046)
Men's	0.604***				
	(0.022)				
Total Fertility Rate		-0.403***			
		(0.074)			
Service Sector			0.768***		
			(0.111)		
Cash Benefits				0.006	
				(0.062)	
Short Parental					-0.056
					(0.080)
Long Parental Leave					-0.089
					(0.121)
ALMP*ECEC	0.109***	0.173***	0.161***	0.232***	0.171***
	(0.016)	(0.024)	(0.027)	(0.031)	(0.025)
Country Fixed	√	√	√	√	√
Year Fixed Effects	√	√	√	√	√
Observations	597	597	511	435	578
R^2	0.933	0.845	0.853	0.845	0.841
Adjusted R^2	0.924	0.825	0.832	0.825	0.820
Residual Std. Error	0.275 (df = 530)	0.418 (df = 530)	0.385 (df = 445)	0.390 (df = 385)	0.429 (df = 510)
F Statistic	111.336*** (df = 66; 530)	43.664*** (df = 66; 530)	39.817*** (df = 65; 445)	42.742*** (df = 49; 385)	40.283*** (df = 67; 510)
Note:	*p**p***p<0.01				

Table A2 Women's inactivity rates regressed on the interactions between ALMP and ECEC and various controls

	Dependent variable:				
	Women's Inactivity				
	(1)	(2)	(3)	(4)	(5)
ALMP	0.065**	0.005	0.012	0.093***	0.032
	(0.030)	(0.029)	(0.025)	(0.025)	(0.029)
ECEC	-0.319***	-0.335***	-0.137***	-0.105*	-0.349***
	(0.045)	(0.045)	(0.044)	(0.054)	(0.046)
Men's Inactivity	0.160***				
	(0.043)				
Total Fertility Rate		0.227***			
		(0.069)			
Service Sector			-0.723***		
			(0.088)		
Cash Benefits				0.122***	
				(0.047)	
Short Parental Leave					0.210***
					(0.075)
Long Parental Leave					0.274**
					(0.115)
ALMP*ECEC	0.026	0.033	-0.020	-0.080***	0.015
	(0.021)	(0.021)	(0.020)	(0.021)	(0.022)
Country Fixed Effects	√	√	√	√	√
Year Fixed Effects	√	√	√	√	√
Observations	597	597	511	435	578
R^2	0.857	0.857	0.914	0.910	0.853
Adjusted R^2	0.840	0.839	0.902	0.899	0.834
Residual Std. Error	0.400 (df = 530)	0.401 (df = 530)	0.304 (df = 445)	0.292 (df = 385)	0.404 (df = 510)
F Statistic	48.294*** (df = 66; 530)	47.993*** (df = 66; 530)	72.873*** (df = 65; 445)	79.656*** (df = 49; 385)	44.280*** (df = 67; 510)
Note:	*p**p***p<0.01				

Table A3 Estimates and significance ALMP and ECEC after removal of 1 country from the data

Removed Country	ALMP	Significance ALMP	ECEC	Significance ECEC	ALMP * ECEC	Significance ALMP * ECEC
Australia	0.220	TRUE	0.375	TRUE	-0.090	TRUE
Austria	0.234	TRUE	0.378	TRUE	-0.099	TRUE
Belgium	0.233	TRUE	0.379	TRUE	-0.100	TRUE
Canada	0.234	TRUE	0.386	TRUE	-0.097	TRUE
Czechia	0.232	TRUE	0.372	TRUE	-0.082	TRUE
Denmark	0.235	TRUE	0.348	TRUE	-0.101	TRUE
Estonia	0.235	TRUE	0.403	TRUE	-0.105	TRUE
Finland	0.197	TRUE	0.243	TRUE	-0.102	TRUE
France	0.230	TRUE	0.387	TRUE	-0.104	TRUE
Germany	0.230	TRUE	0.383	TRUE	-0.099	TRUE
Greece	0.234	TRUE	0.375	TRUE	-0.098	TRUE
Hungary	0.213	TRUE	0.390	TRUE	-0.106	TRUE
Ireland	0.241	TRUE	0.370	TRUE	-0.090	TRUE
Israel	0.227	TRUE	0.380	TRUE	-0.095	TRUE
Italy	0.232	TRUE	0.372	TRUE	-0.099	TRUE
Japan	0.229	TRUE	0.372	TRUE	-0.101	TRUE
Korea	0.232	TRUE	0.394	TRUE	-0.090	TRUE
Luxembourg	0.238	TRUE	0.341	TRUE	-0.101	TRUE
Netherlands	0.259	TRUE	0.362	TRUE	-0.105	TRUE
New Zealand	0.249	TRUE	0.376	TRUE	-0.118	TRUE
Norway	0.230	TRUE	0.391	TRUE	-0.080	TRUE
Poland	0.235	TRUE	0.405	TRUE	-0.115	TRUE
Portugal	0.233	TRUE	0.381	TRUE	-0.099	TRUE
Slovakia	0.229	TRUE	0.402	TRUE	-0.112	TRUE
Slovenia	0.231	TRUE	0.366	TRUE	-0.098	TRUE
Spain	0.242	TRUE	0.338	TRUE	-0.056	TRUE
Sweden	0.232	TRUE	0.389	TRUE	-0.102	TRUE
Switzerland	0.249	TRUE	0.374	TRUE	-0.105	TRUE
United Kingdom	0.250	TRUE	0.406	TRUE	-0.099	TRUE
United States of America	0.234	TRUE	0.372	TRUE	-0.098	TRUE

Table A4 Estimates and significance ALMP and ECEC after removal of 1 year from the data

Removed Year	ALMP	Significance ALMP	ECEC	Significance ECEC	ALMP * ECEC	Significance ALMP * ECEC
1985	0.229	TRUE	0.363	TRUE	-0.095	TRUE
1986	0.236	TRUE	0.360	TRUE	-0.103	TRUE
1987	0.232	TRUE	0.361	TRUE	-0.098	TRUE
1988	0.230	TRUE	0.364	TRUE	-0.098	TRUE
1989	0.226	TRUE	0.365	TRUE	-0.101	TRUE
1990	0.228	TRUE	0.371	TRUE	-0.102	TRUE
1991	0.233	TRUE	0.372	TRUE	-0.097	TRUE
1992	0.234	TRUE	0.379	TRUE	-0.098	TRUE
1993	0.234	TRUE	0.381	TRUE	-0.100	TRUE
1994	0.231	TRUE	0.377	TRUE	-0.097	TRUE
1995	0.223	TRUE	0.362	TRUE	-0.070	TRUE
1996	0.228	TRUE	0.388	TRUE	-0.084	TRUE
1997	0.233	TRUE	0.401	TRUE	-0.101	TRUE
1998	0.235	TRUE	0.404	TRUE	-0.107	TRUE
1999	0.243	TRUE	0.375	TRUE	-0.100	TRUE
2000	0.244	TRUE	0.380	TRUE	-0.104	TRUE
2001	0.254	TRUE	0.377	TRUE	-0.108	TRUE
2002	0.240	TRUE	0.377	TRUE	-0.099	TRUE
2003	0.236	TRUE	0.375	TRUE	-0.097	TRUE
2004	0.235	TRUE	0.378	TRUE	-0.096	TRUE
2005	0.230	TRUE	0.378	TRUE	-0.096	TRUE
2006	0.230	TRUE	0.376	TRUE	-0.098	TRUE
2007	0.236	TRUE	0.374	TRUE	-0.097	TRUE
2008	0.233	TRUE	0.377	TRUE	-0.100	TRUE
2009	0.231	TRUE	0.376	TRUE	-0.099	TRUE
2010	0.230	TRUE	0.376	TRUE	-0.098	TRUE
2011	0.230	TRUE	0.381	TRUE	-0.098	TRUE
2012	0.231	TRUE	0.378	TRUE	-0.098	TRUE
2013	0.236	TRUE	0.378	TRUE	-0.096	TRUE
2014	0.236	TRUE	0.375	TRUE	-0.099	TRUE
2015	0.238	TRUE	0.363	TRUE	-0.100	TRUE
2016	0.237	TRUE	0.369	TRUE	-0.103	TRUE
2017	0.244	TRUE	0.368	TRUE	-0.103	TRUE
2018	0.230	TRUE	0.381	TRUE	-0.100	TRUE