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# The Impact of World War II on Post-war Social Spending

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## ABSTRACT

The huge quantitative literature on post-war social spending almost entirely neglected war as a possible explanatory factor of social spending dynamics. Given the mass carnage and the enormous social needs caused by World War II this is quite astonishing. This paper examines for the first time, whether and in what ways World War II affected cross-national differences in public social spending of 18 Western welfare states over the course of the Golden Age. Using panel regressions, we find that World War II strongly affected social spending until the late 1960s. Our evidence demonstrates that the Second World War is not simply a temporal watershed structuring different phases of welfare state development but rather a crucial factor for understanding cross-national differences in welfare efforts and social expenditure dynamics in the post-war period.

**KEYWORDS:** World War II, Social Spending, Welfare State

## INTRODUCTION<sup>1</sup>

There is a widespread consensus in comparative welfare state research that the Second World War was a crucial turning point in the development of Western welfare states. The three decades following the most destructive war in the history of mankind were characterized by an unprecedented growth of public spending, benefit generosity and programme coverage (Flora 1986; Castles et al. 2010). In retrospect, this period is glorified as the Golden Age of the welfare state or Les Trente Glorieuses. However, while both world wars are commonly seen as watersheds demarcating different phases of welfare state development (Flora & Alber 1981), the impact of mass warfare on the subsequent developmental trajectories of welfare states has to date not been systematically examined in comparative research. Certainly, World War II is – beginning with Titmuss (1950, 1958) – an essential part of many historical narratives of national welfare state development and there are some comparative studies which have addressed links between large-scale military conflict and social policy (e.g. Adams 1977; Kaufman 1983; De Swaan 1988; Porter 1994; Klausen 1998). Nevertheless, macro-quantitative research has more or less completely overlooked war as a possible explanatory factor of welfare state development in the post-war period. This neglect of mass warfare holds for almost the entire literature on social spending which dominated comparative welfare state research until the 1980s. This is quite astonishing given the devastating repercussions of industrialized mass warfare and the resulting tremendous need for social protection. In all belligerent countries, albeit to various degrees, war created new welfare constituencies such as disabled war veterans, surviving dependents or refugees who were in need of social protection. In Germany, for example, military aggression and racist ideology killed 6.4 per cent of the pre-war population. In addition, economic decline caused by acts of war (← p. 496) and military demobilization led to unemployment and economic deprivation that also affected the middle class. In fact, the sheer quantity of war-induced social spending is impressive. According to ILO data, many belligerent countries spent between 10 and 35 per cent of total social expenditure on victims of war in the immediate post-war years. By contrast, war-related social spending was much weaker or even absent in occupied or neutral countries (Leimgruber & Lengwiler 2009).

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<sup>1</sup> We thank Francis G. Castles, Nikolas Dörr, Judith Ebeling, Philip Manow, Michael Shalev, Peter Starke, and three anonymous referees for their helpful comments.

This paper examines for the first time, whether and in what ways World War II affected cross-national differences in public social spending of 18 Western countries over the course of the Golden Age. Our empirical findings largely confirm the “war matters thesis” (cf. Titmuss 1958). Using panel regressions, we demonstrate that World War II is not simply a temporal watershed structuring different phases of welfare state development, but rather a key factor driving social spending dynamics until the late 1960s. However, our findings also point to the importance of national contexts. One crucial context factor is the nature of the national war experience, i.e. whether a country was actively involved in military conflict and, if so, whether the war was waged on the home territory or not. A second factor is the maturity of the national social security system at the onset of World War II. While the civilian welfare state absorbed some of the war-induced social needs in belligerent nations with already developed social security systems, a large war veterans’ welfare state emerged in countries with a nascent civilian welfare state *and* which fought at war theatres overseas.

The remainder of this paper is organized as follows. The following section reviews the existing quantitative literature on post-war social spending and shows that no single study has controlled for the impact of World War II. Next, we briefly outline several causal mechanisms linking military conflict and social expenditure. Section 4 is devoted to the empirical analysis. After describing the measurement of our key variables, we run cross-sectional and panel regressions for testing the repercussions of war on social spending. The final section concludes and sketches some avenues for future research.

## WAR AND SOCIAL SPENDING IN MACRO-QUANTITATIVE RESEARCH: STATE OF THE ART

The notion that mass warfare has shaped welfare state development is not new. British historians, and social scientists in particular, have pointed to a substantial impact of war on social policy early on and many of them even viewed military conflict and war experience as a driving force behind welfare state transformation. World War II, in particular, has been considered a crucial precondition for the take-off of the modern welfare state by British scholars. Richard Titmuss (1950, 1958) argued for a close connection between the shared experience of war and the emergence of the British welfare state in the years after 1945. In his view, World War II enhanced solidarity and led to a tectonic shift in welfare provision in the post-war period as the odium of traditional poor relief was replaced by a more rights-based

and universal access to social security. John Dryzek and Robert Goodin (1986) presented strong evidence that the pervasive uncertainty in Britain during World War II nurtured a demand for redistribution and risk-pooling. British historian Asa Briggs even argued that “[t]he experience of war seems to have been as relevant as the appeal of socialism in determining (← p. 497) the practicability and popularity of introducing comprehensive welfare proposals” (Briggs 1961: 223).

However, such arguments are not restricted to the British case<sup>2</sup>. While war features prominently in national welfare state narratives, comparative work on the war-welfare nexus is rare, especially in comparative welfare state research. The literature on the determinants of social spending, which dominated comparative welfare state research for decades, has almost entirely neglected war as an explanatory variable.

The predominance of social expenditure analysis in empirical research until the late 1980s is clearly related to the early availability of comparative spending data compiled by international organizations such as the ILO and the OECD. While the ILO spending figures date back to the late 1940s, OECD data is available since ca. 1960. Even though the organizations apply different definitions for measuring national welfare efforts, the correlation between ILO and OECD spending data is very strong<sup>3</sup>. Since the ILO data cover the entire Golden Age, this data source is of particular interest for empirical inquiries into war impacts on social spending. According to the ILO definition, total social expenditure also includes spending on welfare provision for war victims. Spending on this item represented a considerable share of total social spending in many countries. While this ratio amounted to up to 35 per cent in war-waging nations, war-related spending was of no relevance in non-belligerent countries. Moreover, spending on war victims petered out only slowly over time. In 1980, war-related spending still accounted for almost 10 per cent of total social expenditure in several countries. However, the impact of war on social policy is not restricted to the provision of welfare benefits to war victims. Numerous national case

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<sup>2</sup> See, for example, Skocpol (1992), Scheve & Stasavage (2010, 2012, 2016), Mettler (2005), Sparrow (2011) and Mittelstadt (2015) for the United States, Kasza (2002) for Japan, Pedersen (1993) and Smith (2003) for France and Preller 1949 [1978] and Reidegeld (1989) for Germany. For a systematic comparative study on the war-welfare nexus based on 14 national case studies see Obinger et al. (2018).

<sup>3</sup> For the period from 1960 to 1980 the correlation between OECD spending data (OECD 1985) and ILO data is .957

studies have demonstrated that mass warfare also left a strong imprint on the civilian welfare state.

In light of this evidence, it is startling that even the best and methodologically most advanced macro-quantitative inquiries on post-war social spending in western countries have not taken the impact of World War II into account. Table 1 summarizes principal quantitative studies analysing the determinants of social spending in advanced Western countries during the Golden Age. This table reports only those studies which use time series-cross section estimations and where the period of analysis starts not later than in the early 1960s. It is striking that none of these studies controls for the impact of World War II. However, some inquiries control for post-war military spending in an attempt to capture a possible trade-off between guns and butter<sup>4</sup>. Since several studies rely on ILO expenditure data and, considering the high share of war-related spending therein, it is very likely that previous quantitative research suffers from an omitted variable bias.

We are only aware of two quantitative studies examining the impact of World War II on social spending. Both use simple cross-section regressions, however. One is the seminal study by Dryzek and Goodin (1986), who investigated the effect of World War II on the change in social spending (as measured by the ILO) between 1933 and 1949. The other is a book by Francis G. Castles on comparative public policy (1998) in which a simple (ad hoc) war impact index is used to examine whether the Second World War affected public spending in various policy areas (including social policy) in the period after 1960. Both accounts provide empirical evidence that war has pushed social spending. Whereas Dryzek and Goodin demonstrate that war accelerated spending (**← p. 498**) between 1933 and 1949, Castles (1998: 189) reports a significant positive war impact on the level of social security transfers (as measured by the OECD) in 1960<sup>5</sup>. Both inquiries therefore lend strong support to the war matters thesis. However, these studies neither meet today's methodological standards favouring TSCS analysis, nor do they provide a systematic analysis of the long-term impact of World War II on post-war social spending dynamics. This paper aims at filling this gap. We argue that war had a significant but cross-nationally distinct *long-term* impact on post-war spending. War is therefore an important factor for explaining the cross-national variation in and the dynamics of social spending during the Golden Age. Before we

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<sup>4</sup> The findings are inconsistent, however (see also Gifford 2006a; Gal 2007).

<sup>5</sup> Castles' cross-section regressions focus on three time points (1960, 1974 and 1993). The significant impact of war on social transfers disappears in 1974 and 1993.

move on to the empirical analysis, however, the next section briefly discusses causal mechanisms through which war left its imprint on social spending.

**Table 1. Principle macro-quantitative studies on post-war social expenditure in Western countries**

Author(s)	N	Period	Dependent Variable (Source)	Control for the impact of WW2	Control for post-war military spending
Pampel & Williamson (1988)	18	1950-80	Social expenditure/GDP, program-related expenditure (ILO)	No	Yes
Hicks et al. (1989)	18	1957-1982	Social transfers/GDP (OECD)	No	No
Hicks & Swank (1992)	18	1960-82	Social expenditure/GDP (ILO)	No	No
Hicks & Misra (1993)	18	1960-82	Social expenditure/GDP (ILO)	No	Yes
Huber et al. (1993)	17	1956-88/86	Social security transfers/GDP (OECD); Social expenditure/GDP (ILO)	No	Yes
Schmidt (1997)	18	1960-92	Social expenditure/GDP (OECD)	No	No
Hicks & Kenworthy (1998)	18	1960-89	Government transfers (OECD), decommodification, spending on active labor market policy	No	No
Iversen & Cusack (2000)	15	1961-93	Government transfers/GDP (OECD)	No	No
Swank (2001)	15	1965-95	Social expenditure/GDP (OECD)	No	No
Garrett & Mitchell (2001)	18	1961-91	Social security transfers/GDP (OECD)	No	No
Iversen (2001)	15	1961-93	Government transfers/GDP (OECD)	No	No
Huber & Stephens (2001)	18	1960-85	Social expenditure/GDP (ILO)	No	Yes

Source: own compilation

## WAR IMPACTS ON SOCIAL SPENDING: CAUSAL MECHANISMS

Any study claiming that war has shaped long-term social spending trajectories needs to spell out the underlying mechanisms. We argue that war unfolded its impact on social expenditure via two channels. The first one refers to war impacts on the demand-side of the political (**← p. 499**) system, notably a huge war-induced demand for social protection. The second channel includes several war impacts on the supply-side of the political system. Mass warfare was a trigger of enhanced state capacities, furnished governments with new policy jurisdictions and propelled democratization in several countries. In conjuncture with the tremendous and long-

lasting social problem pressure caused by war, these supply-side changes paved the way for a shift in social spending in the post-war period.

In terms of the impacts of war on the *supply-side* of the political system at least three effects can be distinguished. These merely indirect effects of war refer to war-wrought changes of those factors which feature prominently in the standard theories of the welfare state.

First, there is evidence that war was a trigger of mass democratization and electoral reform, notably the introduction of proportional representation (PR) during and after the Great War (Przeworski 2009; Hicks 2013; Emmenegger & Petersen 2015). The underlying mechanism is that waging a war on the basis of universal conscription brought up the issue of fair burden sharing among the population. Several scholars have argued that this ‘logic of equal sacrifice’ meant a thrust to equality in the long-run (Orges 1868; Hintze 1906; Andrzejewski 1954; Wilensky 1975). War service imposed high costs on young men (and women replacing them in the munitions industry or serving in the hinterland) which often were not matched by political rights. Hence, military service and mass carnage created a democratic imperative (Porter 1994). Universal suffrage and PR are seen as important institutional prerequisites for redistribution and political coalition-building and should therefore have affected social spending levels (Lindert 2004; Iversen & Soskice 2006; Manow 2009).

Second, war dramatically enhanced state capacities. The necessity to finance ballooning military expenditure and the ‘logic of equal sacrifice’ fueled the introduction of new taxes and a higher tax progressivity. Scheve and Stasavage (2010, 2012, 2016) have shown that the high opportunity costs of war participation borne by millions of young individuals generated political pressure to levy financial burdens on those who did not risk their lives or sacrifice time and income during military service. Hence it was the issue of ‘fair burden sharing’ that led to higher tax burdens for the rich. In many cases, the war-induced higher tax rates persisted in the post-war period and never returned to their pre-war levels (Peacock & Wiseman 1961). Governments could reap this peace-dividend for financing welfare state expansion in the aftermath of warfare. In addition, war spurred the centralization of policy jurisdictions of governments and led to the build-up of a strong state bureaucracy (Tilly 1975; Elias 1982; de Swaan 1988). A strong state apparatus and the centralization<sup>6</sup> of policy jurisdictions are commonly seen as a favourable institutional setting for public spending growth.

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<sup>6</sup> In many federal countries, for example, World War II led to new federal powers in social policy (Obinger et al. 2005: 320-21).

Finally, war-induced destruction and economic reconstruction was a trigger for exceptionally high economic growth in the post-war period (Castles 1991; Harrison 1998). According to the neo-classical theory of economic growth (Solow 1956) a massive decline of the physical capital stock in a country's home territory creates a huge potential for economic catch-up and, in consequence, to rapid economic growth over the transitory phase to the steady state. This is an important supply-side effect as rapid economic growth in conjunction with the war-induced higher tax rates enhanced the fiscal leeway of governments for financing new welfare programmes.

In sum, all these supply-side impacts of war strengthened (**← p. 500**) the capacity of government in policymaking and changed the politics of social policy making.

In terms of the *demand-side effects* of war, we argue that war has generated social needs of a magnitude that inevitably required government action and therefore led to higher levels of social spending in the post-war period. These social needs are unequivocally caused by war, as they would not have occurred in the absence of military conflict. The scope of social needs and the devastation generated by mass warfare are almost inconceivable in normal peacetime terms. In some of the belligerent countries, more than five per cent of the pre-war population was killed during World War II. However, there is a considerable cross-national variation in terms of the number of war victims and the extent of war-induced destruction. This is related to nationally distinct war experiences, notably differences in the intensity to which a country was affected by military conflict.

A commonality in all belligerent countries was that governments had to provide income support to the survivors of fallen servicemen. The death of a male breadwinner meant an economic disaster for the bereaved and often made them dependent on welfare benefits. In addition, millions of soldiers had to be reintegrated into society through employment, education and housing programmes in the wake of military demobilization. Moreover, able-bodied veterans frequently were in need of unemployment benefits over a transition period. The disabled and/or heavily traumatised veterans, by contrast, were in need of medical treatment, while their permanently injured comrades were reliant on income support such as invalidity pensions.

In occupied countries and nations where military conflict took place on the home territory, war additionally caused horrendous numbers of casualties among the civilian population. Air strikes and other combat activities killed or injured hundreds of thousands of civilians and destroyed significant parts of the housing stock and made, in consequence, many people

homeless. Moreover, Nazi persecution, border revisions and ethnic cleansing led to an influx of indigent refugees in need of shelter<sup>7</sup>. Additional needs for social protection were generated by war-induced economic decline. Trade embargoes imposed during war-time, a flattened infrastructure and the destruction of production sites caused massive supply shortages and led, in consequence, to soaring unemployment and impoverishment among civilians. In war-torn economies, war also created new welfare state constituencies among the better-off. As Dryzek & Goodin (1986) have convincingly argued, uncertainty in war-time is pervasive, leading to a higher demand for social protection even among individuals who otherwise consider themselves as good risks. In consequence, war-related uncertainty led to a shift of individual preferences towards redistribution and risk-pooling. This higher demand for public welfare provision was reinforced in war-torn economies by the fact that private alternatives to publicly provided social security, such as financial markets or private insurance, suffered from severe market distortions or simply collapsed (Overbye 1995). In addition, the common experience of violence and the hardships of war encountered by large segments of the population strengthened solidarity and raised, in consequence, the willingness of people to invest in collective goods<sup>8</sup>. Titmuss (1950: 508), for example, has summarized the British war experience as follows: “The mood of the people changed and, in sympathetic response, values changed as well. If dangers were to be shared then resources should also be shared”. We argue that these manifold imprints of mass warfare on social needs, together with the effects of war (**← p. 501**) on the supply-side of the political system, have strongly shaped post-war social spending trajectories.

## EMPIRICAL ANALYSIS

We commence our analysis with some descriptive patterns and the operationalization of our main variables before we proceed to the regression analysis. Figure 1 elucidates the development of war-induced social spending as a percentage of total social spending over time. It shows the cross-country average (solid line) as well as the minimum and maximum value per year (dashed lines). The figure illustrates that war-related spending represents a

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<sup>7</sup> Border revisions and ethnic cleansing promoted an unusually high degree of ethnic homogeneity in Europe's nation states. Since ethnic homogeneity facilitates solidarity and redistribution (e.g. Alesina & Glaeser 2004), war might have contributed in a very perverse manner to higher welfare efforts in the post-war period.

<sup>8</sup> On a more general level, evolutionary biologists have recently argued that warfare is a driving factor for the emergence of ‘ultrasocial norms’ which, by solving collective action problems, allow people to live and cooperate in huge groups of genetically unrelated individuals (Turchin et al. 2013).

considerable share of total social spending in many countries. In 1950, social spending related to war victims ranged from zero to over 30 per cent of total social expenditure. Figure 1 also reveals that spending on war victims petered out only slowly over time. In 1980, war-related spending still accounted for almost 10 per cent of the total social expenditure in some countries. Overall, war apparently had a significant but cross-nationally distinct *long-term* impact on post-war spending.

**Figure 1: Development of social spending on war victims 1950-1980**

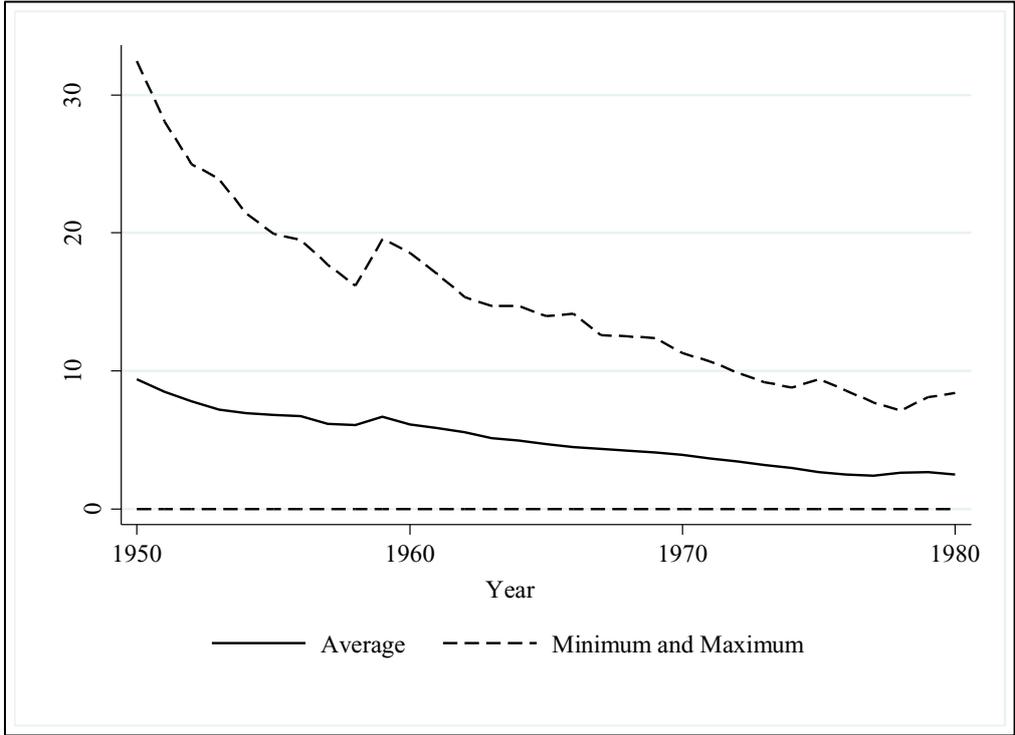
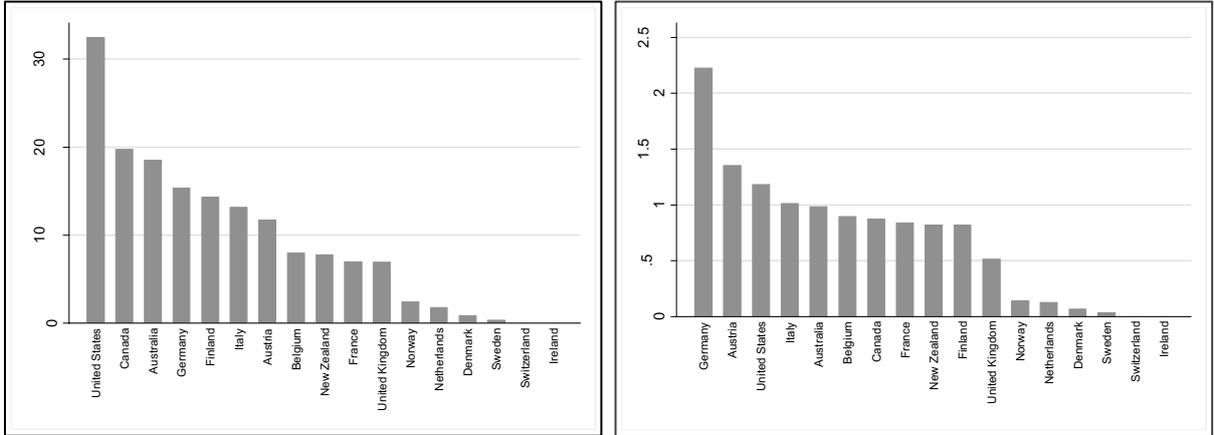


Figure 2 illustrates the cross-national variation of war-induced social spending as a percentage of total social spending (left-hand side) and as a percentage of GDP (right-hand side) immediately after World War II in greater detail.

While war-related spending was of no relevance in non-belligerent countries, there is an interesting variation in the spending vanguard. In terms of the ratio of war-related social spending to total social expenditure (chart on the left), we find the United States, Canada, Australia and Finland at the top end. In the United States, for example, the ratio of war-related social spending amounted to up to 35 per cent in 1950. Interestingly, war-related social spending in Germany and Austria is lower, even though these countries were heavily affected

by war (see below). If we look at war-related social spending as a percentage of GDP (chart on the right), however, both countries occupy the top ranks. A possible explanation for this pattern is the maturity of the (civilian) welfare state. In the left chart, the top spenders are belligerent countries which maintained only a residual welfare (← p. 502) state at the dawn of World War II. What emerged in several of these countries in the aftermath of warfare was a large military welfare state that provided social protection for (disabled) veterans and the dependents of deceased veterans. Germany and Austria, by contrast, were the pioneering nations of social insurance and it is therefore likely that some parts of the huge social problem pressure generated by war was absorbed by a mature civilian welfare state. Moreover, war had a significant negative impact on GDP in these countries, leading automatically to a higher social spending/GDP ratio. A further reason for this pattern is that an identical amount of war-related social spending as a percentage of GDP leads to a higher share of war-related social spending in relation to total social spending in residual welfare states than in advanced ones.

**Figure 2: War-related social expenditure in 1950**



Notes: Left-hand side: War-related social spending as a pct. of total social spending in 1950. Right-hand side: War-related social spending as a pct. of GDP in 1950 or 1951. Japan is excluded in both charts because data is only available from 1959 onwards. In 1959, Japan spent 19.6 per cent of total social spending on war victims. This is equivalent to 1.1 percent of GDP.

In our regression analyses, we use two main *dependent variables*. The first one is the level of total social expenditure as a percentage of GDP. Data is extracted from the ILO’s Cost of Social Security (various issues). As noted before, total social spending according to ILO classification also includes war-related social spending and spending on this item was impressively high in many belligerent countries. To assess whether war has shaped welfare state development in general, we additionally use civil social spending as a percentage of

GDP as the dependent variable. Civil social spending refers to the total social expenditure minus war-related social spending.

Our key *independent variable* is war intensity. However, measuring the intensity of World War II in comparative perspective raises some difficulties as national war experiences differed widely and war is in itself a multifaceted event. An easy distinction is whether a country was involved in military conflict or not. Non-participants are countries which were not involved in military hostilities and were not occupied by a foreign army. Measuring war intensity in belligerent and occupied countries is more complicated as much depends on the nature of warfare and the concrete experience of military occupation (cf. Lemkin 1944). We use three indicators to measure cross-nationally distinct aspects of warfare and occupation experiences, which are then compiled into an overall index of war intensity. (← p. 503)

First, it is of relevance whether military hostilities took place on the home territory or not. With the exception of the UK, which suffered from severe air strikes on the homeland, all the English-speaking countries fought almost exclusively in war theatres overseas. Hence, they escaped large-scale war-induced destruction on their home territory and had to bemoan less civilian casualties. Income support for war victims, therefore, mainly focused on (disabled) veterans and the dependents of killed soldiers. The war experience in nations whose territories were major battlegrounds and/or which were occupied during war was markedly different. There was extensive devastation caused by war and the number of civilian casualties was much higher. We use a dummy variable for measuring this aspect of warfare which takes the value 1 for war-waging nations and occupied countries that experienced military combat on their national territory. Our second indicator focuses on the number of military and civilian war victims. This indicator measures the number of people killed as a percentage of the pre-war population. The third indicator reflects the duration of conflict (in months) as it is likely that socio-economic problem pressure and uncertainty increases with the duration of war and occupation. For the second and third indicator we use data from Dryzek & Goodin (1986) and cross-validated it with data coming from alternative sources.<sup>9</sup>

In a final step, we constructed a composite index of war intensity which is the sum of the standardized three indicators divided by three. In consequence, our index ranges from zero to one. All standardized indicators have high values in the case of being heavily affected by

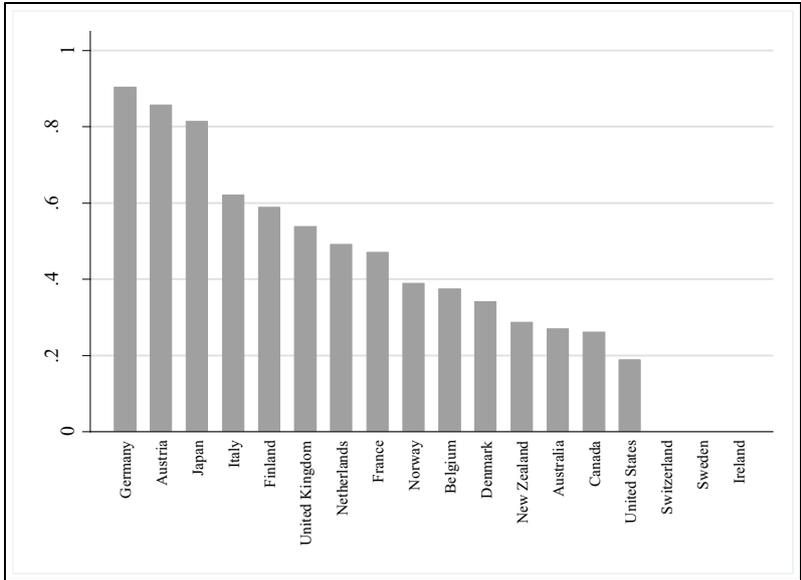
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<sup>9</sup> With regard to the percentage of people killed during World War II, we used alternative data sources for the United States, France and Austria. Cross-validation revealed that the figures provided by Dryzek & Goodin (1986) are too high in the case of Austria (Neugebauer & Morawek 1989) and too low in the case of the United States and France (Ellis 1993). However, the results are robust irrespective of the data source used.

World War II and low values otherwise. Our additive index of war intensity reflects several dimensions of warfare and we assume that high values of this index are positively related with war-induced social needs and, in consequence, a high demand for social protection.

Figure 3 illustrates the overall index of war intensity. It reveals a large variation in the extent to which the 18 nations examined were affected by World War II. While Germany, Austria and Japan score highest with regard to our index, countries such as Switzerland and Ireland were not involved in World War II. Other countries such as the United States and Canada rank at the lower end because of a comparably low number of war casualties and the absence of war acts on the home territory. The intensity by which countries were affected by World War II also varies in terms of the subcomponents of the index. For example, Germany and Austria (or what then was Nazi Germany) had the highest share of population killed in war. Regarding the time involved in combat, Japan and the English-speaking countries show the highest values while the Scandinavian countries rank at the bottom end of the spectrum.

**Figure 3: Index of war intensity in 18 countries**



Source: Own compilation (← **Figure 3 p. 505**)

Table 2 illustrates the correlation between the three indicators and their correlation with the overall index of war intensity. The strongest correlation can be found between the “war at home” indicator and the war casualties in percent of the total pre-war population. In contrast, the length of war participation is uncorrelated with war experience on the home territory. The

correlation matrix<sup>10</sup> therefore indicates that our indicators indeed capture different dimensions of war.

To examine the effects of war on social spending, we firstly analyse the impact of war on social spending over time by cross-sectional analyses. Next, we apply panel data analyses.

Since it can be assumed that the effect of war declines over time, we run repeated cross-section regressions by year. The dependent variable is total social spending as a percentage (← p. 504) of GDP. The key independent variable is our war index. In all models, we control for the percentage of elderly and GDP per capita (log). All independent variables are lagged by one year.<sup>11</sup>

**Table 2. Correlation matrix of war indicators**

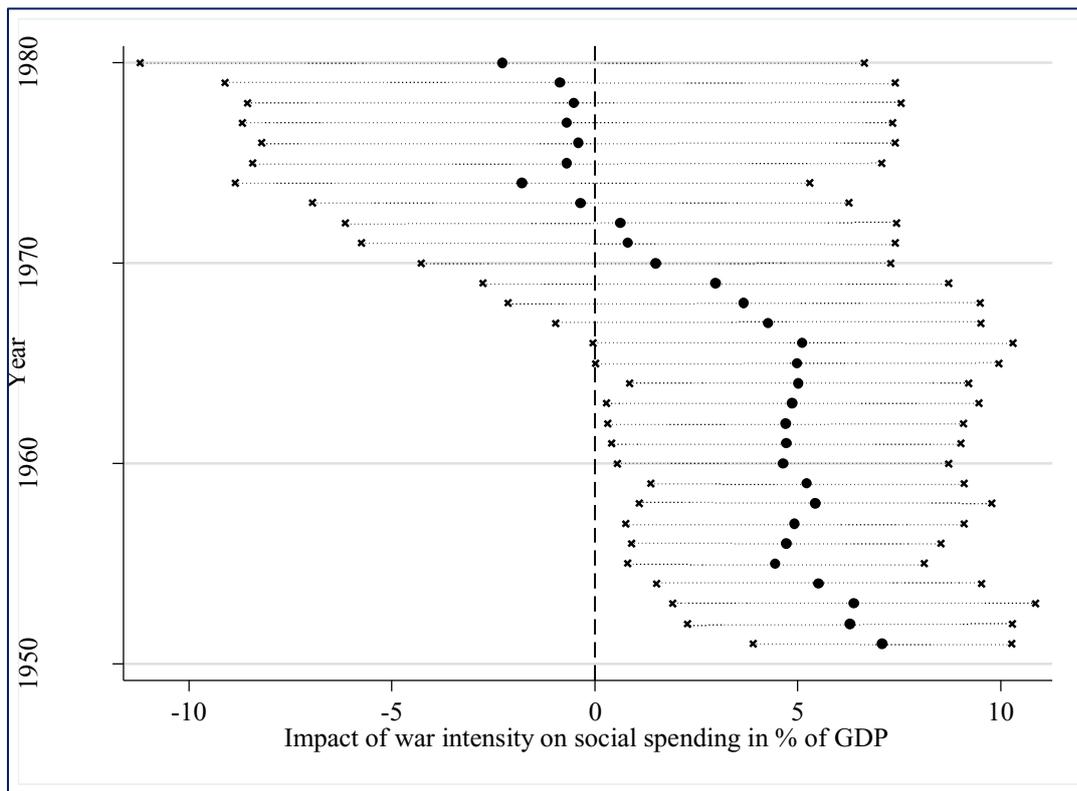
	Casualties	Length	War at home	<b>Index of war intensity</b>
Casualties in %	1			
Length of war	.46*	1		
War at home	.49**	.02	1	
<b>Index of war intensity</b>	.84***	.58**	.76***	1

Figure 4 shows the point estimates and the related 95 per cent confidence intervals (dotted line) of the war variable over time. The figure illustrates that the coefficient for the war index is statistically significant until the late 1960s (turning point =1967). In 1951, the coefficient equals 7.08, indicating that an increase of the war index from zero (lowest value) to one (highest value) boosts social spending by 7.08 percentage points. The coefficient averages around five between the mid-1950s and mid-1960s. It decreases thereafter, turns out to be statistically insignificant in the 1970s and is, eventually, close to zero in 1980.

<sup>10</sup> In the case of the binary variable that refers to war on the home territory we calculated a point biserial correlation, which can be interpreted as Pearson's product-moment correlation. Pearson's r has been calculated in all other cases.

<sup>11</sup> The results are robust against different model specifications, i.e. using different control variables.

**Figure 4. Impact of war intensity on social spending 1950-80**



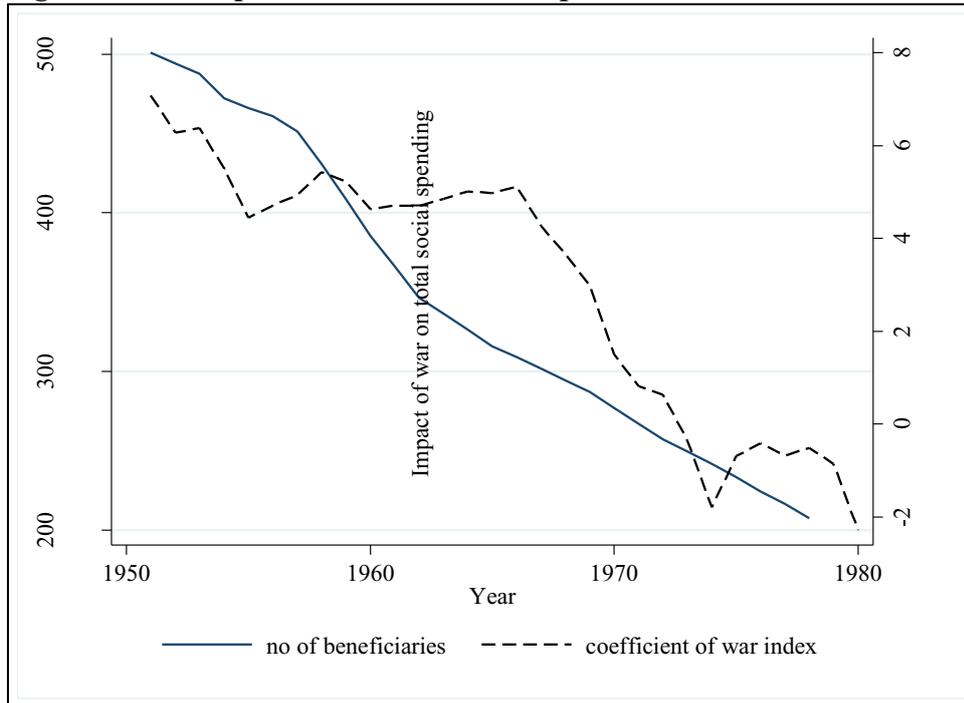
Note: The results for the control variables are in line with the results presented below in Tables 3a/b

(← Figure 4 p. 506)

A declining war impact on social spending over time is highly plausible as the demand for social benefits decreases for demographic reasons. With the passage of time, the death of welfare beneficiaries and the loss of benefit eligibility (e.g. adult war orphans) should reduce war-related social spending. To test this assumption we use the number of Austrian recipients of war-related benefits and plot it against the estimated coefficient of the war index. Figure 5 shows a very strong covariation between both variables. The development of the number of beneficiaries (left axis) is almost a perfect linear trend line for the decrease in the estimated coefficient of the war index over time (right axis). (← p. 505)

In a second step, we run panel regressions. Specifically, we estimate two sets of models. Firstly, we run regressions for a baseline model which includes a set of control variables taken from the main theories in comparative public policy research. More specifically, the baseline model includes the *GDP per capita* (log.) as the key variable of functionalist welfare state theory (Wilensky 1975). The level of economic development is an indicator of socio-economic modernization and the capability of governments to finance social spending.

**Figure 5. The impact of war and the recipients of war-related benefits over time**



Notes: Data for welfare recipients is taken from Bundesministerium für soziale Verwaltung (1979).

Furthermore, the basic model includes the share of the population *aged 65+* which has turned out as a significant push factor of welfare efforts in many previous empirical studies (Wilensky 1975; Lindert 2004). The share of *left cabinet seats* is a widely used indicator for testing power resource theory which attributes a comprehensive welfare state (← p. 506) to a strong labour movement. The index of *political constraints* compiled by Henisz (2002, 2010) controls for the institutional capacity of governments to implement policy change. Finally, the baseline model controls for the higher catch-up potential of welfare state laggards. The variable *path dependency* measures the average year when five social security programmes were introduced at the national level and is thus a proxy of welfare state maturity.

Next, we estimate an extended model that consists of those variables which have turned out statistically significant in one of the baseline models, as well as the variables that control for possible supply-side effects of war. As discussed in section 3, war might have affected electoral reform<sup>12</sup>, the centralization of policy jurisdictions and fiscal powers and economic growth. The electoral system is captured with a categorical variable measuring the existence of *proportional representation* provided by Bormann and Golder (2013). To measure the extent to which fiscal powers and policy jurisdictions are centralized, we use the *Regional*

<sup>12</sup> Note that we do not control for war impact on democratization as all 18 nations examined were democracies from 1945.

*Authority Index (RAI)* taken from Hooghe et al. (2016). RAI measures the decentralization of policy responsibilities with high values indicating high levels of regional policy authority<sup>13</sup>. To capture the level of *economic growth* we use the annual change in GDP per capita. In all models, the right-hand side variables are lagged by one year.

**Table 3a. The effects of war on total social spending in percentage of GDP**

	First Period (1951-1967)		Second Period (1968-1980)	
	(1) Baseline Model	(2) Extended Model	(3) Baseline Model	(4) Extended Model
<b>War</b>	5.459*** (1.526)	6.334*** (0.943)	-0.471 (1.904)	0.825 (1.622)
GDP per capita <sub>t-1</sub>	0.958 (0.709)	2.586*** (0.549)	0.714 (1.280)	5.380*** (1.312)
Elderly <sub>t-1</sub>	1.615*** (0.246)	1.370*** (0.134)	1.889*** (0.232)	1.246*** (0.157)
Left government <sub>t-1</sub>	0.00128 (0.00178)		0.00122 (0.00188)	
Political institutions <sub>t-1</sub>	0.515 (0.408)		-0.820 (0.940)	
Path dependency	-0.00672 (0.0505)		-0.0113 (0.0584)	
Electoral system <sub>t-1</sub>		0.150 (0.143)		2.173*** (0.418)
Regional authority index <sub>t-1</sub>		-0.0655** (0.0265)		-0.0146 (0.0321)
GDP growth <sub>t-1</sub>		-4.040*** (0.811)		-7.324*** (1.607)
Observations	288	305	221	234
Wald Chi2	147.34***	273.51***	188.59***	259.85***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

The baseline and the extended model are estimated using total social spending (Table 3a) as well as civil social spending in percentage of the GDP (Table 3b). In contrast to total social spending, civil social expenditure does not contain war-related social spending. This allows to test whether war has a more general and broader impact on welfare state development beyond the social protection of war victims. Since our previous analysis (see Figure 4) suggested that 1967 is a turning point regarding the impact of war on social expenditure, we split the time span from 1950 to 1980 into two sub-periods. The first period covers the years from 1950

<sup>13</sup> We additionally tested two sub-indicators of RAI separately, namely the range of policies for which regional governments are responsible and the extent of taxing powers of regional governments. The results remain the same.

until 1967 (Models 1 and 2), whereas the second ( $\leftarrow$  p. 507) one stretches from 1968 until 1980 (Models 3 and 4). Models 1 and 3 refer to our baseline model, while Models 2 and 4 include the variables controlling for possible supply-side effects of war.

We estimate a random effects GLS model. Since we are interested in the effect of the time-invariant war index on the level of social spending, our models do not include fixed effects nor do they test first differences. To account for the panel structure of our data we calculated standard errors that are robust against disturbances related to heteroscedasticity, contemporaneous cross-sectional correlation and autocorrelation of type AR1.

**Table 3b. The effects of war on civil social spending in percentage of GDP**

	First Period (1951-1967)		Second Period (1968-1980)	
	(1) Baseline Model	(2) Extended Model	(3) Baseline Model	(4) Extended Model
<b>War</b>	4.756*** (1.383)	5.655*** (0.786)	-0.819 (2.110)	0.699 (1.593)
GDP per capita <sub>t-1</sub>	1.389* (0.734)	2.901*** (0.524)	0.0930 (1.313)	4.956*** (1.279)
Elderly <sub>t-1</sub>	1.596*** (0.231)	1.400*** (0.115)	2.021*** (0.254)	1.239*** (0.149)
Left government <sub>t-1</sub>	0.00126 (0.00177)		0.00167 (0.00190)	
Political institutions <sub>t-1</sub>	0.439 (0.518)		-0.300 (1.012)	
Path dependency	-0.0197 (0.0471)		0.0188 (0.0647)	
Electoral system <sub>t-1</sub>		0.289** (0.144)		2.393*** (0.396)
Regional authority index <sub>t-1</sub>		-0.0867*** (0.0222)		-0.0101 (0.0324)
GDP growth <sub>t-1</sub>		-4.001*** (0.815)		-7.540*** (1.660)
Observations	276	293	209	222
Wald Chi2	178.35***	352.11***	312.29***	278.61***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

Finally, we examined the impact of the three partial indicators underlying the overall war index on social spending separately. Again, the analysis is carried out for two sub-periods and the control variables are identical to those in the baseline models. The findings are reported in Table 4.

Overall, the empirical evidence reported in Tables 3a/3b and in Table 4 unequivocally demonstrates that World War II strongly influenced social spending in the two decades after the war. The overall war index as well as its partial indicators point in the same direction until the late 1960s. The coefficients are positive and highly statistically significant. An increase in the overall index of war intensity from zero to one leads to an increase in the social spending/GDP ratio of 5.46 percentage points (Table 3a). Given that the average level of social expenditure in our sample amounted to 8.5 per cent of GDP in 1951, this is a substantially strong effect. The size of the coefficient of the overall war index is even slightly higher in the extended model (cf. Models 1 and 2; Table 3a). This result supports the findings of the cross section analyses above in terms of the size and significance of the coefficient. A further remarkable finding is that our war index does not only push total social expenditure but also civil social spending, i.e. social spending net of social expenditure on war victims (← p. 508) (Table 3b). The coefficient is only slightly smaller than in Table 3a and also highly statistically significant. This clearly shows that war is important for welfare state development in general and not only for war-related social spending. Additionally, the coefficient is remarkably stable across all different model specifications.

**Table 4. The impact of war on social spending separated by war indicators**

	First period 1950 – 1968			Second period 1968 – 1980		
	(1) War at home	(2) Death in %	(3) Length	(4) War at home	(5) Death in %	(6) Length
<b>War variables</b>	2.040** (0.859)	4.342*** (1.386)	5.982*** (1.479)	0.159 (0.962)	1.062 (1.541)	0.956 (1.521)
Observations	288	288	288	234	234	234
Wald Chi2	146.09***	131.28***	132.6***	273.45***	254.85***	267.34***

Notes: Control variables are the same as in the baseline models in Table 3a/b. The results for the control variables are suppressed to conserve space; robust standard errors in parentheses; \*\*\*p<.01, \*\*p<.05, \*p<.1

By contrast, the picture looks different for the period from 1968 onwards. The coefficients of the overall index (Models 3 and 4, Tables 3a and b) are now statistically insignificant and substantially irrelevant in size. In addition, all coefficients of the partial indicators turn out to be statistically insignificant (Table 4). This means that the strong influence of the Second World War on social expenditure in the immediate post-war period disappears from the late 1960s onwards.

The effects of the control variables are mostly in line with the conventional wisdom of comparative welfare state research. As expected, the percentage of the elderly population is a very strong push factor of social spending. An increase in the share of the elderly by one percentage point pushes social spending as percentage of GDP by ca. 1.5 percentage points (Table 3b, average in Models 1 and 2). The coefficients of economic growth are consistently negative and significant suggesting, therefore, that high growth rates relieve governments from social spending obligations. As expected, the level of economic development leads to higher social spending, whereas decentralization of policy authority has the opposite effect. However, the estimated coefficients are not consistently significant. The existence of PR seems to be only relevant in the second period for which the coefficients indicate that countries with PR spend ca. 2.2 percentage points more on social protection than countries with MR. In line with power resource theory, the coefficient of left-wing cabinets is positive but far away from conventional levels of statistical significance<sup>14</sup>. Neither institutional constraints nor the timing of welfare programme adoption exert any significant influence.

We additionally estimate several alternative models to test whether our results are robust. First, we use different time variables such as cubic splines and period dummies to account for a time trend in our variables (see Table A1, appendix). Second, we include a lagged dependent variable (Models 1 and 2, Table A2, appendix)<sup>15</sup>. Third, we estimate different model specifications to account for autocorrelation in the error term (Models 3 and 4, Table A2, appendix). Additionally, we include trade openness as (**← p. 509**) a further control variable (Models 1 and 2, Table A3, appendix) and use social expenditure as a percentage of the GDP in 1933 as an alternative indicator for welfare state maturity (Models 3 and 4, Table A3, appendix). Fourth, we control for the level of corporatism<sup>16</sup> and union density (Models 1 and 2, Table A4, appendix) as well as for the type of the welfare state by including welfare regime dummies (Models 3 and 4, Table A4, appendix). Fifth, we check whether our results are sensitive to different measurements of the partisan variables (Table A5, appendix). Since it can be argued that not only Social Democratic but also Christian Democratic parties are in favour of welfare state expansion, we include the percentage of cabinets seats held by Social and Christian democratic parties (pro welfare parties) in Models 1 and 2. Models 3 and 4

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<sup>14</sup> One reason for insignificant partisan effects might be the methodological framework using data based on country years (see Schmitt 2016 for details). Note, however, that alternative indicators for measuring power resource theory lend empirical support to this influential body of theory (cf. Tables A4 and A5 in the appendix).

<sup>15</sup> In line with Huber and Stephens (2001) we lagged the dependent variable by five years.

<sup>16</sup> Data on corporatism is provided by Jahn (2016) while data on union density is taken from Armingeon et al. (2016).

control for the long-term effect of left parties by using the cumulative percentage of cabinet seats held by left parties (cf. Huber/Stephens 2001). All robustness checks contain the variables of our baseline model as controls. The estimation results show that our findings are highly robust across all different model specifications. Most importantly, the effects of the war index are fully in line with the results reported in Tables 3a and 3b.<sup>17</sup>

## CONCLUSION

The effects of wars on domestic politics have received only scant attention in comparative politics (Kasza 1996; cf. Wimmer 2014). Social policy is no exception. Even though World War II killed more than 60 million people and caused fathomless human suffering, its impact on post-war welfare state development has rarely been examined in comparative welfare state research. Certainly, the Second World War is commonly regarded as a watershed for social policy development, but its impact on post-war welfare state development has not been subject to a rigorous comparative analysis. The huge literature on post-war social spending almost entirely neglected war as a possible explanatory factor of social spending dynamics. In light of millions of war victims in need of social protection this is quite astonishing. Given the mass carnage and the enormous social needs caused by World War II, the crucial question is not whether but rather how war has shaped social policy. By examining the impact of war on social spending in 18 Western countries over the period between 1950 and 1980, this paper has indeed shown that war had a strong but temporarily limited impact on post-war spending. Our empirical evidence indicates that World War II strongly affected social spending for a period of circa 25 years, suggesting that war is crucial for understanding cross-national differences in welfare efforts and social expenditure dynamics during the Golden Age. A key finding of this paper is that the impact of total war on social spending is not only driven by the social protection of the war victims. Our evidence rather suggests that war is important for understanding welfare state development in general as it led to a shift in civil social spending in the post-war period. However, this impact varies with different national war experiences. It was strongest in countries where the homeland was a theatre of war and which suffered from many casualties. In countries fighting overseas, war-related spending was also substantial but

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<sup>17</sup> We additionally checked whether a war involvement after 1945 influences our results by including a dummy variable which takes the value one when a country has been involved in a war in a specific year after 1945 and zero otherwise. The results for our war index do not change and the dummy is statistically insignificant.

mainly restricted to war veterans and their dependents. What emerged there in some places, such as the U.S., was a large veterans' welfare state in parallel with a residual civilian welfare state. This military welfare state was further extended (**← p. 510**) in the post-war period and has survived to the present day (Gifford 2006b; Mittelstadt 2015).

However, focusing on social spending is not enough. World War II also might have shaped several other aspects of social policy such as benefit generosity, coverage, the introduction of programmes (e.g. family allowances) and the patterns of social provision, notably the public-private mix. Systematic comparative research in these areas is still in the beginning (Obinger et al 2018). It is, for example, striking that even leading welfare state scholars have neglected war in their inquiries on the development of social rights since the 1930s (Korpi 1989). A further promising avenue for future comparative research is to study the repercussions of the Great War for the welfare state. However, this endeavour requires much effort in terms of data collection. Finally, one should extend the analysis to Eastern European countries where both world wars have clearly influenced national welfare state trajectories. Thus, from these broader perspectives, much remains to be done for a better understanding of the war-welfare state nexus.

## Appendix

**Table A1. Robustness Checks – Different time variables**

	Cubic Splines		Period Dummies	
	(1) 1 <sup>st</sup> Period	(2) 2 <sup>nd</sup> Period	(3) 1 <sup>st</sup> Period	(4) 2 <sup>nd</sup> Period
<b>War</b>	4.056*** (1.303)	-0.306 (1.809)	5.154*** (1.014)	-0.0334 (1.381)
GDP per capita <sub>t-1</sub>	0.424 (0.756)	1.295 (1.416)	1.443** (0.661)	1.581 (1.269)
Elderly <sub>t-1</sub>	1.200*** (0.230)	1.821*** (0.224)	1.209*** (0.199)	1.438*** (0.185)
Left government <sub>t-1</sub>	0.000805 (0.00181)	0.00100 (0.00190)	0.000406 (0.00195)	0.000695 (0.00199)
Political institutions <sub>t-1</sub>	0.553 (0.430)	-0.790 (0.950)	0.373 (0.430)	-0.638 (0.978)
Path dependency	-0.0682 (0.0431)	-0.0242 (0.0553)	-0.0665* (0.0358)	-0.0903** (0.0431)
Observations	283	221	283	221
Wald Chi2	206.95***	198.91***	259.36***	269.12***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

(**← p. 511**)

**Table A2. Robustness Checks – Lagged dependent variable (LDV) and Prais-Winston**

	LDV		Prais-Winston	
	(1) 1 <sup>st</sup> Period	(2) 2 <sup>nd</sup> Period	(3) 1 <sup>st</sup> Period	(4) 2 <sup>nd</sup> Period
<b>War</b>	<b>0.969*</b> <b>(0.598)</b>	<b>0.0284</b> <b>(1.014)</b>	<b>7.247***</b> <b>(1.093)</b>	<b>3.248</b> <b>(2.919)</b>
Lagged Social expenditure	0.797*** (0.0537)	0.609*** (0.0630)		
GDP per capita <sub>t-1</sub>	-0.291 (0.494)	0.886 (1.159)	2.161*** (0.786)	2.907* (1.743)
Elderly <sub>t-1</sub>	0.376*** (0.108)	0.754*** (0.152)	1.184*** (0.272)	1.702*** (0.261)
Left government <sub>t-1</sub>	0.00543** (0.00245)	0.000774 (0.00221)	0.00101 (0.00181)	0.000463 (0.00199)
Political institutions <sub>t-1</sub>	1.011 (0.748)	-0.0550 (1.046)	0.567 (0.441)	-1.072 (0.933)
Path dependency	0.00315 (0.0192)	-0.0277 (0.0323)	-0.0649** (0.0311)	0.0335 (0.0643)
Observations	207	221	288	221
Wald Chi2	1244.4***	547.04***	472.13***	186.43***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

**Table A3. Robustness checks – Trade openness and social expenditure 1933**

	Trade openness		Social expenditure 1933	
	(1) 1 <sup>st</sup> Period	(2) 2 <sup>nd</sup> Period	(3) 1 <sup>st</sup> Period	(4) 2 <sup>nd</sup> Period
<b>War</b>	<b>4.886**</b> <b>(2.259)</b>	<b>0.352</b> <b>(1.364)</b>	<b>5.532***</b> <b>(1.223)</b>	<b>-0.272</b> <b>(2.060)</b>
GDP per capita <sub>t-1</sub>	0.792 (0.763)	1.180 (1.264)	1.219** (0.614)	0.482 (1.254)
Elderly <sub>t-1</sub>	1.781*** (0.275)	1.522*** (0.195)	1.471*** (0.179)	1.995*** (0.203)
Left government <sub>t-1</sub>	0.00134 (0.00169)	6.25e-05 (0.00219)	0.00120 (0.00186)	0.00126 (0.00193)
Political institutions <sub>t-1</sub>	0.371 (0.403)	-1.661 (1.010)	0.495 (0.413)	-0.814 (0.921)
Path dependency	0.00868 (0.0673)	-0.00769 (0.0452)		
Trade openness <sub>t-1</sub>	-0.0179** (0.00897)	0.0575*** (0.0127)		
Social expenditure 1933			0.112 (0.122)	-0.0462 (0.150)
Observations	271	218	288	221
Wald Chi2	134.52***	322.59***	181.77***	166.31***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

(← p. 512)

**Table A4. Robustness checks – Union density, corporatism and welfare state regimes**

	Corporatism Union density		Welfare state regimes	
	(1) 1 <sup>st</sup> Period	(2) 2 <sup>nd</sup> Period	(3) 1 <sup>st</sup> Period	(4) 2 <sup>nd</sup> Period
<b>War</b>	4.086*** (1.083)	0.867 (1.487)	4.605*** (0.855)	-1.255 (1.455)
GDP per capita <sub>t-1</sub>	3.211*** (1.010)	1.607 (1.268)	2.985*** (0.590)	3.618*** (1.349)
Elderly <sub>t-1</sub>	0.631*** (0.218)	1.679*** (0.188)	0.865*** (0.178)	1.123*** (0.207)
Left government <sub>t-1</sub>	0.00181 (0.00354)	0.000337 (0.00196)	0.000981 (0.00193)	0.00133 (0.00206)
Union density <sub>t-1</sub>	-0.0202 (0.0197)	0.0680*** (0.0205)		
Corporatism <sub>t-1</sub>	0.915* (0.517)	-0.0691 (0.308)		
Political institutions <sub>t-1</sub>	-1.888 (2.210)	-0.656 (0.967)	0.344 (0.430)	-0.845 (1.067)
Path dependency	-0.101** (0.0439)	-0.0208 (0.0466)	0.000497 (0.0318)	0.00447 (0.0484)
Scandinavian welfare state			2.361*** (0.505)	4.527*** (0.926)
Corporatist welfare state			3.693*** (0.565)	5.561*** (0.958)
Observations	119	221	288	221
Wald Chi2	238.03***	259.19***	411.60***	304.93***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

**Table A5. Robustness checks – Pro-welfare parties and cumulative partisan effect**

	Pro-welfare government		Cumulative left government	
	(1) 1 <sup>st</sup> Period	(2) 2 <sup>nd</sup> Period	(3) 1 <sup>st</sup> Period	(4) 2 <sup>nd</sup> Period
<b>War</b>	5.526*** (1.343)	-0.384 (1.678)	5.041*** (1.531)	0.127 (2.228)
GDP per capita <sub>t-1</sub>	1.200* (0.690)	1.226 (1.259)	1.055 (0.687)	0.476 (1.274)
Elderly <sub>t-1</sub>	1.502*** (0.235)	1.749*** (0.212)	1.105*** (0.276)	1.702*** (0.272)
Pro-welfare government <sub>t-1</sub>	0.00183 (0.00189)	0.00143 (0.00199)		
Cum. left government <sub>t-1</sub>			0.00251*** (0.000654)	0.00193** (0.000872)
Political institutions <sub>t-1</sub>	0.476 (0.411)	-0.791 (0.970)	0.524 (0.401)	-0.892 (0.916)
Path dependency	-0.0206 (0.0459)	-0.0352 (0.0520)	-0.0505 (0.0512)	0.0110 (0.0648)
Observations	288	221	288	221
Wald Chi2	163.72***	205.99***	161.69***	158.43***

Notes: Robust standard errors in parentheses \*\*\*p<.01, \*\*p<.05, \*p<.1

(← p. 513)

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