



Spatial interdependencies and welfare state generosity in Western democracies, 1960–2000

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Abstract

For many years comparative welfare state research has been afflicted with a sort of methodological nationalism in the sense that countries were treated as independent units. In line with the recent ‘spatial turn’ in comparative public policy studies, this paper examines with regard to three welfare state programmes whether, in the post-war period, the provision of social rights in 18 Western democracies was shaped by benefit generosity in other countries. We show that diffusion is present but varies by programme and over time. Rather surprisingly, we find that policy diffusion was particularly relevant during the Golden Age.

Keywords

benefit generosity, diffusion, golden age, spatial interdependencies, welfare state

Introduction

Today, the welfare state is a constitutive element of the modern state that attracts approximately 50 percent of total public expenditure in virtually all advanced democracies. Much of the dramatic growth of the welfare state in the course of the 20th century took place within a relatively short period that, in retrospect, is quite frequently glorified as a Golden Age. Stretching over the period between 1945 and about 1975, this era was characterised by unprecedented economic growth, relatively closed economies and, therefore, considerable autonomy for national policy-makers (Scharpf, 2000). In consequence, the post-war

period witnessed a significant extension of social rights to new groups of beneficiaries, higher levels of benefit generosity, eased eligibility rules, and the introduction of new programmes such as family cash benefits or social services. While numerous empirical studies have examined the domestic forces driving these developments, very little attention was paid

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to the issue of whether welfare state development and welfare generosity in the post-war period was influenced by spatial interdependencies between nations. This is astonishing since there is considerable evidence that social policy choices are not implemented independently of each other and a policy choice in one country may depend on the policy choices of other nations (for example Collier and Messick, 1975; Rodgers, 1998).

This paper explicitly focuses on spatial interdependencies between countries for explaining benefit generosity between 1960 and 2000 in 18 advanced welfare states.¹ The main objective is to provide a first empirical test of whether, and if so, in which ways, spatial interdependencies have shaped the generosity of welfare states. Our inquiry makes a novel contribution to the literature in the following respect. Using data from the Social Citizenship Indicator Program (SCIP), we examine with regard to three welfare state programmes (pensions, unemployment compensation, and sickness cash benefits) whether policy diffusion accounts for the extent of welfare state generosity in the post-war period. This research question has been widely neglected by the existing literature, which, by now, has only examined the impact of spatial interdependencies on social spending and unemployment benefits since the 1980s, that is, in a period characterised by welfare cutbacks and welfare state recalibration.

On average, the three programmes under scrutiny absorbed about 71 percent of public social expenditure in our 18 countries in 2007 (Organisation for Economic Co-operation and Development, 2010). However, we use benefit levels offered by these programmes as dependent variable because social expenditure is 'epiphenomenal to the theoretical substance of welfare states' (Esping-Andersen, 1990: 19). The programme-related net replacement rates calculated by SCIP represent the best indicator available measuring welfare generosity and reflect the degree to which social entitlements are granted as a matter of social rights (Korpi and Palme, 2003: 432–33; Stephens: 2010: 515–16). Since benefit generosity is a politically controlled output measure, we can assume that national benefit levels are possibly influenced by the decisions made by other governments. In fact, our findings suggest that spatial

interdependencies do exist, but vary by programme as well as over time.

The paper is organised as follows. We commence with a brief literature review and show that only few cross-national comparative studies have to date shed light on the impact of spatial interdependencies on welfare state development. Next, we theoretically discuss the role of policy diffusion in this process and illustrate the underlying causal mechanisms. The following section presents the empirical findings, while the final section concludes.

A brief literature review

The dramatic expansion of the welfare state in the post-war period very soon attracted the interest of social scientists who attempted to understand the factors underlying this development. This endeavour was facilitated by early data availability with national social expenditure featuring as the main dependent variable for many years. Social spending was even seen as a synonym for national 'welfare efforts' in the functionalist accounts of the 1950s and 1960s (Wilensky, 1975). From the 1980s onwards, however, mostly Scandinavian scholars argued that the focus on expenditure involved a 'nontheoretical conceptualization' of the welfare state (Esping-Andersen, 1990; Korpi and Palme, 2003: 426). With reference to T.H. Marshall, these scholars suggested paying more attention to the extent to which social entitlements are granted as a matter of right. Eligibility conditions and benefit levels rather than social expenditure were the primary focus of these scholars and their interest in the provision of social rights motivated the Social Citizenship Indicator Programme. Though publications based on SCIP data began appearing in 1989, the dataset was not publicly available until 2007 (Stephens, 2010: 517). Hence social expenditure continued to play a prominent role as dependent variable in comparative welfare state research up to the present day.

What the empirical inquiries of both approaches have in common, however, is that they have typically treated nations as independent units and, in consequence, neglected spatial interdependencies. This is not to say that international influences were

wholly ignored. International impacts on domestic policies were typically controlled for in quantitative inquiries by additional right-hand side variables measuring trade openness, financial market deregulation or EU membership. But this is very long way from modelling interactions between countries in an explicit manner.

In contrast, the notion that national social policies might be influenced by social legislation adopted in other countries featured prominently in comparative studies that focused on the cross-national differences in the temporal adoption of social security legislation. These scholars quite early on assumed that governments did not implement welfare reforms independently from each other. Apart from the impact of domestic factors, these scholars were concerned with the question of whether programme adoption was stimulated by the social legislation established in pioneer nations. The locus classicus is a paper by Collier and Messick (1975), which not only pointed to the prevalence of Galton's problem² (1975: 1300) in comparative welfare state research, but also conducted an (exploratory) empirical analysis of programme diffusion in 59 countries. They found evidence of diffusion in the sense that late adopters could be shown to have introduced their first welfare programme at lower levels of modernisation by imitating the social security programmes of pioneer countries. A few years later, Alber (1982: 134ff.) and Kuhnle (1981) examined the spread of Bismarckian social insurance across Western European countries and concluded that German social insurance legislation was hardly a successful export article (Alber, 1982: 143). Yet the commendable efforts of these pioneers faced severe constraints imposed by the lack of appropriate statistical methods and technical limitations in terms of data processing. For example, the scatterplots reported by Collier and Messick (1975) and Alber (1982) were still drawn by hand and the empirical analysis relied on simple correlations. Thanks to methodological and technical advances, however, these problems have been resolved and recent years have witnessed a sort of 'spatial turn' in comparative public policy (for example, Franzese and Hays, 2007, 2008; Gilardi et al., 2009, 2010; Simmons and Elkins, 2004).³ Comparative welfare state research is no

exception in terms of a growing interest in spatial interactions between countries. Jahn (2006, 2009) has examined the impact of globalisation on social expenditure by weighting social spending with bilateral trade as a share of a country's total trade volume. He found an increasing importance of diffusion over time combined with a race to the bottom in social spending in the 1990s (Jahn, 2006, 2009). He concludes that 'international, not domestic, imperatives increasingly determine social policy' (Jahn, 2006: 426). Franzese and Hays (2006) have shown for EU countries that spending decisions of neighbouring countries are interdependent. Higher expenditure devoted to active labour market programmes creates an incentive to free ride on the spending behaviour of neighbouring countries. Kemmerling (2007) also investigated patterns of diffusion in labour market policy in rich democracies using the ratio of active and passive labour market spending as the dependent variable. In line with Franzese and Hays (2006), he found a negative short-term influence between countries sharing a common border. He argues that this effect is triggered by positive externalities between neighbouring countries. However, other diffusion mechanisms, such as relative policy success (measured by the difference of the unemployment rate between countries), remained statistically insignificant.

Other studies have examined the spread of particular welfare state reforms across countries. Gilardi et al. (2009) show that the introduction of diagnosis-related groups (DRGs) in the hospital sector can be attributed to policy diffusion. Brooks (2007) obtained similar findings with regard to the proliferation of funded defined-contribution pensions among middle-income economies.

To date, only two studies have investigated possible impacts of diffusion on benefit generosity. However, both of them only refer to the post-Golden Age period. Kemmerling (2007) examined the determinants of the net replacement rate offered by unemployment insurance, but did not find any significant spatial effects for the period between 1971 and 2002. Gilardi (2010) also focused on the retrenchment of unemployment benefits in a sample of 18 Organisation for Economic Co-operation and Development (OECD) countries. He was particularly concerned with the

role of policy learning and obtained empirical evidence that learning among countries is conditioned by the ideological positions of policy actors and their beliefs about likely electoral reform consequences. No other previous cross-national studies dealing with the determinants of welfare generosity have modelled spatial interdependencies in an explicit manner (for example, Allen and Scruggs, 2004; Huo et al., 2008; Korpi and Palme, 2003; Swank, 2005).

This short literature review has revealed two shortcomings. First, the only kind of welfare benefits analysed by this research so far relate to unemployment insurance. Second, no research has examined the question of whether spatial interdependencies influenced benefit generosity during the Golden Age. In sum, a verdict by Collier and Messick (1975: 1305) is still true today: 'Although the literature on social security provides considerable evidence that diffusion is present, only limited attention has been given to systematic analyses of patterns of diffusion.'

Mechanisms of policy diffusion and their relevance for welfare state generosity

The basic assumption in the policy diffusion literature is that political actors do not implement policies independently of each other (Dolowitz and Marsh, 2000; Franzese and Hays, 2007). Diffusion denotes a process in which the adoption of a certain policy in one or more countries leads to policy changes in other countries (Strang, 1991). Even though diffusion and spatial interdependencies are often used synonymously, we regard spatial interdependencies as precondition for policy diffusion. But why should a national government be concerned with social policy decisions taken in other countries? And why should we expect spatial interdependencies when it comes to welfare generosity in the first place?

Different strands of literature discuss a wide range of distinct but closely related mechanisms that may promote policy diffusion. These mechanisms include lesson drawing (Rose, 1993), policy-oriented learning (Sabatier, 1987), social learning (Hall, 1993), Bayesian learning (Meseguer, 2009), emulation or competition (Dobbin et al., 2007). By now, a systematic integration of and a sharp discrimination

between these different concepts is missing at the theoretical as well as at the empirical level. To some extent, they are based upon different ontological assumptions and some are competing while others are complementary. However, the main intention of this paper is *not* to test the different mechanisms underlying policy diffusion but rather to investigate whether there is empirical evidence for the presence of policy diffusion at different stages of welfare state development.

The quantitative international comparative literature typically distinguishes between the following mechanisms that may lead to policy diffusion among nations (Elkins and Simmons, 2004).

*Learning and emulation*⁴ denote that governments draw lessons from policies that have turned out to be successful or inappropriate elsewhere or mimic the policy trends prevalent within their peer group. Learning and emulation require information related to best practice or policy failure. A prerequisite for this to happen is cross-national communication. With regard to social policy there is, in fact, considerable evidence that already the period of welfare state formation was characterised by a significant exchange of information. International congresses of experts, unions and workers, and governmental commissions studying social legislation abroad are indicative of dense international networks of communication that even stretched across continents (Rodgers, 1998) and contributed to the spread of knowledge about social institutions, programmes and policies. After its foundation in 1919, for example, the International Labour Organization (ILO) became a 'promoter of international best practice' as it 'passed a large number of norm-setting conventions and recommendations in all fields of social insurance' (Kuhnle and Sander, 2010: 78). During the post-war period, the progress in terms of communication technologies, Europeanisation and, more recently, globalisation considerably increased communication flows between nations and thus the probability of policy learning across space.

Competition emphasizes the strategic behaviour of governments related to economic competition. The basic assumption is that countries particularly look at those nations with which they compete and adjust their strategy to the competitor's choice (Lee and Strang, 2006: 890). While anything but new, it

can be argued that the changes in the international political economy over the past decades have increasingly put countries under pressure to respond to the economic and social policies adopted in other countries. In particular, the tax and welfare state is seen to be exposed to international market pressure. More specifically, international competition is assumed to promote policies designed to attract foreign capital and international business (Dobbin et al., 2007; Simmons and Elkins, 2004). If, for example, a competing country raises its social standards, the rival has an incentive to defect in order to reap a competitive advantage resulting from lower labour costs. The same economic rationale implicates that any retrenchment of welfare benefits in a given country puts competing countries under strain to adopt a similar policy. In other words, welfare state generosity is a strategic cue ball of economic competition. However, competition does not necessarily implicate a race to the bottom. It is, for example, conceivable that countries increase benefit generosity in order to attract high-skilled labour. Another instance of a race to the top is regime competition during the Cold War (Obinger and Schmitt, 2011).

A further mechanism of policy diffusion emphasised in the literature is *coercion*. It occurs 'whenever an external political actor forces a government to adopt a certain policy' (Holzinger and Knill, 2005: 781). However, coercion is rather unlikely to occur in advanced democracies as it presupposes asymmetric power relations. Even though contemporary EU conditionality vis-a-vis Greece is a major exception, coercion did not play a great role in the past in our sample of long-term democracies.

Overall, two hypotheses are examined. First, we assume that diffusion has shaped benefit generosity of advanced welfare states in the post-war period. Given the increase in information flows and growing economic integration over time, we assume, second, that policy diffusion is more pronounced in the aftermath of the Golden Age.

Data and method

Our dependent variable is the net replacement rate for an average production worker (APW) offered by three welfare state programmes, namely old age

pensions, work accident, and sickness and unemployment insurance. Data are taken from the Social Citizenship Indicator Program (Korpi and Palme, 2007) and are available for 18 OECD countries at 5-year intervals between 1950 and 2000. Benefits offered by the three programmes under consideration are granted through national legislation and include collectively bargained programmes provided that (i) the state contributes to programme financing or (ii) the programme came into existence through a law.⁵ Since replacement rates may vary by family status and benefit duration, we followed Korpi and Palme (2003: 443) and calculated a replacement rate that reflects the average of four components (that is, the replacement rate for a single person vs a four-person family and short term vs long-term benefit generosity). The replacement rate of pensions is the average of the APW replacement rate for a single person and a couple.⁶ Figure 1 shows for 18 democracies the development of the average benefit generosity offered by the three programmes between 1955 and 2000. Although these charts mask substantial cross-national differences, one can see a clear turning point in all programmes between 1975 and 1985. After a period of a marked expansion of welfare state generosity, almost all countries have, albeit to a different extent, imposed benefit cutbacks since the late 1970s (Korpi and Palme, 2003). The existence of a clear turning point motivated us to distinguish between two sub-periods in the subsequent empirical analysis.

We use spatial econometrics⁷ to examine whether policy diffusion accounts for national trajectories. Spatial interdependencies can be modelled by including a spatial term as a regressor (spatial lag model) (Anselin, 2003). The general spatio-temporal autoregressive model (STAR) can be expressed as follows:

$$y = \rho * Wy + \phi * My + X\beta + \varepsilon \quad (1)$$

where y is the replacement rate, ρ is a spatial autoregressive coefficient and $W*y$ the weighted average of the dependent variable (spatial lag). The spatial weight matrix W is a matrix with $N \times T$ rows and $N \times T$ columns. Each cell represents the degree of connectivity between two countries at a specific point in time. The effect on a focal country is the weighted sum of outcomes across countries (Lee and

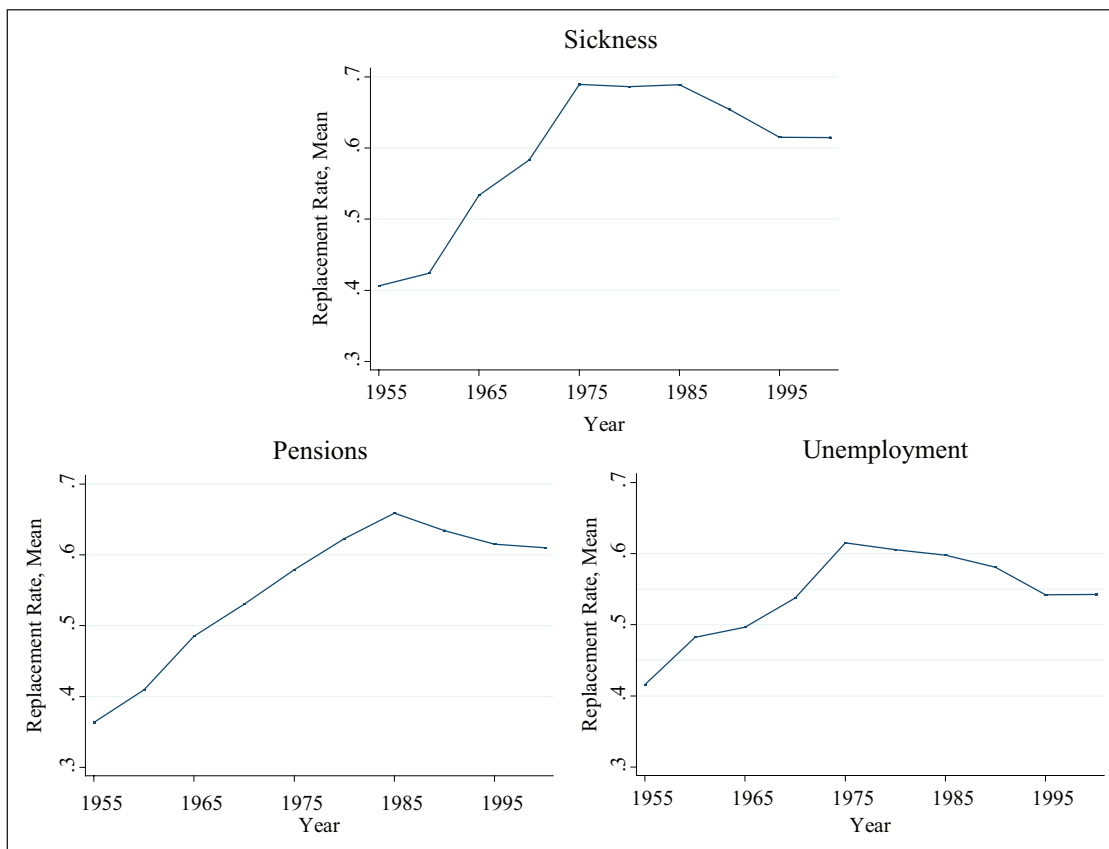


Figure 1. Average net replacement rate in 18 OECD countries, 1955–2000. Source: Korpi and Palme (2007).

Strang, 2006). M^*y denotes the lagged dependent variable and X is a set of exogenous explanatory variables.

Before analysing the different diffusion mechanisms, we need to establish whether there is spatial association in the dependent variable. Moran's I as a measure of global spatial autocorrelation indicates spatial correlation for all estimated models.

True spatial interdependence has to be carefully distinguished from other sources of spatial association. Spatial patterns in the dependent variable resulting from cross-national interdependencies occur because countries interact with others. Spatial patterns, however, might also be caused by common shocks, by temporal trends or by unobserved spatial heterogeneity. For example, an external shock might force nations to react in similar ways. Another possible source of spatial patterns is that similar national

preconditions drive countries to move in the same direction. The only way of disentangling spatial interdependence from its alternatives is to model them and include appropriate right-hand side variables (Franzese and Hays, 2007, 2008; Plümer and Neumayer, 2010: 215). A failure to account for such alternatives will bias the spatial lag coefficient. To control for common shocks, we added year dummies. Furthermore, a lagged dependent variable captures common trends and temporal dynamics. Including a lagged dependent variable has the disadvantage of accounting for the largest part of the variance in the dependent variable and of absorbing the explanatory power of the other substantial right hand variables. However, the focus of this paper is to guarantee reliable results for the spatial lags and *not* to identify the substantive influence of the control variables. Therefore, the procedure can be seen as a

conservative test strategy for the hypotheses. To cope with unobserved spatial heterogeneity unit fixed effect models are estimated.⁸

In the empirical analysis, we analyse instantaneous spatial interdependencies. The estimation of instantaneous spatial interdependencies causes several methodological problems. The spatial lag on the right hand side of the equation is a weighted average of the left hand side variable. Therefore the spatial lags are endogenous and covary with the residuals. We estimate spatial maximum likelihood models since spatial maximum likelihood estimation provides consistent and efficient parameter estimates in the case of instantaneous interdependencies (Franzese and Hays, 2007, 2008; Hays, 2009).⁹

In the empirical analysis, we proceed as follows. First, we analyse for each welfare state programme whether different spatial interdependencies do exist over the entire period (cf. Table 1). Second, we take a closer look at the spatial lags that turned out to be empirically relevant in Table 1 to get a more comprehensive understanding of the relevance of spatial interdependencies during different sub-periods (cf. Table 2). We distinguish between the Golden Age and the post-Golden Age period. The year in which the cross-national average change of the programme-specific replacement rate turns out to be negative is taken as cut off point to distinguish between the two periods (cf. Figure 1).¹⁰ To test whether policy diffusion mechanisms vary between the two sub-periods, we include two diffusion variables, one weighting social policies during the Golden Age, whereas the second one captures social policies in the period of retrenchment. The variables are generated via cross-products of the spatial lag with a period dummy.

Measurement of the weight matrices and the control variables

Policy diffusion should particularly be present between closely related countries. The literature distinguishes several factors that shape the intensity of cross-national relations and thus the nature of interdependencies. Our analysis relies on the following three standard measures of connectivity between countries.

First, *geographical proximity* may increase the intensity of communication between countries (Simmons and Elkins, 2004; Weyland, 2006). Countries located in close geographical proximity are directly accessible to each other and typically demonstrate a substantial exchange of information. A policy enacted next door has, therefore, a particular immediacy and an exemplifying effect for domestic policy-makers. Hence, neighbouring states are assumed to influence each other more strongly than countries located on opposite sides of the globe (Weyland, 2006). To take geography into account, the spatial weight matrix captures the distance between countries. Each cell of the matrix contains the inverse distance between the respective national capitals. A small distance between two countries therefore is associated with a high weight. Germany, for example, as Austria's closest neighbour, has the highest weight, while the lowest value is assigned to New Zealand as the country with the greatest distance to Austria.

Second, *cultural propinquity* should facilitate a transnational exchange of information. The concept of 'family of nations', for example, suggests that there exist groups of countries closely linked by a common language, historical ties, a common religion or cultural heritage (Castles, 1998). It is thus more likely that political actors will mimic the policy trends prevalent within their 'family of nations' or cultural reference group. Cultural ties should, in principle, give salience to new models and policy-makers will tend to study them closely. Moreover, a common language is the lingua franca of information flows. In sum, a diffusion of social rights should therefore be more pronounced among countries sharing a similar cultural background (cf. Lee and Strang, 2006: 889; Simmons and Elkins, 2004: 175). The spatial lag indicating the affiliation to the same family of nation is a binary variable which takes the value one if two countries belong to the same family of nations. The affiliation to a specific family of nations was assigned according to Castles (1993) and Obinger and Wagschal (2001).¹¹

Third, connectivity between countries can be attributed to close *economic ties* such as trade relations. It is plausible that competition and the exchange of information vary with the intensity of

Table I. Dependent variable: replacement rate.

Independent variables	Pensions			Unemployment			Sickness		
	I	II	III	IV	V	VI	VII	VIII	IX
Replacement rate _{t-1}	.574** (.059)	.564** (.059)	.566** (.059)	.534** (.058)	.549** (.059)	.538** (.059)	.620** (.056)	.613** (.061)	.609** (.056)
Trade openness	-.002** (.0006)	-.002** (.0006)	-.002** (.0006)	-.0002 (.0009)	5.91 × 10 ⁻⁵ (.0009)	-.0003 (.0009)	-.0006 (.001)	-.0003 (.001)	-.0004 (.001)
Left government	-.0005* (.0002)	-.0004* (.0002)	-.0005* (.0002)	8.44 × 10 ⁻⁶ (.0003)	1.34 × 10 ⁻⁵ (.0003)	5.22 × 10 ⁻⁵ (.0003)	.0001 (.0003)	.0002 (.0004)	.0001 (.0003)
Institutions	.038 (.070)	.033 (.069)	.031 (.070)	.013 (.097)	.026 (.099)	.028 (.099)	.002 (.113)	.017 (.114)	.002 (.112)
GDP per capita (log)	.096* (.039)	.105** (.039)	.097* (.039)	.008 (.051)	.016 (.053)	.008 (.053)	.325 (.631)	.322 (.639)	.086 (.659)
GDP growth	.201 (.404)	.098 (.402)	.105 (.405)	.509 (.568)	.518 (.580)	.525 (.578)	.092 (.059)	.091 (.060)	.271† (.631)
Share of social security contributions in financing	.075† (.043)	.073† (.042)	.070* (.042)	-.002 (.038)	-.003 (.039)	-.002 (.039)	.063 (.050)	.070 (.051)	.059 (.050)
Unemployment rate				-.012** (.004)	-.011** (.004)	-.011** (.004)			
Elderly population (aged greater than 65 years)	-.018 (.594)	-.329 (.612)	-.005 (.587)						
Spatial lag (distance)				-.459* (.212)			-.289† (.171)		
Spatial lag (families)		.129† (.083)			-.122 (.117)			-.005 (.091)	
Spatial lag (trade)			.170 (.134)			-.186 (.167)			-.259† (.146)
Wald chi ²	804.71***	748.08***	793.77**	753.25**	726.08**	744.74**	1156.59**	1073.01**	1346.73**
N	180	180	180	180	180	180	180	180	180

Notes: All regressions include fixed period and unit effects; these coefficient estimates are suppressed to conserve space.

*p<0.05, **p<0.01, ***p<0.001; †p<0.10.

Table 2. Dependent variable: replacement rate.

	Pensions	Unemployment	Sickness
Independent variables	I	II	IV
Spatial lag –families Golden age	.152†(.092)		
Spatial lag – families Retrenchment	.083 (.119)		
Spatial lag – trade Golden age			–.347* (.160)
Spatial lag – trade Retrenchment			–.225 (.148)
Spatial lag – distance Golden age		–.698** (.275)	–.359† (.189)
Spatial lag – distance Retrenchment		–.263 (.254)	–.198 (.200)

Notes: All regressions include fixed period and unit effects; those coefficient estimates and the coefficients of the control variables are suppressed to conserve space.

* $p < 0.05$, ** $p < 0.01$, † $p < 0.10$.

such economic interdependencies. Weighting replacement rates with the sum of exports plus imports between two countries as a percentage of the total trade volume allows a check on whether policy diffusion between trading partners occurs. The US, for example, is Australia's most important trading partner, accounting for 25 percent of Australian total trade volume. The value in the cell capturing the influence of the US on Australia therefore is .25. All spatial weight matrices were row-standardised by dividing each cell in a row by that row's sum.

In addition, we include a set of *control variables* that are frequently used in quantitative welfare state research. Since functionalist accounts have argued that rising economic wealth should lead to greater welfare effort, we use the gross domestic product (GDP) per capita (log) as a measure for a country's level of economic development (Wilensky, 1975). The annual rate of economic growth controls for short-term effects caused by the business cycle. The share of the population aged over 65 years and the level of unemployment (as a percentage of the civilian labour force) are controls for social need. The index of constitutional structures compiled by Henisz (2010) measures institutional impacts on welfare state development. High values of this indicator denote substantial institutional barriers for policy change. Since institutional veto points tend to impede policy change, a negative coefficient is expected. Actor preferences and power resources are measured by the percentage of the cabinet seats held by Social democratic and Communist parties. We

also use trade openness of the economy as a control. In accordance with the efficiency thesis, a negative impact on the replacement rates is expected. Moreover, basic programme characteristics, notably the mode of financing, may influence the capacity of policy-makers to alter benefit generosity. There is some evidence that benefits financed from contribution payments are much more immune against retrenchment as they are seen as a 'deferred wage' in exchange for future welfare benefits. Likewise, the willingness to pay should be higher if there is a tight nexus between contribution payments and welfare benefits. We, therefore, expect that contributory funded welfare states will provide higher replacement rates. We include a variable that measures for each programme the share of contribution payments by employees and employers as a percentage of total funding. Finally, the 5-year lagged level of the programme-related replacement rate is used to control for different stages of programme maturation, path dependency and common trends. The measurement of all variables is described in detail in the appendix (Table A1).

Empirical analysis

Table 1 presents the estimation results for each programme without explicitly distinguishing between the Golden Age and the more recent era of welfare state transformation. In four models, the coefficients of the spatial lags are statistically significant at least

at the 10 percent level. However, policy diffusion varies by programme. For *pensions*, representing the biggest welfare state programme in virtually all nations, we find a positive and statistically significant coefficient for the spatial lag mapping cultural affiliations between nations (model II). This suggests that countries orient themselves towards the benefit levels of those countries that belong to the same family of nations. By contrast, the spatial lags capturing geographical proximity (model I) and trade relations (model III) fail to reach statistical significance.

While in the field of pensions cultural affinities across nations seem to matter, geographical proximity influences the diffusion of benefit generosity offered by *unemployment insurance*. The estimated impact is negative, however. This is in line with the studies on labour market spending by Franzese and Hays (2006) and Kemmerling (2007) who interpret the negative sign of the spatial lag as indicative of free-riding behaviour among neighbours.

The findings related to *sickness benefits* also reveal a negative impact of geographic proximity. In addition economic relationships matter for benefit generosity (model IX). Again, the coefficient of the spatial lag is negative and statistically significant. Broadly speaking, if trade partners increase sickness cash benefits by ten percentage points, the replacement rate in the focal country decreases by 3.3 percentage points.

Overall, this evidence supports our first hypothesis that spatial interdependencies have to be considered in comparative welfare state analysis. Previous inquiries have therefore neglected an important factor influencing welfare state dynamics. A disregard of spatial interdependencies, however, may have serious consequences since it likely leads to biased estimators.

Moreover, the findings have revealed that in most cases countries did not move in the same direction in terms of welfare generosity. Positive feedbacks can be only observed for pensions and are restricted to countries affiliated to the same family of nations. The spatial lags for the remaining programmes show a negative sign. A plausible but somewhat speculative interpretation of this finding is that diffusion is driven by competitive pressure. More specifically, this evidence might indicate the presence of

beggar-thy-neighbour strategies. In contrast to pensions, unemployment and sickness cash benefits cover the working age population with direct implications for labour costs. Hence these programmes are more likely to be subject to the strategic behaviour of governments in an international competitive environment. This interpretation is supported by the fact that significant negative relations of this kind are only relevant among economically related countries and nations located in close geographical proximity. A general problem, however, is that the standard measures of connectivity such as geographical distance and cultural proximity are partly catch-all indicators that measure multiple kinds of connections between countries.¹² For example, one may argue that geography overlaps to some extent with trade relations and cultural affinities.

The results for the *control variables* are basically in line with the theoretical assumptions, if the findings across all four programmes are compared. As expected, the 5-years lagged replacement rate is consistently positive and statistically significant at the 1 percent level in all models. Furthermore, rich countries offer higher replacement rates since the coefficient of the GDP per capita (log) is positive in all models and significant at the 5 percent level in models I to III (pensions). The impact of GDP growth is positive but insignificant in all models except for model IX. Furthermore, and in accordance with the efficiency thesis, strong involvement in the global market corresponds with lower benefit generosity (particularly in terms of pensions). With the exception of unemployment benefits, contribution financed programmes provide higher replacement rates. In terms of pensions, the coefficient is significant at the 10 per cent level. In contrast to our theoretical assumption, there is no influence of political institutions.¹³ Moreover, there are some programme-specific results. A high percentage of cabinet seats held by leftist parties is associated with lower pension benefits. In addition, countries with high rates of unemployment offer lower unemployment benefits. Hardly surprisingly, it would seem that a generous replacement rate is difficult to maintain in times of high unemployment.

The previous analysis focused on a long time span ranging from 1960 to 2000. It is well known

that the oils shocks in the 1970s caused a turning point in welfare state development (see also Figure 1). While in the Golden Age the overall developmental pattern was extension of benefit generosity, the more recent period is also characterised by benefit cut-backs. Therefore, we now examine the relevance of policy diffusion in different phases of welfare state development. We distinguish between two sub-periods (1960–1980 and 1980–2000, respectively) and re-estimate those models of Table 1, showing a statistically significant spatial lag coefficient. We include a spatial lag for each sub-period. According to our second hypothesis policy diffusion should be of less importance during the Golden Age.

Table 2 reports the empirical results and reveals several remarkable findings. The spatial lag coefficient related to the Golden Age period achieves statistical significance in all models, while all coefficients of the spatial lags remain insignificant in the second period. This surprising result indicates that spatial interactions shaped the expansion of the welfare state during the Golden Age rather than the more recent period, and holds for all programmes and irrespective of the imputed connectivity between countries. The insignificant coefficients for the spatial lag in the post-Golden Age period are at first glance counter-intuitive, given the deep changes in the international political economy and growing international communication. A possible explanation for the period-specific findings could be the, arguably, greater leeway for policy change in the expansionary economic climate of the Golden Age than in the subsequent era of austerity. This also includes the possibility of playing a lone hand in social affairs. In addition, policy-makers had more scope to strategically respond to policy choices of related countries in the early post-war decades. By contrast, the autonomy for policy-making in the following period was constrained by growing socioeconomic problem pressure. Governments increasingly had to respond to similar challenges but without incurring electoral blame. These conflictive economic and political constraints may explain the insignificant coefficients in the second period for which we neither find a downward spiral in benefit provision nor positive feedback effects among countries. In any case, more systematic research is needed to further examine the

driving mechanisms underlying policy diffusion at different stages of welfare state development.

Conclusion

For many years macro-quantitative welfare state research has been afflicted with a ‘methodological nationalism’ (for example, Zürn, 2005) in the sense that countries were treated as independent units. In line with the recent ‘spatial turn’ in comparative public policy studies, this paper has examined whether, in the post-war period, benefit generosity in 18 Western democracies was shaped by welfare state generosity in other countries. We were able to show that policy diffusion is present but varies by programme and over time. More specifically, three findings stand out. First, policy diffusion has to be taken into account in empirical studies analysing cross-national variation in welfare state generosity. Many previous empirical inquiries have, thus, ignored an important source of social policy variation in advanced democracies. Second and rather surprisingly, the diffusion of benefit generosity was particularly relevant during the Golden Age, that is, a period with considerable autonomy for national policy-makers. It has been of lesser importance in the recent decades that were characterised by less favourable economic conditions and mounting social challenges. Third, policy diffusion mechanisms vary by programme. Positive feedback effects within a family of nations play an important role in terms of pensions, which absorb the lion’s share of social expenditure in most countries. In contrast, diffusion in unemployment and sickness insurance seem to be mainly driven by competitive pressures.

Some of these findings are startling and certainly require further research. One avenue of future research should pay more attention to the factors responsible for the strong spatial interactions during the Golden Age identified in this paper. Moreover, our findings for the post-Golden Age period are preliminary as the SCIP data are only publicly available up until 2000. Hence the 2000s, a period of marked welfare state transformation and growing EU impacts (for example, via the Open Method of Co-ordination) on national welfare state reforms, are

spared from our analysis. Furthermore and independent of the period of analysis, more research is required on how social policy diffusion is conditioned by or interacts with domestic political factors such as power resources, party ideology and institutional settings. We hope that this paper can serve as a starting point to address these issues in future research.

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Notes

1. Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Sweden, Switzerland, United Kingdom, United States.
2. British polymath Sir Francis Galton pointed in 1889 to the problem that units of observations are not necessarily independent ones. Comparative analysis is particularly afflicted with this problem due to interdependencies between countries or societies (Goldthorpe, 1997: 9).
3. In addition, there are several studies dating back to the 1970s that deal with the diffusion of social welfare policies in individual states of the US (for example, Gray, 1973).
4. Usually, learning and emulation are discussed separately in the literature. However, empirical research suffers from considerable difficulties in discriminating clearly among these two mechanisms (Gilardi, 2010: 650). We therefore take a pragmatic view by pulling them together.
5. See The Social Citizenship Indicator Program (SCIP). General Coding Comments (for Codebook, see <https://dspace.it.su.se/dspace/bitstream/10102/1522/1/Codebook.pdf>).
6. Even though net replacement rates are influenced by the tax system and refer to model households, we are convinced that they represent a much better indicator of welfare generosity than social spending.
7. Spatial Econometrics refers to analytical techniques and estimation methods that are designed to address spatial dependences among observations. Spatial dependence means that observations at location i depend on other observations at other locations $j \neq i$ (LeSage and Pace, 2008).
8. In addition, a spatial diagnostic test on the residuals of the non-spatial model using OLS gives further information concerning the nature of the spatial association. The Robust Lagrange Multiplier Test against the spatial lag or spatial error alternative might indicate whether the spatial association is caused by unobserved factors (Anselin et al., 1996; Franzese and Hays, 2007, 2008).
9. All models were estimated with Stata 11.0.
10. The cut-off point in terms of the unemployment and sickness replacement rates is 1975. 1985 is the turning point with regard to old age pension replacement rates.
11. The Anglo-Saxon family includes Canada, Japan, New Zealand, the United Kingdom, and the United States. Austria, Belgium, Germany, France, Ireland, Italy, the Netherlands and Switzerland are assigned to the continental family. Denmark, Finland, Norway and Sweden are members of the Nordic family.
12. We also tested alternative measurements of geographical proximity and cultural affiliation such as length of common border, the presence of a common border or a common language and EU membership. In each case, the coefficients of the spatial lags are statistically insignificant (not reported – results can be provided upon request).
13. Alternative measures of political institutions also remain statistically insignificant.

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Appendix

Table A1. Measurement and sources of the variables.

Variable	Description	Source
Replacement rate	Net replacement rate for an average production worker (APW) <i>Unemployment and sickness programme</i> : average of four components: (a) a single person vs (b) a four-person family, and (c) short term (first week with benefits) vs (d) long term (26 weeks with benefits). <i>Old age pensions</i> : average of the APW replacement rate for a single person and a couple	Korpi and Palme, 2007 (SCIP)
Trade openness	Sum of imports and exports as a percentage of GDP in constant prices (2005)	Heston et al., 2009 (PWT 6.3)
Leftist government	One-year lagged 5-year-average of cabinet seats of Social democratic and communist parties as a percentage of total cabinet posts	Data kindly provided by Manfred G. Schmidt, University of Heidelberg
Institutions	Polcon III: Index of political constraints that estimates the feasibility of policy change (for details see Henisz (2002))	Henisz, 2010
Share of social security contributions in financing	Share of contribution payments by employees and employers as a percentage of total funding	Korpi and Palme, 2007 (SCIP)
Unemployment rate	Unemployment rate as a percentage of civilian labour force	Armingeon et al., 2008 for the period from 1960–2000 Maddison, 1995 for the years 1950 and 1955
Elderly population aged over 65 years	Elderly population age 65 years and over as a percentage of the total population	Data on elderly: Korpi and Palme, 2007 (SCIP) Data on population: Heston et al., 2009 (PWT 6.3)
GDP per capita (log)	Logarithm of real GDP per capita (Constant Prices: Chain series) (2005) PWT 6.3 Missing values for Germany 1950–1965 were estimated using the growth rate of the real GDP per capita provided by Maddison (1995)	Heston et al., 2009 (PWT 6.3); Maddison, 1995
GDP growth	Compound annual growth rate of real GDP per capita (1950–1955 etc.); missing values for Germany 1950–1965 were interpolated using the growth rate of the real GDP per capita provided by Maddison (1995)	Heston et al., 2009 (PWT 6.3); Maddison, 1995
Weighting matrix – distance	Inverse distance between the capitals in km	http://www.globetrotter.de/
Weighting matrix – trade	Sum of exports and imports of goods and services between two countries as a percentage of the total trade volume	International Monetary Fund (IMF) Direction of Trade Statistics (various years)
Weighting matrix – families of nations	Binary variable (1=affiliation to the same family of nation; 0=affiliation to different families of nations)	Castles, 1998; Obinger and Wagschal, 2001