WORKING PAPERS IN ECONOMICS

No 599

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June 2014

EFMD
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ACCREDITED

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Abstract

This note studies the impact of immigration on welfare state generosity in 12 Western European countries. In estimations not coping with the possible endogeneity problem, there are indications of a negative relationship between immigration and welfare state generosity. However, when the distance to the Balkan wars are used as a source of exogenous variation in the immigrant share, as to overcome potential endogeneity in mobility across countries, our findings suggest that an increase in the immigrant share does not decrease welfare state generosity.

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1. Introduction

Alesina, et al. (2001) show that in countries (as well as in US states) with higher racial fragmentation redistribution is lower. A possible explanation for this is that people support welfare spending and redistribution to their own ethnic group, but not to other ethnic groups. As argued by Caplan (2012) immigration could thus be expected to make the welfare state smaller, since more immigrants reduce the welfare state support of natives. However, Rodrik (1998), and Mayda and Rodrik (2005) suggests that when there are high external risks, individuals will demand more social security and therefore a larger welfare state. Following this line of argument Finseraas (2008) argue that immigration increases the perceived exposure to risk, indicating that immigration could increase welfare state generosity. One might also argue that immigration gives a higher share of the population that is clearly in need of the welfare state. The natives might become more in favor of solidarity in general, and the welfare state in particular, when they get reminded of that the world is truly an unjust world. It may be hard to not support generosity when it is so obvious that many people really need help. A fourth possibility is that keeping the same insurance level as before becomes very expensive when immigration increases; this forces societies to become less generous, not because people supports the welfare state less, but because it simply becomes too expensive to keep the previous insurance level. Thus there may be opposing mechanisms at work regarding the effect of immigration on welfare state generosity. The aim of the present paper is to investigate if increases in the share of foreigners have decreased welfare state generosity in Western Europe.

It is well documented that welfare state generosity has decreased since the 1980s (Allan and Scruggs, 2004, Korpi and Palme, 2003). There is also evidence that increased ethnic diversity in an area can make people less willing to support redistribution (Dahlberg, et al., 2012). To what extent increased diversity leads to lower welfare generosity is less studied, but Soroka, et al. (2006) find that increases in the migrant stock was associated with lower increases in social welfare spending in 18 OECD countries 1970-1998. However, as pointed out by Korpi and Palme (2003), and Allan and Scruggs

(2004) social welfare spending is not a good measure of welfare generosity. Using an index based on citizen rights to social insurance is a better way of measuring welfare state generosity than using expenditure-based measures. What we would like to measure is to what extent the welfare state actually insures the individual from income loss, not governmental spending per se.

In the present paper we study the relationship between welfare state generosity and the immigrant share in 12 Western European countries 1980-1999. Since the choice of where to migrate may be directly affected by welfare state generosity identification of the effects of immigrants on generosity is challenging. E.g. people may choose to move to countries with high or low welfare state generosity, and countries with high (low) generosity may be more (less) reluctant towards immigration. Following Angrist and Kugler (2003), and Speciale (2012) closely, the distance from the Balkan wars are used as a source of exogenous variation in the immigrant share, to overcome potential endogeneity in mobility across countries. The findings suggest that an increase in the immigrant share does not decrease welfare state generosity as measured by the generosity index.

The rest of the paper is organized as follows: Section 2 includes a presentation of the data sources used, and a description of the data. In Section 3 the empirical strategy and the empirical results are presented. Section 4 concludes by discussing the findings and pointing to some issues for future research.

2. Data and descriptive statistics

The welfare benefit generosity index (Generosity) is obtained from Scruggs (2006). The index is based on net income replacement rates, workforce coverage, length of qualifying periods, and duration of benefits in sickness insurance, unemployment insurance, and pensions. High scores indicate a more generous system, and the index varies theoretically from 0 to 64. The data covers 18 OECD countries (13 from Western Europe) for the period 1971-2002. Using an index based on citizen rights to social

insurance is generally viewed as a better way of measuring welfare state generosity than using expenditure-based measures, since the latter are for example directly related to changes in GDP. Thus, an economic downturn can appear as an increase in welfare-state generosity when using expenditure based measures. Changes in the dependent population may also mask cuts or expansions at the individual level: if unemployment increases while the individual right benefits decrease, spending measures may not capture the change on the individual level. More importantly, what we would like to measure is to what extent the welfare state actually insures the individual from income loss, not governmental spending. These arguments have been developed in greater length by and Korpi and Palme (2003), and Allan and Scruggs (2004).

Good data on the number of immigrants in a country covering many countries and many years is sparse, in the present paper we use what we believe is the best available data. The main independent variable in this paper is Foreign which builds on data from OECD International Migration Statistics on the stock of foreigners, and population data from the World Development indicators. Foreign is defined as foreign citizen recorded in the population register, in line with previous studies using the same identification strategy (Angrist and Kugler, 2003, Speciale, 2012). This means that countries that are generous in letting immigrants become citizens will appear to have fewer immigrants than they actually do have, this problem should, however, be larger in the longer run since citizenship is not granted very fast in any of the investigated countries. In Denmark asylum seekers and all persons with temporary residence permits are excluded, but for Germany asylum seekers living in private households are included. For the Netherlands asylum seekers are included. For several countries the documentation is unclear about how asylum seekers are treated in the statistics (Svensson, et al., 2012).

Our control variables are meant to represent a "standard" model of welfare state policy. Here, we have been inspired by prolific large-N studies of government partisanship, including Korpi and Palme

(2003), Allan and Scruggs (2004), as well as other more recent studies (Rothstein, et al., 2012). Included are trade openness (exports and imports as a share of GDP) from Heston, et al. (2011), and financial openness (a measure of liberalization of current transactions ranging from 0 to 8) from Huber, et al. (2004) (originally from Quinn (1997)), as measures of economic globalization. To control for business cycles we include growth in GDP per capita in constant prices from Heston, et al. (2011), the percentage unemployed (Armingeon, et al., 2008), and the government budget deficit as a share of GDP (IMF, 2007). We also control for corporatist wage bargaining ((Huber, et al., 2004); originally from (Quinn, 1997)), and executive veto power, which takes the value 1 if there is an executive with constitutional veto power over laws passed by the legislature, 0 otherwise (Regan and Clark, 2010). These two variables are included since it may be the case that they decrease the probabilities of retrenchment or expansion. All variables used in the paper were taken from the secondary source provided by the QoG Social Policy Dataset (Svensson, et al., 2012).

For 12 Western European countries we have information on all variables for at least 9 years and at most 20 years between 1980 and 1999, we thus have an unbalanced panel. Of the 13 Western European countries included in the generosity data, France lacks sufficient observations on the share of foreigners and is therefore excluded from the analysis. In total we have 191 year/country observations. The countries included are: Austria, Belgium, Denmark, Finland, Germany, Ireland, Italy, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom. Descriptive statistics are presented in Table 1. The generosity index varies from 18 (United Kingdom) to 45 (Sweden) with a mean of 32. The share of immigrants varies from almost zero (Finland) to 19 percent (Switzerland)[1], with a mean of 5.5 percent. Even though the variation between countries is larger, there is clearly variation within countries as well. Descriptive statistics of the instrumental variables used is also

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[1] Switzerland having the highest share of immigrants might be surprising at a first glance. But Switzerland has a lot of immigrants from other EU countries. The issue of different groups of immigrants is discussed in the conclusions.

presented in Table 1, a discussion of the instruments and the identification strategy is found below

(Section 3).

Table 1. Descriptive statistics

Variable	Mean	Minimum	Maximum	Overall std.dev	Between std.dev	Within std.dev
Generosity	31.731	17.992	45.378	7.193	7.237	1.579
Immigrants	5.533	0.347	19.169	4.420	4.336	0.974
Trade openness	63.900	32.719	135.427	21.052	19.237	9.760
GDP growth	2.044	-7.451	9.457	2.166	0.572	2.097
Unemployment	7.572	0.185	17.147	4.243	3.817	2.178
Right share	32.040	0	100	32.884	23.526	24.298
Financial openness	7.269	5	8	1.051	0.618	0.876
Veto points	0.709	0	1	0.709	0.451	0.153
Budget deficit	-2.964	-15.731	9.733	4.541	3.282	3.150
Corporatism	3.635	1	5	1.132	0.962	0.665
Instruments						
Bosnia war instrument	0.087	0	1.153	0.266	0.048	0.263
Inter-war instrument	0.249	0	1.294	0.419	0.122	0.404
Kosovo war instrument	0.101	0	1.256	0.303	0.052	0.299

3. Estimation and results

3.1 Naïve estimations

As a first step in studying the relationship between immigration and welfare state generosity we do

not consider the possible endogeneity of the Foreign variable. We estimate several variants of the

following equation:

$$Generosity_{it} = \propto_i + \theta_t + \beta Immigrants_{it-1} + \gamma \boldsymbol{x_{it-1}} + \varepsilon_{it}, \tag{1}$$

where i denotes the country, and t denotes the year. α_i is a country dummy, θ_t is a time dummy,

Immigrants$_{it-1}$, is the share of immigrants in country i period t-1, $\boldsymbol{x}_{it-1}$ is a vector of control variables,

and ε_{it} is an unobserved time invariant disturbance term. The estimations are presented in Table 2.

Table 2. Welfare generosity as dependent variable, 1980-1999

	(1)	(2)	(3)	(4)	(5)	(6)
	RE	RE	RE	FE	FE	FE
Immigrants (% of pop)$_{t-1}$	-0.419	-0.935***	-1.619***	-0.594	-0.757	-0.495
	(0.511)	(0.186)	(0.232)	(0.797)	(0.876)	(0.840)
Trade openness$_{t-1}$		0.180***	0.176***		-0.076	-0.060
		(0.061)	(0.043)		(0.064)	(0.059)
GDP growth$_{t-1}$		-0.485*	-0.447**		-0.037	-0.035
		(0.294)	(0.189)		(0.048)	(0.048)
Unemployment$_{t-1}$		-1.174***	-0.839**		-0.199*	-0.241*
		(0.369)	(0.370)		(0.109)	(0.113)
Right share$_{t-1}$			-0.017			-0.012**
			(0.027)			(0.005)
Financial openness$_{t-1}$			0.902			0.334
			(0.874)			(0.326)
Veto points$_{t-1}$			-9.721***			1.150
			(2.620)			(1.065)
Budget deficit$_{t-1}$			0.251			-0.110
			(0.230)			(0.063)
Corporatism$_{t-1}$			1.281			0.504**
			(0.866)			(0.172)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	191	191	191	191	191	191
Number of countries	12	12	12	12	12	12

Notes: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Explanatory variables lagged one year.

According to a Wald test we reject the null hypothesis that all year coefficients are jointly equal to zero, therefore year effects are included in all models. In the first three columns in Table 2 we present random effects regressions with successively more control variables. As more control variables are included the negative relationship between the immigrant share and welfare state generosity gets stronger. It should, however, be noted that if the relationship between immigration and generosity partly goes via some of the control variables (for example via unemployment or right share in the cabinet), including them may mask the true relationship. We do not want to control for variables which are themselves potentially influenced by immigration. A Hausman test suggests that fixed effects should be included in our model, thus columns 4-6 in Table 2 includes country fixed effects. Also in these regressions the relationship is negative, but never statistically significant. Since we may have problems with endogeneity, these results should though not be interpreted in a causal

way, in the next section we therefore turn to IV estimations trying to control for endogeneity in immigration.

3.2 IV estimates

To identify the effect of increased immigration on welfare state generosity we follow the identification strategy used by Angrist and Kugler (2003), and later by Speciale (2012) closely, where the Balkan wars are considered an exogenous shock in immigration in Western European countries. Angrist and Kugler (2003) show that the number of Yugoslavs among European immigrants increased sharply during the Balkan wars (Bosnia war 1991-1995, and Kosovo war 1998-1999), as well as the inter-war years (1996-1997). Thus, the distance from the Balkan conflicts is a good predictor of the foreign share in Western European countries. In our instrumental variable (IV) estimations the excluded instruments are therefore: the distance from Sarajevo * dummy for 1991-1995 (Bosnia war years), the distance from Sarajevo * dummy for 1996-1997 (inter-war years), and the distance from Pristina * dummy for 1998-1999 (Kosovo war years). The distance is the miles (divided by 1000) to the nearest city with a population of at least 100,000.

The first stage results (Table 3) show that the share of immigrants is indeed correlated with the chosen instruments. This is supported by the F-statistic for excluded instruments, which is clearly above the rule of tumb threshold of 10 (15.20, 12.82, an 14.77). This implies that the instruments are good predictors of the share of immigrants, and that the predicted values have enough variation to be used as instruments. The Sargan test (overidentification test) suggests that the instruments are valid. This implies that the instruments do not seem to affect welfare generosity directly, but only the share of immigrants, as we have assumed. A test for endogeneity rejects that the share of immigrants can be treated as an exogenous regressor, so the IV-estimations are preferred over the ordinary fixed effects estimations.

Table 3. Immigrants as dependent variable, first stage regressions

	(1) FE-IV	(2) FE-IV	(3) FE-IV
Bosnia war instrument	-2.749***	-2.608***	-2.624***
	(0.631)	(0.645)	(0.548)
Inter-war instrument	-2.343***	-2.189***	-2.208***
	(0.403)	(0.403)	(0.394)
Kosovo war instrument	-2.913***	-2.574***	-2.554***
	(0.884)	(0.956)	(0.828)
Controls	No	Three	All
Country dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Observations	191	191	191
Number of countries	12	12	12
F-stat. of excl. instr.	15.20	12.82	14.77
Sargan p-value	0.928	0.810	0.572
Test for endogeneity	0.000	0.000	0.000

Notes: First stage regression. Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. Control variables are lagged one year. The included controls in column 2 are: Trade openness, GDP growth, and Unemployment. In column 3 also Right share, Financial openness, Veto points, Budget deficit, and Corporatism are included.

In Table 4 we present the results from fixed effects IV regressions. When we consider the instrumental variable (IV) estimations the coefficient actually turns positive, but rather small and only marginally statistically significant. These results are contrary to the correlations found in Table 2. The results are very similar if we include longer lag lengths of the immigration variable (these results are available upon request). As noted above, if the relationship between immigration and generosity partly goes via some of the control variables (for example via unemployment or right share in the cabinet), including them may mask the true relationship. Even though our parameter estimates are not statistically significant different from zero, immigration may effect welfare state generosity modestly upwards or downwards.

Our results suggests that the estimates without instruments are biased negatively (-0.594 <0.444) and this may be seen as surprising. One might for example believe that people would move to countries that they expect to increase their generosity. However, there might be other factors

related to generosity that affects immigration. One possibility is that countries with more generous welfare states are also more restrictive towards immigration.

Table 4. Welfare generosity as dependent variable, 1980-1999, IV estimations

VARIABLES	(1) FE-IV	(2) FE-IV	(3) FE-IV
Immigrants (% of pop)$_{t-1}$	0.444	0.186	0.545*
	(0.335)	(0.361)	(0.321)
Controls	No	Three	All
Country dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Observations	191	191	191
Number of countries	12	12	12
F-stat. of excl. instr.	15.20	12.82	12.82
Sargan p-value	0.928	0.810	0.810
Test for endogeneity	0.000	0.000	0.000

Notes: Robust standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. In the IV regressions, the endogenous regressor is Immigrants. Control variables are lagged one year. The included controls in column 2 are: Trade openness, GDP growth, and Unemployment. In column 3 also Right share, Financial openness, Veto points, Budget deficit, and Corporatism are included.

4. Conclusion

This paper studies the impact of immigration on welfare state generosity in 12 Western European countries. Following Angrist and Kugler (2003), and Speciale (2012), the distance from the Balkan wars is used as a source of exogenous variation in the immigrant share, to overcome potential endogeneity in mobility across countries. We found no statistically significant effect of immigration levels on welfare state generosity. If anything, the instrumental variable estimations suggests small increases in welfare state generosity following increases in the share of immigrants. Our study has fairly good power and only quite moderate negative effects are within the confidence interval.

To interpret the results correctly we must, however, consider what local average treatment effect (LATE) we are actually measuring. Our findings show that the inflow of Yugoslav immigrants to Western European countries following the Balkan wars during the 1990s, did not decrease welfare state generosity in Western Europe. Since the Yugoslav immigrants were mainly low skilled and had a

labor market participation rate similar to that of other non-EU immigrants (Angrist and Kugler, 2003), we could expect our findings to apply more generally. However, our findings are not as relevant for immigrants less similar to the 1990s inflow of Yugoslavs, e.g. highly educated immigrants from other European countries.

Our findings do not support the hypothesis suggesting that increased immigration lead to lower welfare state generosity. One potential explanation for this is presented by Rodrik (1998), suggesting that when there is a high external risk natives will demand more social security. Another possibility is that solidarity was boosted by having people in need entering European countries. Yet another possibility is that changes in the arrangement of welfare state regimes might have taken place, without leading to a reduction in general citizen rights to social insurance.

Clayton and Pontusson (1998) notice a change in welfare-state design in the member states of the European Union, where less weight is given to universalistic components in exchange for greater weight on social-insurance-based welfare. Since social-insurance benefits are typically based on income from employment, such programs sidestep the political problem of foreigners taking advantage of generous benefits (Clayton and Pontusson, 1998). Thus, it may be the case that immigration may have decreased welfare state generosity in areas not picked up by the welfare generosity index used here. Studying the immigration effects on the universalistic components of the welfare state is therefore of importance for future research. If such changes in the welfare state have taken place this is no proof of people supporting welfare spending and redistribution to their own ethnic group, but not to other ethnic groups. The changes can be explained by that the welfare state becomes more costly when there is more immigrants with needs, at the same time as people's preferences for a welfare state is unchanged.

References

Alesina, Alberto, Glaeser, Edward, Sacerdote, Bruce, 2001. Why doesn't the United States have a European-style welfare state? Brookings Papers on Economic Activity 2001, 187-254.

Allan, James P., Scruggs, Lyle, 2004. Political partisanship and welfare state reform in advanced industrial societies. American Journal of Political Science 48, 496-512.

Angrist, Joshua D., Kugler, Adriana D., 2003. Protective or counter-productive? Labour market institutions and the effect of immigration on EU natives. The Economic Journal 113, 302-331.

Armingeon, Klaus, Weisstanner, David, Engler, Sarah, Potolidis, Panajotis, Gerber, Marlène, Leimgruber, Philipp, 2008. Comparative Political Data Set 1960-2005, Institute of Political Science, Berne.

Caplan, Bryan, 2012. Why should we restrict immigration? Cato Journal 32, 5-24.

Clayton, Richard, Pontusson, Jonas, 1998. Welfare-State Retrenchment Revisited: Entitlement Cuts, Public Sector Restructuring, and Inegalitarian Trends in Advanced Capitalist Societies. World Politics 51, 67-98.

Dahlberg, Matz, Edmark, Karin, Lundqvist, Heléne, 2012. Ethnic diversity and preferences for redistribution. Journal of Political Economy 120, 41-76.

Finseraas, Henning, 2008. Immigration and preferences for redistribution: An empirical analysis of European survey data. Comparative European Politics 6, 407-431.

Heston, Alan, Summers, Robert, Aten, Bettina, 2011. Penn World Table Version 7.0. In: Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, (Ed.

Huber, Evelyne, Ragin, Charles, Stephens, John D., Brady, David, Beckfield, Jason, 2004. Comparative Welfare States Data Set. In: Northwestern University, University of North Carolina, Duke University and Indiana University, (Ed.

IMF, 2007. World Economic Outlook Database.

Korpi, Walter, Palme, Joakim, 2003. New politics and class Politics in the context of austerity and globalization: Welfare state regress in 18 countries, 1975-95. The American Political Science Review 97, 425-446.

Mayda, Anna Maria, Rodrik, Dani, 2005. Why are some people (and countries) more protectionist than others? European Economic Review 49, 1393-1430.

Quinn, Dennis, 1997. The Correlates of Change in International Financial Regulation. American Political Science Review 91, 531-551.

Regan, Patrick, Clark, David, 2010. Institutions and Elections Project. In: Binghamton University, State University of New York, (Ed.

Rodrik, Dani, 1998. Why do more open economies have bigger governments? Journal of Political Economy 106, 997-1032.

Rothstein, Bo, Samanni, Marcus, Teorell, Jan, 2012. Explaining the welfare state: power resources vs. the Quality of Government. European Political Science Review 4, 1-28.

Soroka, Stuart, Banting, Keith, Johnston, Richard, 2006. Immigration and redistribution in a global era. In: Bowles, Sam, Bardhan, Pranab, Wallerstein, Michael, (Eds.), Globalization and egalitarian redistribution. Princeton University Press and Russel Sage Foundation, pp. 261-288.

Speciale, Biagio, 2012. Does immigration affect public education expenditures? Quasi-experimental evidence. Journal of Public Economics 96, 773-783.

Svensson, Richard, Dahlberg, Stefan, Kumlin, Staffan, Rothstein, Bo, 2012. The QoG social policy dataset. In: University of Gothenburg, The Quality of Government Institute.