Why does the amount of income redistribution differ between the United States and Europe? The Janus face of Switzerland

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Abstract. In this paper, the amount of income redistribution in the United States, the European Union, and in Switzerland is compared and empirically related to economic, political, and behavioral determinants elaborated in the literature. Lying in between the two poles, data on Switzerland provides evidence about the relative merits of competing hypotheses. It tips the balance against the economic explanation, which predicts more rather than less income redistribution in the United States compared to the EU in general. It only weakly supports the political model linking proportional representation and multiparty structure (which also characterize Switzerland) to redistribution; yet the Swiss share of transfers in the GDP is low. Behavioral explanations receive a good deal of support from the case of Switzerland, two countries that share with the United States the belief that hard work rather than luck, birth, connections, and corruption determine wealth. In this way, the Janus faces of Switzerland may help to explain the difference in the amount of U.S. and EU income redistribution.

Keywords. Income redistribution, Income mobility, Openness, Proportional representation, Beliefs, Religiosity.

JEL. D31, D63, H53, I31.

1. Introduction

The objective of this paper is to compare the amount of income redistribution of the United States, the European Union (EU), and Switzerland. While a European country, Switzerland is not a member of the EU and has some institutional features reminiscent of the United States. Like the Roman god Janus it is therefore predicted to "look both ways". Indeed, EU social programs will be found to be more extensive, generous, and pro-poor and tax systems to be more progressive than those

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of United States. Invariably, Switzerland stands in between. What are the economic, political, and behavioral factors that may be responsible for this? Possible economic explanations are the variance and skewness of the before-tax income distribution, the social costs of taxation, expected future changes in income for median voters and volatility of income over time. However, Alesina *et al.* (2001) argue that these economic determinants cannot explain observed differences in redistributive policies between the United States and the EU. They find that while the before-tax income in the United States has higher variance and more skewness than in the EU, redistribution in the United States is less although the deadweight losses from taxation seem to be about the same. Switzerland will be shown to lie in between. On the other hand, the "Prospect of Upward Mobility" (POUM) hypothesis, originally suggested by Hirschman & Rothschild (1973) and formulated by Benabou & Ok (2001), is confirmed by Alesina & La Ferrara (2005) who empirically show that people with high expected future income do not favor redistribution in the United States[2]. In the EU, income mobility is relatively low, with Switzerland again situating in between but having a lower level of public expenditure than the EU average. Thus, contrary to theoretical predictions, we observe a negative correlation between income mobility and public expenditure on the aggregate level. As to political explanations, Alesina & Glaeser (2004) cite U.S. institutions that prevent minorities from gaining political power which could be used for income redistribution. At the federal level, the United States applies majority rule for election to the Congress and for president; moreover, courts have consistently been rejecting popular attempts at redistribution. The constitutions of EU member countries are more oriented toward proportional representation and less toward protection of private property. Switzerland on the one hand has a degree of proportional representation that even exceeds the EU average; on the other hand, its courts strongly protect private property (cf. Moser, 1994). Extensive direct democratic control might serve to limit public welfare spending while enforcing efficiency in redistribution. But then, Switzerland is comparable to the EU average when it comes to the amount of transfers and subsidies. The behavioral explanations for redistribution (Fong *et al.*, 2006) emphasize reciprocal altruism. This hypothesis states that U.S. voters dislike giving money to the poor whom they perceive as lazy. Moreover, Gilens (1999) and Alesina & Glaeser (2004) argue that troubled race relations are a major reason for the absence of an American welfare state. EU citizens, by way of contrast, tend to believe that the poor have been unfortunate, and until recently, immigration from non-white countries has been too limited to make race a relevant category. Between these two poles, Switzerland seems

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[2] Using a data set from Russia, Ravallion & Lokshin (2000) have shown that even those who are currently rich may tend to support redistribution if they expect their welfare to fall. This is known as a "tunnel effect". Molnár & Kapitány (2006a); Molnár & Kapitány (2006b) find that people who have no clear knowledge about the immediate and the distant future favor redistribution more than those with negative expectations.

to be similar to the United States in all of the three dimensions cited above, giving rise to the correct prediction that it spends relatively little on public welfare. It should be noted that all of these explanations abstract from the incentives of politicians, acting as entrepreneurs, to redistribute income and wealth in order to secure (re)election (cf. Brunner & Meckling, 1977; Cukierman & Meltzer, 1986). This ultra-political explanation hinges on the fact that the cost of redistribution usually takes on the form of efficiency losses that have to be borne by all citizens, whereas its benefits can be channeled to those lobbies that provide support or those voters who are pivotal at the next election. Of course, the institutional differences cited above make it easier for politicians to pursue their objectives in some countries and more difficult in others. Yet, politicians have a permanent incentive to push back those constraints that limit their freedom of action. In all, this hypothesis predicts that redistribution occurs largely regardless of preferences in the population. For simplicity, it will not be pursued in detail but may serve as an explanation of why the amount of redistribution keeps growing over time (for an analysis in the case of social health insurance, see Zweifel, 2007). The structure of this paper is as follows. In Section 2, the size and structure of redistribution in the United States, selected EU countries, and Switzerland are presented. Section 3 tests the economic explanations for redistribution, which are contradicted by the case of Switzerland. Section 4 again finds that political explanations are not confirmed by Swiss experience. Section 5 presents behavioral determinants which are not only successful in explaining the differences between the United States and the EU but are also confirmed by Switzerland. Section 6 provides a final assessment of the determinants of public social spending in a multivariate model. Section 7 concludes.

2. Size and structure of redistribution in the United States, the EU, and Switzerland

In this section, the basic facts concerning redistribution in the United States, the EU, and Switzerland are presented, starting first with government spending and revenue, and then turning to regulation designed to achieve income redistribution, such as minimum wage laws.

2.1. Government spending

Table 1 shows the size and composition of government expenditure. Total government expenditure in the EU-15 averages 46 percent of GDP; it reaches 53 percent in France and even 56 percent in Sweden but only 37 percent in the United States. Switzerland is just below the U.S. value with 36 percent. However, it is the share of transfers (subsidies and social benefits) where differences are most marked.

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Table 1. *Composition of general government expenditure in percent of GDP, 2006*

country	total government expenditure	consumption (appropriation account)			subsidies	social benefits	fixed investment
		total consumption	*goods and services*	*wages*			
US	36.6	15.8	6.1	9.7	0.4	12.0	3.3
EU-15	46.0	20.4	10.2	10.2	1.2	16.3	2.5
Austria	49.2	18.0	8.7	9.3	3.1	18.3	1.1
France	53.4	23.6	10.5	13.1	1.5	17.8	3.4
Germany	45.7	18.3	11.1	7.2	1.2	18.6	1.4
Sweden	55.5	26.8	11.1	15.7	1.6	16.7	3.1
UK	45.0	22.0	10.6	11.4	0.4	13.0	1.8
Switzerland	36.3	10.9	2.8	8.1	4.0	12.0	2.3

Source: authors' calculations based on data from OECD Economic Outlook database (No 82, Dec. 2007). Details may not sum to totals because of excluded categories.

In fact, the sum of these categories amounts to 17.5 percent of GDP in the EU compared to 12.4 percent in the United States. Here Switzerland sides with the EU, its share being 16 percent.

Table 2 presents the breakdown of social expenditure (which notably includes old-age benefits). First, the United States is far below the EU average with 15 and 24 percent of GDP, respectively. Switzerland even exceeds the EU average with 26 percent, coming close to full-fledged welfare states such as Germany (27 percent) and France (29 percent). The main reason are old-age benefits, where U.S. public expenditure makes up a low 5 percent of GDP, compared to the EU share of 9 and the Swiss share of 12, respectively. In relative terms, the differences in family benefits are even more pronounced. Here, the United States spends one-fifth of the EU value (0.4 compared to 2.2 percent of GDP in the EU-15), with Switzerland once more falling in between (1.2 percent). However, this does not necessarily mean that countries such as France, Germany, or Sweden are pro-poor because social security systems typically redistribute from the young to the old.

2.2. Government revenue

Government expenditure of a country may be pro-poor; yet if it is financed in a highly regressive manner, the net effect of government activity may turn pro-rich. Table 3 summarizes the composition of government revenue in the EU, the United States, and Switzerland.

Table 2. *Public social expenditure in percent of GDP, 2001*

country	total	old-age	family	unemployment	health	incapacity	other
US	14.7	5.3	0.4	0.5	6.2	1.1	1.2
EU-15	23.8	8.8	2.2	2.1	6.1	2.9	1.7
Austria	26.0	10.7	2.9	1.3	5.2	2.5	3.4
France	28.5	10.6	2.8	2.9	7.2	2.1	2.9
Germany	27.4	11.7	1.9	2.3	8.0	2.3	1.2
Sweden	29.8	9.2	3.8	2.4	7.4	5.2	1.8
UK	21.8	8.1	2.2	0.6	6.1	2.5	2.3
Switzerland	26.4	11.8	1.2	1.0	6.4	3.8	2.2

Source: OECD (2004) Social Expenditure database.

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First of all, the EU governments claim a much larger share of the GDP (46 percent on average) than their U.S. counterpart (34 percent). The figures do not match precisely those of Table 1 because in 2006, governments were accumulating debt at a different pace. The Swiss government showed the best budgetary discipline among the countries sampled, its expenditure share in the GDP of 36 percent exceeding its revenue share of 35 percent by relatively little. Second, governments substitute direct taxes by social security contributions. In the United States, the ratio of the former to the latter is 14/7, while in the EU it amounts to 12/16, and in Germany, even 11/17. With a ratio of 15/7, Switzerland definitely resembles the United States here. Thus, in terms of direct taxation, some EU countries might look like tax havens compared to the United States and Switzerland but they make up by charging much higher social security contributions. Whether this reflects a more marked pro-poor orientation depends on the relative progressiveness of social security and income taxation. By way of contrast, indirect taxation is generally regarded as regressive. The ratio of direct to indirect taxes is 14/7 for the United States, 12/14 for the EU, but 15/7 for Switzerland. On this account, both the United States and Switzerland look more pro-poor than the EU, with France (12/15) marking an extreme.

However, not only does the status quo reveal important differences; developments during the last few decades differ, too. Table 4 tracks the government expenditure categories "subsidies" and "social benefits" of Table 1 (complemented by "current transfers", not evidenced there) since 1980.

Table 3. *Composition of general government revenue in percent of GDP, 2006*

Country	Total receipts	Tax revenue				Social security contributions	Property income	Other
		total	direct taxes		indirect taxes			
			households	businesses				
US	34.0	13.6	10.3	3.3	7.3	7.0	0.8	5.3
EU-15	45.6	12.2	9.3	2.9	13.6	15.5	0.9	3.4
Austria	47.8	13.1	10.7	2.4	14.0	16.0	1.2	3.5
France	50.8	11.8	8.7	3.1	15.4	18.3	0.7	4.6
Germany	43.8	10.6	9.2	1.4	12.1	17.3	0.6	3.2
Sweden	57.9	20.2	16.5	3.7	17.1	13.2	2.2	5.2
UK	41.9	17.2	13.1	4.1	12.8	8.4	0.6	2.9
Switzerland	35.4	14.9	11.3	3.6	7.2	7.1	1.4	4.8

Source: authors' calculations based on data from OECD Economic Outlook database (No 82, Dec. 2007).

By that time, countries such as Austria, France, and Germany were full-fledged welfare states with GDP shares above 20 percent, while the United States stood at 13 percent. Since then, it has caught up somewhat, reaching some 17 percent in 2006. While data for 1980 are not available for Switzerland, in 1990 its share of 15 percent was close to that of the United States. However, Swiss transfer payments have increased particularly fast since then, attaining 21 percent in 2006, not far from the EU average of 22 percent anymore.

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Summing up the findings so far, Switzerland resembles the EU in terms of its government expenditure but is more similar to the United States in terms of its government revenues. It used to be close to the United States with regard to transfers but has been approaching the EU during the last two decades.

Table 4. *Government expenditure on subsidies, social benefits and other current transfers in percent of GDP, 1980-2006*

country	1980	1990	2000	2006
US	12.9	13.7	14.9	16.6
EU-15	21.3	21.8	21.7	21.7
Austria	25.5	26.6	27.4	26.1
France	21.3	22.7	24.2	25.4
Germany	21.5	21.2	24.0	23.2
Sweden	25.9	27.8	25.9	25.7
UK	16.3	15.1	17.0	18.4
Switzerland	n.a.	14.9	18.9	20.5

Source: authors' calculations based on data from OECD Economic outlook database (No. 82, Dec. 2007).

Table 5. *Membership in charitable organizations in percent of total population, 1995-1997*

country	active member	inactive member	not a member
US (1995)	27.3	14.9	57.8
Germany (1997)	7.9	13.8	78.3
Sweden (1996)	6.7	15.8	77.5
Switzerland (1996)	5.8	15.3	78.9

Source: World Values Survey.

2.3. Redistribution through private charity

The preceding data suggest that EU countries and Switzerland provide more public welfare than the United States. However, the World Values Survey (Table 5) shows that Americans engage in more private provision of welfare through charity than EU and Swiss citizens. Roberts (1984) hypothesizes that public provision of welfare in part crowds out private charity. Potential donors, seeing government transfers on the rise, have a weakened motivation to give. Being altruistic, they might also be willing to donate through the government. However, the symmetry of substitution effects leads to the prediction that those who donate privately prefer to limit public transfers.

Table 6. *Charitable giving as a share of GDP, 2005*

country	percent of GDP
US	1.67
France	0.14
Germany	0.22
Ireland	0.47
Netherlands	0.45
UK	0.73
Switzerland	0.37

Sources: Charities Aid Foundation, ZEWO Foundation.

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Therefore, a low level of public expenditure in the United States could be partially explained with high private donations. Table 5 tends to support this view. In the United States, 27 percent of the population report to actively participate in a charitable organization, compared to 8 percent in Germany and a mere 6 percent in Switzerland. Conversely, only 58 percent of U.S. citizens indicate not to be involved in any charitable organization, whereas their European counterparts are close to the 80 percent level. Table 6 shows that the amount of charity giving in the US is also higher than in EU countries and Switzerland, suggesting that public transfers cause a reduction in voluntary donations in Europe, as predicted by the crowding-out literature. On this score, Switzerland definitely sides with the EU rather than the United States.

3. Economic explanations of income redistribution

One of the main economic explanations of income redistribution states that the more marked the pre-tax income inequality, the higher the demand and the political pressure for redistribution. This is the basic idea behind the Romer-Roberts-Meltzer-Richard (RRMR) model[3] stating that the lower the income of the median voter relative to the income of the average voter, the higher the level of taxation and redistribution.

Table 7. *Gini coefficients in the U.S., EU, and Switzerland, 1960-2005*

country	1960	1970	1980	1990	2000	2005
US	42.3	39.3	39.7	42.7	45.7	45.0
EU-15	35.1	35.1	31.2	29.6	30.3	29.9
Austria	-	29.5	31.6	26.3	29.2	26.0
France	49.0	39.8	36.4	28.0	28.2	28.0
Germany	38.0	39.2	36.6	30.8	29.8	28.0
Sweden	-	29.5	19.4	21.9	27.2	23.0
UK	25.5	25.4	25.3	33.5	34.6	35.0
Switzerland	-	-	35.9	33.8	31.8	31.1

Source: WIID database, World Institute for Development Economics Research 2006.

Indeed, U.S. income inequality was high in 1960 (Gini coefficient of 42, see Deininger & Squire, 1996) and has been again increasing since 1970 to reach a Gini of 45 in 2005. In the same period, the average value of EU countries has fallen from 35 to 30. The most notable decrease occurred in France, from 49 to 28. As to Switzerland, the first measurement dates back to 1980. Since then, its Gini coefficient has been decreasing even faster, from 36 to 31 (the U.S. and EU values being 43 and 30, respectively, at the time). Therefore, in 1980 Switzerland lay right in between the two poles but has been approaching the EU fast since. In view of the marked pre-tax income inequality in the United States, combined with low government expenditure and few labor market interventions, the RRMR model finds very weak support by the evidence. Alesina & Giuliano (2009) point out that the main failure of this model rests on its simplistic assumptions, viz.

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[3] Romer (1975); Roberts (1977); Meltzer & Richard (1981).

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the 'one person, one vote' rule and the median-voter outcome. Barenboim & Karabarbounis (2008) show empirically that the very rich have more weight above and beyond the 'one person, one vote' rule in the political process, while the very poor do not vote at all. Neustadt & Zweifel (2009) conduct a discrete choice experiment in Switzerland and elicit willingness to pay for income redistribution. Their analysis of preference heterogeneity with respect to current economic well-being shows that willingness to pay for redistribution increases with income and education, contradicting the RRMR model.
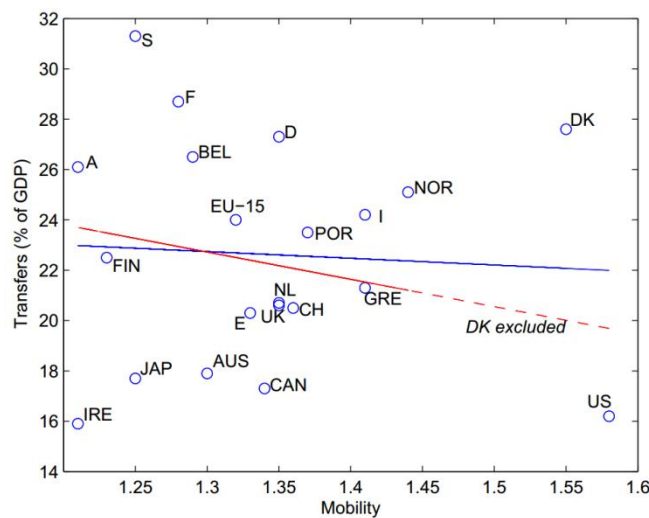
Figure 1: *Relationship $y=\hat{\alpha}+\hat{\beta}x$ between transfers y (% of GDP in 2007) and income mobility parameter x defined as the ratio of the income in the fourth quintile to the income in the third quintile.*

Notes: $\hat{\alpha}$=26.2112, $\hat{\beta}$=−2.6698, $\bar{R}^2$=0.0036 for the whole sample (the *t* statistic is -0.2636, i.e. not significant); $\hat{\alpha}$=36.81, $\hat{\beta}$=−10.838, $\bar{R}^2$=0.0493 if Denmark excluded (the *t* statistic is -0.966, i.e. still not significant). Country labels: A=Austria, AUS=Australia, BEL=Belgium, CAN=Canada, CH=Switzerland, D=Germany, DK=Denmark, E=Spain, F=France, FIN=Finland, GRE=Greece, I=Italy, IRE=Ireland, JAP=Japan, NL=Netherlands, NOR=Norway, POR=Portugal, S=Sweden, UK=United Kingdom, US=United States, EU-15=simple average of old EU member countries without Luxembourg (A, BEL, D, DK, E, F, FIN, GRE, I, IRE, NL, POR, S, UK). Data source: CIA World Factbook 2008.

However, as hypothesized by Benabou & Ok (2001), earnings mobility may dampen a poor but forward-looking voter's enthusiasm for redistribution (for empirical support using U.S. data, see Alesina & La Ferrara, 2005). In their study of willingness to pay for redistribution, Neustadt & Zweifel (2009) use five alternative mobility measures and show that this Prospect of Upward Mobility (POUM) hypothesis receives partial empirical support, albeit for only four of five measures used. However, individuals with no mobility at all display the highest resistance against redistribution, contradicting the POUM hypothesis but underscoring the importance of a high status quo bias. As a partial test, Figure 1 plots public transfers (GDP share) against the ratio of average income in the (relatively wealthy) fourth and average income in the (middle class) third quintile.

Admittedly, this is a rather poor measure of mobility, as discussed in Muren & Nyberg (2005). One would prefer to take into account probabilities of transition from the third to the fourth quintile. However, the data on these transition probabilities are currently available for six countries only (see OECD, 1996). Still, since the quintile transition probabilities are shown to be quite similar among the OECD countries (Muren & Nyberg, 2005), a large inter-quintile income difference can serve as a rough indicator of income mobility. In the United States, the difference between the third and the fourth quintile is indeed large (1.55 or 55 percent more income), whereas it is around 1.3 in the EU on average. When the outlier Denmark (DK in Figure 1) is excluded as an outlier to a negative relationship, the negative slope of the regression becomes slightly more marked, providing weak support for the POUM hypothesis of Benabou & Ok (2001). However, the coefficient of determination remains low, and United States (US in Figure 1) as well as Canada (CAN), Australia (AUS), Japan (JAP), and Ireland (IRE) lie far below the regression line.
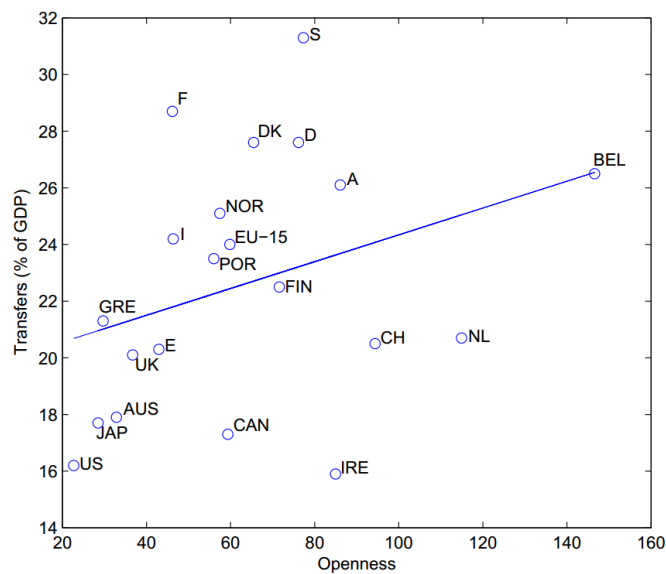

Figure 2. *Relationship $y = \alpha + \beta x$ between transfers y (% of GDP in 2003) and openness x, defined as sum of exports and imports 2007 over GDP in 2007.* **Notes:** $\hat{\alpha}=19.609$, $\hat{\beta}=0.0473$, $\bar{R}^2=0.1094$, *t* statistic is 1.433 (not significant).
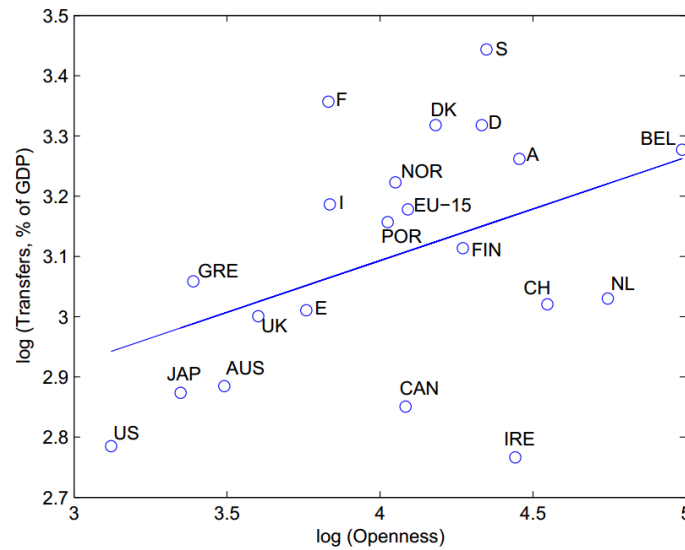**Data source:** CIA World Factbook 2008.

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Figure 3. *Relationship y=̂α+βx between the natural logarithm of transfers y (in % of GDP in 2003) and the natural logarithm of openness x, defined as ratio of the sum of exports and imports 2007 over GDP in 2007.*

Notes: $\hat{\alpha}=2.4068$, $\hat{\beta}=0.1716$, $\bar{R}^2=0.1716$, *t* statistic is 1.977 (significant at the 6.4 percent level).
Data source: CIA World Factbook 2008.

Some authors establish a link between openness of the economy and the level of income redistribution by postulating the compensation hypothesis (Cameron, 1978; Katzenstein, 1985; Garret, 2000; Adsera & Boix, 2002). This hypothesis states that small open economies compensate their losers from international liberalization with government interventions in the domestic economy, mainly with an increase in transfer payments. Higher levels of trade imply growing risks associated with the international business cycle and thereby cause higher levels of income volatility and income inequality. As stated in Section 1, under the veil of uncertainty, risk-averse individuals may be willing to support income redistribution programs, especially if designed to help those who suffered an unexpected loss in their assets (health, wealth, wisdom, i.e. skills). Emphasizing the former effect, viz. that open economies expose citizens to more income volatility because they are subject to external shocks, Rodrik (1998) relates income redistribution to the openness of the economy. Other authors (Adsera & Boix, 2002; Balcells Ventura, 2006) emphasize the latter effect, the increasing inequality based on the idea that openness to trade creates winners and losers within economies. They show that the impact of openness on income redistribution crucially depends on income per capita and the size of potential loser sectors. While trade has a positive effect on the size of the public sector in rich countries (those abundant in high-income factors), it negatively affects the level of income redistribution in poor countries. Figure 2 plots[4] transfers as a share of GDP against an indicator of openness,

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[4] Given that transfers are associated with inefficiencies, one could argue that transfers as a 'type of insurance against the vagaries of openness' should progressively increase with openness. However, a regression of *transfers* on *openness* and $(openness)^2$ yields a negative

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the ratio between the sum of exports and imports and GDP. Indeed, the United States, being a rather closed economy, has the lowest transfer shares. And in general, increased openness does go along with more transfers for 'rich' OECD countries, thus seemingly supporting the result of Balcells Ventura (2006). However, with a t statistic of 1.433, this bivariate regression does not provide conclusive evidence of a positive relationship.

In a next step, Figure 3 plots the natural logarithm of the share of transfers in GDP against the natural logarithm of the indicator of openness as defined above. Now the t statistic has the value of 1.977 and thus implies weak evidence (at the 6.36 percent significance level) of a positive elasticity of transfers as a share of GDP with respect to the indicator of openness. One might argue that openness as defined by Rodrik (1998) fails to measure the impact of foreign trade shocks on the welfare of a population. Shifts in the terms of trade, however, directly indicate changes in the gains from trade a country can reap and hence in welfare. During the period 1960-2006, the U.S. terms of trade exhibited a standard deviation of 0.133 percentage points p.a. While comparable data are lacking for the EU, Austria and Germany come in with 0.05 and 0.085 points, respectively[5]. Once more, Switzerland is in between with 0.106 points. Note that the high U.S. value would lead one to predict a high amount of redistribution, contrary to the empirical evidence. At best, one could argue that social mobility in the United States serves as a substitute for redistributive policies.

On the whole, economic explanations do not seem to be very successful in predicting the amount of income redistribution, at least when relying on government expenditure and transfers as indicators. If one is willing to use Janus-faced Switzerland as a test case, this country is never even close to the regression line. Thus, it causes the balance to be tipped against economic explanations.

4. Political explanations

The United States, the EU, and Switzerland differ in terms of their political institutions. The first aspect relates to the electoral level. The United States has a majoritarian system where the plurality rule is applied in federal elections (i.e. each district delegates the representative with the most votes), while all EU countries (with the exception of the United Kingdom and France) have proportional representation. Proportional representation tends to produce multiparty parliaments and governments, while majority rule favors a strict two-party system as in the United States or a multiparty system dominated by two players as in the United Kingdom. The political science literature (Lizzeri & Persico, 2001; Milesi-

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but insignificant term. The nonlinear relationship between political (and social) openness and welfare is examined by Koster (2008). The author finds weak evidence of nonlinearity for social openness, but no evidence for political openness.

[5] Authors' calculations from OECD Economic Outlook Database, No. 82, Dec. 2007, World Bank and WMM.

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Ferretti *et al.,* 2002; Persson & Tabellini, 2000; Persson & Tabellini, 2003) predicts that proportional representation tends towards universal programs benefitting various groups (pensioners, workers, poor, minorities, etc.), while majority rule results in targeted 'pork barrel' programs. Persson & Tabellini (2000); Persson & Tabellini (2003) find supporting empirical evidence in that countries with proportional representation have GDP share of government expenditure that ceteris paribus is 5 percentage points higher than with majority rule.

Figure 4 illustrates the effect of electoral rules on fiscal policy, plotting transfers as a share of GDP against a measure of proportional representation for most OECD countries. There is indeed weak evidence of a positive correlation. While the EU-15 is close to the regression line, the United States constitute an outlier. This is true of Switzerland too, in spite of its system of proportional representation and a system with several strong parties that is similar to continental EU countries. The reasons for this divergence are discussed below.
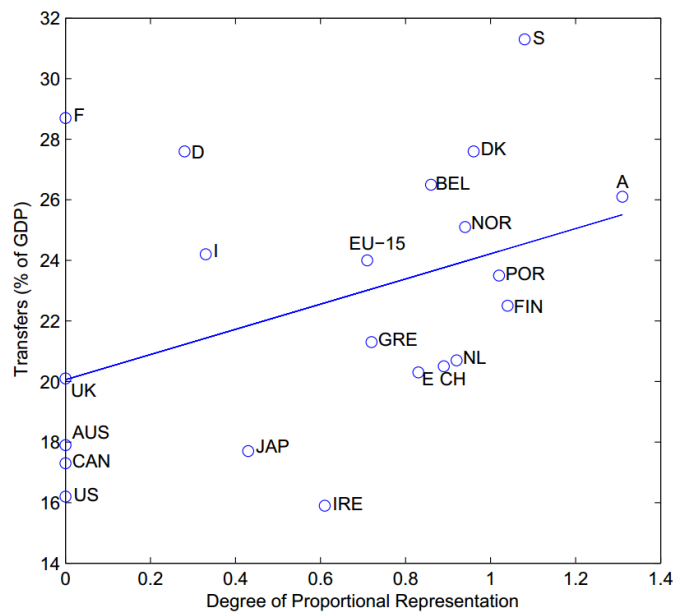

Figure 4. *Relationship $y = \hat{\alpha} + \beta x$ between transfers y (in % of GDP in 2003) and the degree of proportional representation x*

Notes: $\hat{\alpha}$=20.058, $\hat{\beta}$=4.16, $\bar{R}^2$=0.1663, *t* statistic is 1.91 (significant at the 7.22 percent level). Degree of proportional representation is the natural logarithm of the size of electoral districts, defined as the number of electoral districts in a country divided by the number of seats in the lower or single house for the most recent legislature. **Data source:** CIA World Factbook 2008, Persson & Tabellini (2003).

The second aspect of political institutions relates to the government. The United States has a presidential system while all EU countries are parliamentary democracies (with the exception of France, whose government is controlled by the majority in the parliament, however). Presidential regimes at first sight result in a concentration of power; however, they tend to have a stronger separation of powers designed to

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prevent abuse (cf. Persson *et al.,* 1997). Since this abuse goes along with increased government expenditure and transfers to supporting clientele groups, presidential systems are predicted to induce less income redistribution.

The third aspect is the party system. Barriers to entry for parties are particularly high in the United States, likely due to the country's vast size and low population density, both of which help to diffuse social conflict. This has resulted in the absence of a strong socialist party, whereas the European left was able to organize and divulge its ideas, resulting in a higher amount of income redistribution.

The fourth aspect of political institutions of relevance for redistribution is fiscal decentralization. This creates obstacles to an excessive role for the central government in fiscal matters, making it more difficult to tax the rich in some part of the country in favor of the poor localized in other parts. Again, the United States is characterized by a higher degree of fiscal federalism than most EU countries (Inman & Rubinfeld, 1992), which may help explain its lower amount of income redistribution.

As to Switzerland, it is on the U.S. side on items three and four (Supreme Court, fiscal decentralization) but on the EU side on items one and two (proportional representation, low barriers to entry for political parties). However, the distinguishing feature of Switzerland in this context is its direct democracy with popular initiatives and referenda. Feld *et al.,* (2007) find that public expenditure tends to be better tailored to the needs of the electorate in direct than in representative democracies. If the electorate wishes to be pro-poor, Swiss redistributive policies might attain its objectives at a lower value of total transfers than representative democracies. As noted in the context of the first aspect cited (proportional vs. majoritarian representation), this observation is not discriminating because Switzerland is below the regression line in Figure 4. However, the Netherlands and Spain, two countries with almost no direct democratic control, have the same GDP share of transfers as Switzerland. Therefore, direct democratic control cannot alone explain why Switzerland has low transfers in spite of its high degree of proportional representation.

Summing up, four aspects of political institutions seem to be relevant for income redistribution. One of them (degree of proportional representation) could be quantified; it did show the predicted relationship with the transfer share in GDP. Using again Switzerland for corroborating evidence, the country shares institutional features both with the United States and the EU. However, it is unique in its degree of direct democratic control, yet has the same GDP share of transfers as the Netherlands and Spain, two countries with quite different political institutions. Therefore, political explanations appear only slightly more convincing than the economic ones.

5. Behavioral explanations

Behavioral explanations of income redistribution importantly revolve around the concept of imperfect altruism. While prefect altruism is

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exclusively governed by recipients' preferences, imperfect altruism also reflects donor preferences. In particular, it predicts that people will oppose public welfare if they believe that recipients take advantage of the system, a behavior that is often attributed to members of ethnic minorities. Alesina *et al.* (1999), Alesina *et al.* (2001), Luttmer (2001), Alesina & Glaeser (2004), and Luttmer & Singhal (2008) find that people oppose redistribution favoring ethnic or racial groups other than their own as well as minorities that are overrepresented among the poor.
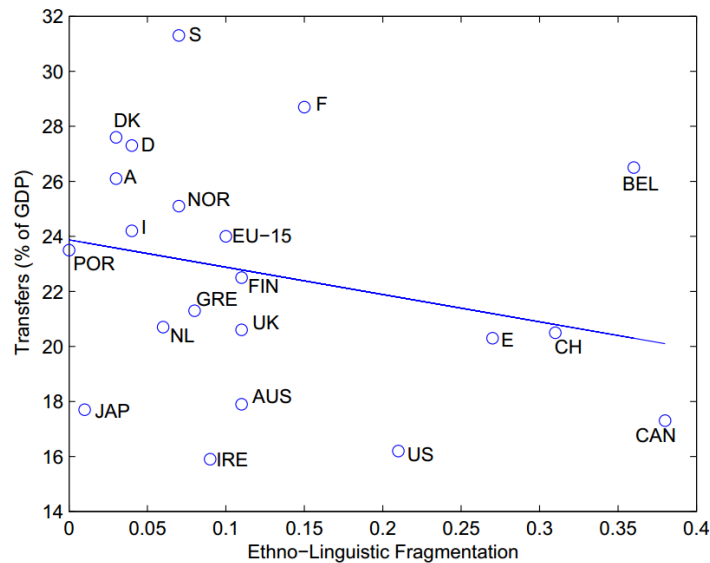
Figure 5. *Relationship $y = \alpha + \beta x$ between transfers y (in % of GDP in 2003) and the ethno-linguistic fragmentation x*

Notes: $\hat{\alpha}$=23.87, $\hat{\beta}$=−9.915, $\bar{R}^2$=0.0675, *t* statistic is -1.18 (not significant). The index of ethno-linguistic fragmentation is the level of lack of ethnic and linguistic cohesion within a country, ranging from 0 (homogeneous) to 1 (strongly fragmented) and averaging five different indices, see Persson & Tabellini (2003).
Data source: CIA World Factbook 2008, Persson & Tabellini (2003).

As a first piece of evidence, Figure 5 plots the bivariate relationship between public transfers and ethno-linguistic fragmentation. While most EU countries are quite homogeneous with respect to ethnicity and language, Belgium and Spain display a degree of heterogeneity that exceeds that of the United States (Canada is the extreme case here). There is a negative correlation, supporting the hypothesis. Switzerland has a high heterogeneity too, reflecting the strong division between the German-speaking, French-speaking, and Italian-speaking parts of the country. However, this time it lies right on the regression line, providing corroborating evidence.
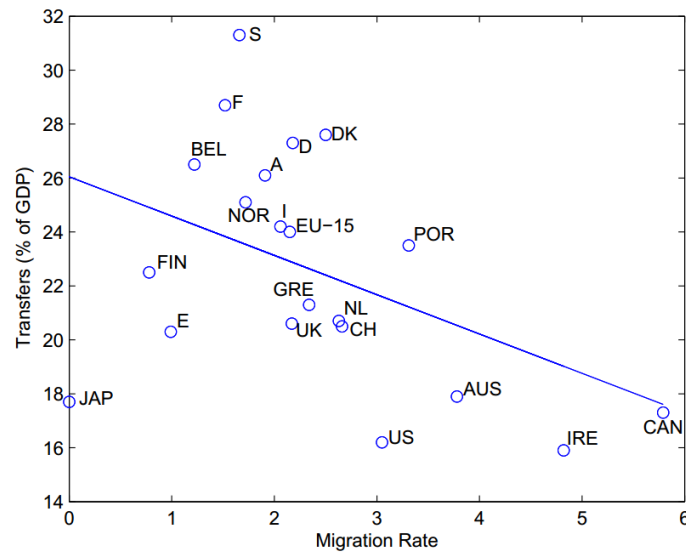
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Figure 6. *Relationship $y = \alpha + \beta x$ between transfers y (in % of GDP in 2003) and net migration rate x*

Notes: $\hat{\alpha}=26.047, \hat{\beta}=-1.458, \bar{R}^2=0.1948$, *t* statistic is -2.093 (significant at the 5.08 level).
Data source: CIA World Factbook 2008.

A second aspect of fragmentation is migration. Immigration serves to increase the heterogeneity of a society. The net migration rate is defined as the difference between the immigration rate and the emigration rate. It would be preferable to consider the immigration rather than the net migration rate. However, data on the immigration rate are available for selected countries only. Still, in all OECD countries under consideration the rate of emigration is significantly lower than the immigration rate. Therefore, the net migration rate can be used as a rough approximation of the immigration rate. As Figure 6 shows, countries with higher net migration rates tend to spend smaller fractions of their GDP on transfers. The corresponding bivariate regression comes very close to conventional significance levels. The United States constitutes an outlier with especially low transfers, presumably due to a third aspect, racial heterogeneity (which is more pronounced there than in the majority of EU countries). Indeed, work by Kinder & Sanders (1996) reveals that racial resentment is the most powerful determinant of whites' (who are overrepresented among payers) opinions on welfare, affirmative action, school desegregation, and the plight of the inner city. Switzerland lies close to the regression line. On the one hand, its rate of net migration and share of foreign population are very high, similar to those of the United States. But on the other hand, being foreign is not necessarily associated with (permanent) poverty, similar to most EU countries.

Following Razin & Sadka (1995), the birth rate may be seen as a third indicator of fragmentation. A high rate of fertility calls for a great deal of intra-family redistribution, which squeezes out public transfers. This argument suggests a negative correlation; however, a positive relationship cannot be excluded due to reverse causality. A high birth rate could be

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argued to trigger a great deal of transfers in the guise of family allowances. Moreover, many governments see family allowances as a means to increase the birth rate. When transfers are plotted against the birth rate, a negative relationship obtains (see Figure 7). The United States has a fertility rate that is only exceeded by Ireland, one-half higher than the EU average, which reflects very low rates in countries such as Germany, Austria, and Italy. Switzerland again lies close enough to the regression line to provide some support to the hypothesis.
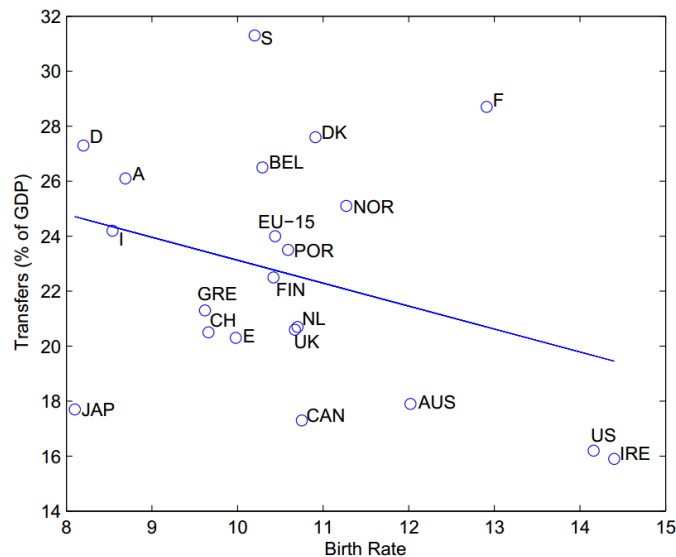
Figure 7. *Relationship y=α+βx between transfers y (in % of GDP in 2003) and birth rate x*

Notes: ˆα=31.469, ˆβ=−0.834, ˉR^2=0.1058, t statistic is -1.526 (not significant).
Data source: OECD, CIA World Factbook 2008.

A fourth behavioral element is beliefs. The hypothesis is that a society who believes that luck, birth, connections, and corruption determine wealth will choose a high degree of redistribution, financed by high taxes, see Alesina & Glaeser (2004) and Alesina & Angeletos (2005). By way of contrast, the conviction that high income and wealth are the result of work effort goes along with little income redistribution. Beliefs do differ sharply between the United States and the EU. Most Americans believe that anyone can get out of poverty by hard work and that the poor remain poor only because they refuse to make the effort. By way of contrast, Europeans generally think that poverty is due to bad luck and not the individual's responsibility. Fong & Oberholzer-Gee (2007) measure the willingness-to-pay for justice in the United States using dictator games. Dictators were given $10 to split between themselves and recipients. The authors find that one third of the dictators are willing to pay one dollar out of ten for obtaining the information whether poverty was due to disability or substance abuse. Finally, Alesina & Giuliano (2009) show that a history of misfortune in the recent past such as unemployment and personal trauma makes people more risk-averse and less optimistic about upward mobility.

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These changes in beliefs are found to have a positive and significant effect on redistribution.

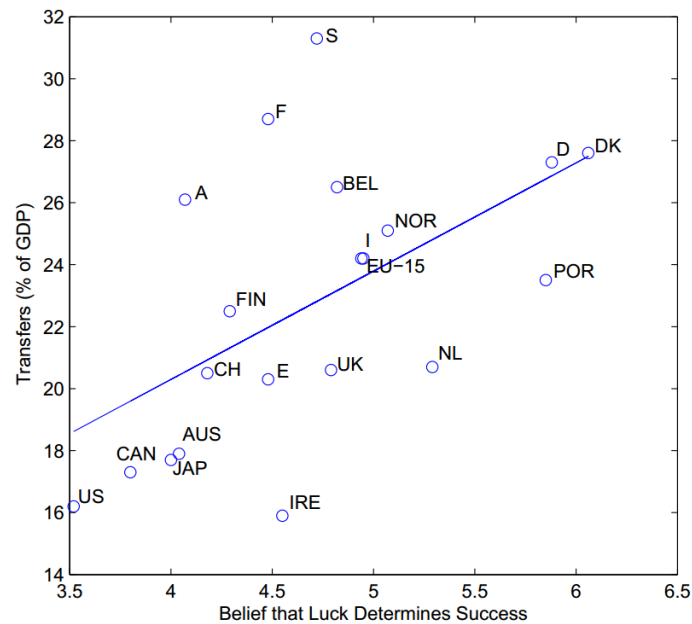**Figure 8.** *Relationship $y=\alpha+\beta x$ between transfers y (in % of GDP in 2003) and the belief x that luck determines success (median value for each country, measured as an index from 1 to 10, with 10 indicating strongest belief).*

Notes: $\hat{\alpha}=6.319, \hat{\beta}=3.495, \bar{R}^2=0.3006$, *t* statistic is 2.778 (significant).
Data Source: OECD, World Values Survey.

Figure 8 plots transfers against a score that ranges from 1 (hard work always brings a better life) to 10 (hard work does not bring any success). The Unites States is the observation closest to the score of 1 but still lies below the regression line. Germany (D) and Denmark (DK) mark the other extreme. With a coefficient of determination of 0.3 and a *t* statistic of 2.778, this is one of two best-fitting bivariate regressions designed to explain the share of transfers in GDP. Here again, Switzerland lies right near the regression line, lending additional support to the hypothesis.
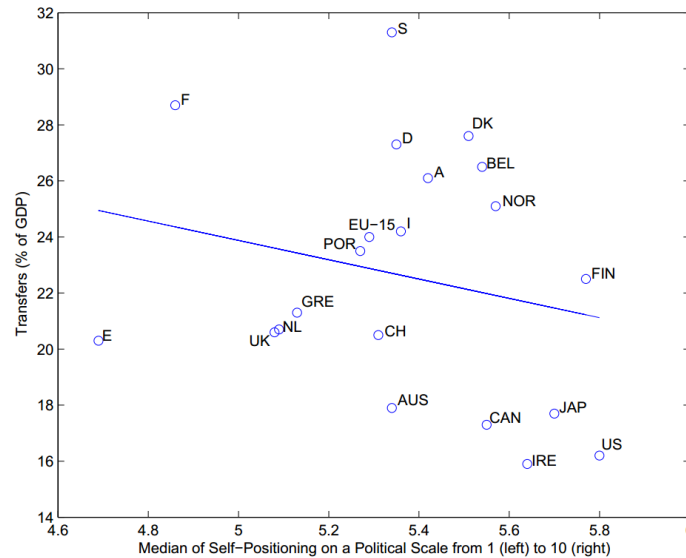
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Figure 9. *Relationship y=α+βx between transfers y (in % of GDP in 2003) and political orientation x (median value for country, measured as an index from 1 to 10, with 10 indicating the right-wing orientation).*

Notes: $\hat{\alpha}$=41.099, $\hat{\beta}$=3.444, $\bar{R}^2$=0.0506, *t* statistic is -1.063 (not significant).
Data Source: OECD, World Values Survey.

A fifth behavioral element is political attitudes. For a long time, political scientists have been relating left-wing orientation to attitudes in favor of income redistribution (Downs, 1957)[6]. However, the relationship between the political orientation of the median voter and the actual amount of redistribution (measured by the share of GDP devoted to transfers, as before) turns out amazingly weak. In Figure 9, political attitudes of the median voters range on a scale between 1 (left-wing) and 10 (right-wing). Note that there is little variation, with the EU-15 at 5.3 and the United States at 5.8. Switzerland lies close enough to the regression line to provide supporting evidence, which however is weak to begin with in view of the very low coefficient of determination.

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[6] Frohlich & Boschmann (1986) provide supporting empirical evidence for the United States and Canada.
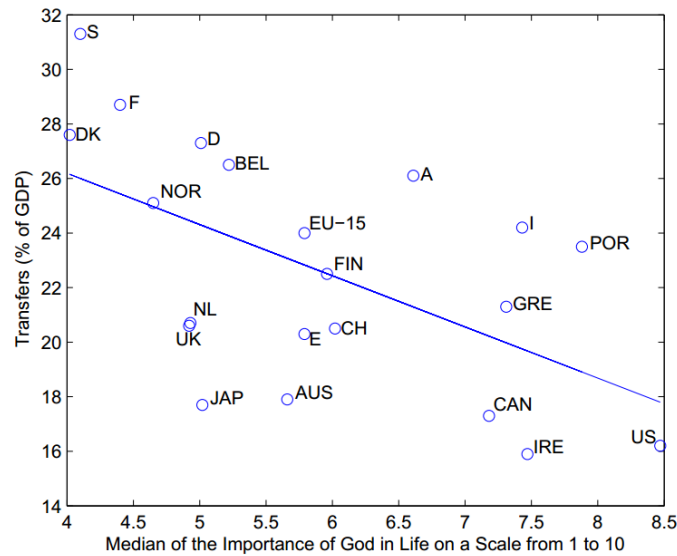
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Figure 10. *Relationship y=α+βx between transfers y (in % of GDP in 2003) and religiosity x (median value for country, measured as an index from 1 to 10, with 10 indicating the highest importance of God in life).*

Notes: $\hat{\alpha}$=33.695, $\hat{\beta}$=−1.877, R^2=0.3175, *t* statistic is -2.906 (significant at the 1 percent level).
Data Source: OECD, World Values Survey.

As a sixth and final behavioral dimension, one can cite religiosity. There are three strands of theory, all of them predicting a negative relationship between religiosity and income redistribution. First, Benabou & Tirole (2006) model collective cultural beliefs, one of which is religion. In their 'highly religious' (Protestant) equilibrium, hard work and industriousness are believed to have rewards in the afterlife, the amount of redistribution is low, and average effort and output are high. In their 'less religious' equilibrium, there is less effort and more redistribution (e.g. through alms). Second, Scheve & Stasavage (2006a); Scheve & Stasavage (2006b) argue and provide evidence that religion provides insurance against adverse events. Therefore risk-averse religious individuals express less demand for redistribution as a collective insurance devise, resulting again in a negative predicted relationship between religiosity and redistribution. A third strand argues that public welfare crowds out participation in church and charitable activities, giving once more rise to a negative correlation. Hungerman (2005) and Gruber & Hungerman (2007) find evidence that public insurance spending indeed crowds out religious charitable spending. Figure 10 shows the strength of religious orientation (1 = no importance of God in life, 10 = maximum importance) to vary considerably, with the United States marking the high end. With a coefficient of determination of 0.32 and a *t* statistic of -2.906, this is the best-fitting bivariate regression designed to explain the share of transfers in the GDP. Hence, the partial correlation between religiosity and the share of transfers in GDP is clearly negative, supporting the theories expounded above. On this score, Switzerland shares the somewhat guarded attitudes prevailing in the EU. Being located close to the regression line, it provides additional

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evidence supporting the theoretical arguments relating religion to redistribution.

6. Final assessment

In sum, out of six behavioral factors that according to the existing literature influence attitudes with regard to income redistribution, all (with the exception of ethno-linguistic fragmentation) were found to be at least partially correlated with the amount of income distribution as measured by public transfers as a share of GDP. And in all cases, Switzerland, located between the United States and the EU, is on or close to the regression line, in contradistinction to the economic and political explanations considered. This observation is informative: Switzerland consistently lies between the United States and the EU average on all six scales used as explanatory variables. If the estimated relationships have validity, it should therefore be located on or close to the regression line rather than constituting an outlier. Since this prediction is confirmed, it tips the balance in favor of behavioral explanations of income redistribution.

A final assessment can be based on multivariate analysis relating the share of transfers in GDP to mobility, openness (both economic), proportional representation (political), ethno-linguistic fragmentation, migration rate, birth rate, belief that luck determines success, political orientation, and religiosity (all behavioral). Applying the general-to-specific approach (a stepwise reduction procedure by excluding the least significant regressor), one arrives at the final model of Table 8. The two explanatory variables retained are both behavioral, viz. the belief that luck determines success and religiosity. Moreover, their coefficients do not significantly differ from the coefficients in the respective bivariate regressions. They are both significant at the 5 percent significance level in the final model as shown in Table 8 (compared to a 1 percent significance level in the bivariate regressions, cf. Figures 8 and 10). However, these two variables are jointly significant at the 1 percent level, as indicated by the test statistic $F(2,17)=7.19$ (p-value of 0.0055).

Table 8. *Final model for the share of public transfers in GDP*

	coefficient	standard error	t-value	significance
constant	19.290	7.925	2.434	5%
belief in luck	2.537	1.215	2.089	10%
religiosity	-1.457	0.654	-2.229	5%

Note: Joint significance test: $F(2,17)=7.19$:[0.0055]

Neustadt (2011) elicits preferences for income redistribution through a Discrete Choice Experiment performed in 2008 in Switzerland and relates them to several behavioural determinants, in particular to religious beliefs and degree of religiosity. Estimated marginal willingness to pay (WTP) is positive among those who do not belong to a religious denomination, and negative otherwise. However, the marginal WTP is shown to increase with a higher degree of religiosity. Moreover, those who state that luck or

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connections play a crucial role in determining economic success exhibit significantly higher WTP values than those who deem effort to be decisive. These results provide corroborating evidence for the outcome of the estimated model in 8.

7. Conclusion

In this paper, an attempt was made to explain the difference in the amount of public income redistribution between the United States and the European Union (EU), based on an empirical examination of three sets of determinants, economic, political, and behavioral, with the most recent data for 20 developed OECD countries[7] listed in Figure 1. The previous literature (Alesina & Glaeser, 2004) looks at bivariate relations between the amount of public redistribution and various economic, political, and behavioral variables for large data sets including developing countries. In addition to the variables in Alesina & Glaeser (2004), we included further variables in our study such as a measure for social mobility, migration rate and birth rate. Since Switzerland, a non-EU country, is almost always located between the two polar cases, we use it as a test case providing corroborating or contradicting evidence.

Economic determinants predict more rather then less income redistribution in the United States than in EU, contrary to facts. Before-tax income inequality is higher, the income distribution is more skewed, and incomes and terms of trade are more volatile in the United States than in the EU countries. However, U.S. income mobility is higher, too, possibly serving as a substitute for redistribution. Pertinent bivariate regressions have poor statistical fit. Moreover, Switzerland lies rather far from the respective regression lines, providing contradicting rather than corroborating evidence.

Political variables include district rather than proportional representation, a two-party vs. multiparty system, a presidential vs. parliamentary democracy, courts emphasizing property rights, and failure of a strong and lasting socialist party to form; all distinguishing the United States from the EU. However, once again, the bivariate regressions do not have much explanatory power. And again, Switzerland comes close to being an outlier, thus failing to buttress the weak supporting evidence.

Behavioral explanations include ethno-linguistic fragmentation of the country, the migration rate, the birth rate, the belief that luck determines success, the degree of left-wing orientation, and the strength of religious belief. On several of these scores, the U.S. population constitutes an outlier. In particular, it sees hard work rather than luck as a determinant of success, contrary to the population of a typical EU country. Two bivariate regressions (with belief that the luck determines economic success and religion as the explanatory variable, respectively) attain coefficients of

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[7] However, the regression on the belief about luck vs. effort as well as the final multivariate regression do not include Greece due to a lack of data.

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determination of 0.3 or more. In addition, the Swiss observation is on or close to the regression line, thus providing supporting evidence. In a final assessment, we identify the most significant variables based on a multivariate regression, complementing the bivariate analyses by Alesina & Glaeser (2004).

Both the bivariate and the multivariate regressions suggest the following conclusions. The United States has less income redistribution than the European Union for three main reasons. The first is political. With its absence of proportional representation (a feature shared with Australia, Canada, and the United Kingdom, countries with a low amount of redistribution, too), the United States has an impediment against resolving political conflict through buying off minorities, a tradition characterizing notably Austria and Sweden (see Figure 4 again). Using Switzerland as a test case, its observation is off the regression line by about the same amount as the United States (and on the same side). Therefore, it does contribute a measure of confirmatory evidence. The other two reasons are behavioral. The U.S. population does not believe that chance determines economic success, contrary to the EU population (see Figure 8 again). Further, it believes that God is of critical importance in life, which is held to a comparable degree by the Portuguese but certainly not by the EU population on average (see Figure 10 again). On both scores, the Swiss observation is on or close to the respective regression line, providing a bit of supporting evidence. And on both scores, Switzerland is located between the United States and the EU, showing its Janus face.

It is appropriate to point out the limitations of this analysis. First, it does not rest on a unifying theoretical basis, drawing on economics, political science, and sociology in an eclectic manner. Second, possible determinants are tested mainly one by one in a series of bivariate regressions. This of course entails the risk of attributing influence to a factor that should be attributed to another factor not controlled for. Third, the evidence relates to a point in time. Measured values can be subject to transitory shocks causing them to differ from the permanent values the theories refer to. Fourth, one could argue that while accepting the view that the United States and the European Union constitute two polar cases with regard to income redistribution, some country other than Switzerland should have been selected as a test case in between. All these limitations have to be taken serious. Above all, they call for additional research to answer the question, "Why is there such a marked difference between the United States and the European Union in terms of income redistribution?" The present study may provide a few preliminary answers that need to be corroborated. It uses Switzerland as a test case because that country, while being in the middle of Europe, does have a few features that are reminiscent of the United States, giving it an intriguing Janus face.

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