

Research Institute for the Evaluation of Public Policies



**IRVAPP**  
RESEARCH INSTITUTE FOR  
THE EVALUATION OF PUBLIC POLICIES

# Do Big Governments Promote Trade Liberalization? A Long-Term Analysis of 18 OECD Countries, 1975-2000

Federico Podestà

January 2016

FBK-IRVAPP Working Paper No. 2016-02

# **Do Big Governments Promote Trade Liberalization? A Long-Term Analysis of 18 OECD Countries, 1975-2000**

**Federico Podestà**  
*FBK-IRVAPP*

FBK-IRVAPP Working Paper No. 2016-02  
January 2016



Research Institute for the Evaluation of Public Policies  
Bruno Kessler Foundation  
Vicolo dalla Piccola 12, 38122 Trento (Italy)

Phone: (+39) 0461.314209

Fax: (+39) 0461.314240

E-mail: [info@irvapp.it](mailto:info@irvapp.it)

Website: <http://irvapp.fbk.eu>

The purpose of the IRVAPP Working Papers series is to promote the circulation of working papers prepared within the Institute or presented in IRVAPP seminars by outside researchers with the aim of stimulating comments and suggestions. Updated review of the papers are available in the Reprint Series, if published, or directly at the IRVAPP.

The views expressed in the articles are those of the authors and do not involve the responsibility of the Institute.

# **Do Big Governments Promote Trade Liberalization? A Long-Term Analysis of 18 OECD Countries, 1975-2000**

Federico Podestà<sup>†</sup>

January 2016

## **Abstract**

This paper investigates the relationship between state intervention and trade policy in selected OECD countries over recent decades. It starts from the general hypothesis that big governments promote trade liberalization, whereas small ones limit it. It does so on the basis of the assumption that the pre-existing internal compensation can be employed as a functional equivalent of trade restrictions in protecting the social segments, such as low-skilled workers, most damaged by trade exposure. Moreover, since the political processes underlying the nexus between interventionism and trade restrictions need a quite long period of time to modify and to exert their effects on public policy, such a nexus is examined from a long-term perspective. In this regard, two issues are addressed. The first concerns the hypothesis and the consequent testing, via a battery of error-correction models, of the existence of a long-term equilibrium relationship. Specifically, if government intervention is employed before and as a substitute for trade policy, one should expect that they flow together over time to maintain a certain protective balance. Consequently, any deviation of internal protection would be corrected over time as the protectionism returns to its long-run equilibrium relationship with government intervention. The second issue regards an increasing weakening of the negative nexus between interventionism and trade policy associated with the structural decrease in low-skilled workers. Error correction models for separate time periods and yearly repeated cross-section regressions have made it possible to evidence this progressive weakening.

**Keywords:** Trade liberalization, Government intervention, Long-term equilibrium, Compensation Hypothesis

---

<sup>†</sup>FBK-IRVAPP: podesta@irvapp.it.

## 1. Introduction

Most of the current debate on globalization has centred on the effect of international market expansion on the political economies of developed countries. Many efforts have been made to understand how domestic politics, and more in particular national policy, have reacted to this phenomenon (for an overview, see for example Garrett and Lange 1996; Scruggs 2004b). Several studies have investigated the effects produced on government intervention, on the one hand, and the regulation of trans-national economic flows on the other. More rarely, scholarship has regarded the combination of those policies. In particular, few empirical attempts have been made to understand how internal arrangements combine with cross-border barriers.

Accordingly, this article investigates the relationship between state intervention and trade policy in selected OECD countries over recent decades. In so doing, it starts from the general hypothesis that big governments promote low trade barriers, whereas small ones limit trade liberalization. This argument is developed by assuming that both trade barriers and an active role of states within domestic economy constitute protective responses for those groups which suffer from trade exposure.

In fact, although economic theory maintains that trade exposure is desirable for several reasons, such as efficiency enhancement and economic growth stimulation, a large number of studies have stressed that it has deleterious effects on particular segments of national societies, such as low-skilled workers (e.g. Wood 1995; Freeman 1995). These latter tend, via their traditional delegates, i.e., unions (Schnabel 2012), to demand adequate protection from governments. Referring to the political economy of trade policy and the so-called compensation hypothesis, governments would in turn have two different options to respond to these political pressures. According to the political economy of trade policy, they may directly limit trade exchanges via cross-border barriers. On the other hand, the compensation hypothesis predicts that national governments respond to those pressures by arranging internal compensations, such as bigger governments and stronger welfare state efforts.

Accordingly, if the pre-existing internal compensations are sufficiently developed to ensure a certain degree of welfare for protectionist groups, these latter will no longer be adverse to free trade, and governments will be able to reduce trade barriers. On the other hand, if protectionist groups are not satisfied by the compensatory measures provided within national boundaries, they will continue to demand trade restrictions, and governments will encounter more difficulties in proceeding with trade liberalisation (Bates et al. 1991; Martin and Steiner (2013).

Clearly, the political processes behind the nexus between interventionism and trade restrictions are not transitory. Like many other political processes, they need a quite long period of time to modify and to exert their effects on public policy. Consequently, this paper investigates such a nexus in a long term spectrum. In particular, although it examines the unmediated relationship between government intervention and trade barriers without investigating the underlying policy-making, the analysis is performed assuming that these underlying mechanisms require a long-term perspective.

In this regard, two issues are addressed in the present work. The first concerns the existence of a long-term equilibrium relationship between domestic compensation and cross-border barriers. Specifically, if government intervention is employed before and as a substitute for trade policy, one should expect them to evolve maintaining a certain

protective balance. Therefore, the underlying political processes would make the two protective measures flow together over time. Consequently, deviations in internal protection should be corrected over time as the protectionism returns to its long-run equilibrium relationship with government intervention. This kind of relationship is tested and corroborated via a series of error-correction models estimated on a time-series-cross-section dataset.

Although the long-term equilibrium is an important feature of the relationship under scrutiny, examination of it raises a second issue concerning a longer-term dynamics. There are several reasons to believe that the supposed negative association has varied in strength over recent decades. In fact, the progressive decline of low-skilled workers, i.e. the social group most involved in these political processes, suggests an increasing weakening of the nexus between domestic compensation and trade regulation. Error correction models for separate time periods and yearly repeated cross-section regressions have made it possible to evidence this progressive weakening.

The paper proceeds as follows. Section 2 contrasts the political economy of trade policy and the compensation hypothesis with respect to the protective solutions studied. Section 3 illustrates the existing literature on the association between domestic compensation and trade liberalization and formulates some hypotheses on its long-term dynamics. Section 4 describes the data and the empirical strategy. Section 5 discusses the corresponding results, while Section 6 makes some concluding remarks.

## **2. The political economy of trade policy and the compensation hypothesis**

In order to hypothesise that big governments promote free trade, while small ones are an obstacle for it, one must be able to argue that the pre-existing public intervention in the national economy is adopted to perform the same, or at least analogous, functions as trade policy. In other words, one can reasonably expect that the degree of interventionism affects trade regulation if economic and social policies implemented within national borders provide sufficient compensation to those groups hurt by trade exchanges or, more simply, opposed to free trade. In order to make this reasoning credible, the political economy of trade policy, on the one hand, and the compensation hypothesis on the other, must be first considered and then combined.

The political economy of trade policy has attempted to explain why national governments frequently adopt measures to limit trade exchanges by “endogenizing” the policy-making of tariff and non-tariff barriers. In fact, although international institutions (GATT and then WTO) and the economics community prescribe trade liberalization to maximize aggregate welfare, the deviations from it are still pervasive and centred on domestic politics. The sub-optimal level of trade barriers is thus conceived as an outcome of political markets in which the objectives of the political actors are different from that of aggregate welfare maximization. As in other political markets, trade policies are regarded as political choices to resolve competing claims on government-allocated resources (Nelson 1988; Rodrik 1995).

Therefore, while lower prices ensured by trade exchanges are dispersed among all consumers, the costs of such exchanges are concentrated on firms and workers in import-exposed sectors which prove better able to overcome the collective action problem and obtain protection via trade barriers.

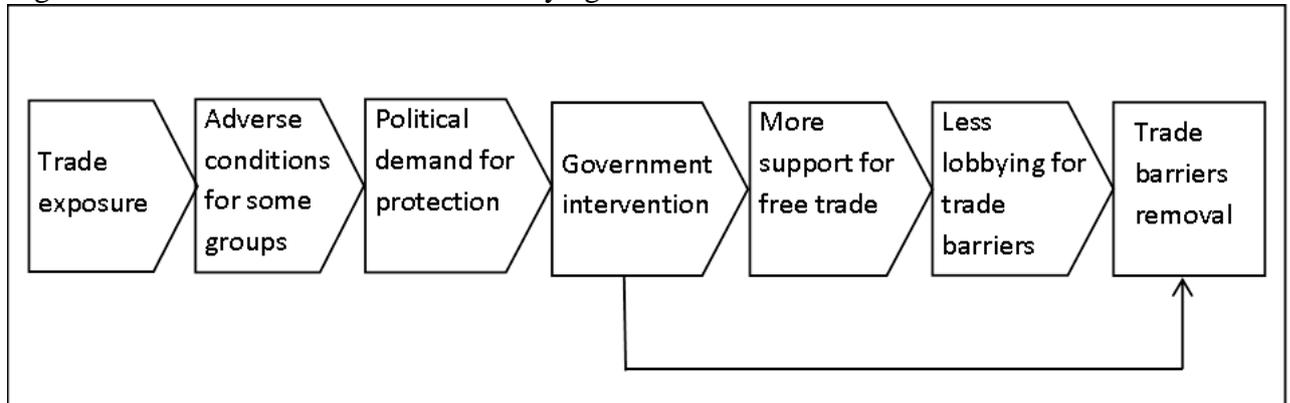
In this regard, several studies have highlighted the protectionist orientation and the consequent political pressures of unskilled workers in developed countries. The expansion of international trade, in fact, has deteriorated the economic position of that category. In particular, less skilled and, in turn, less productive workers are more likely to become unemployed and consequently less likely to give their political support to free trade (Wood 1995; Rodrik 1995; Mayda and Rodrik 2005; Costinot 2009; Scheve and Slaughter, 2001).

A similar argument is developed by the compensation hypothesis. In contrast with the so-called efficiency hypothesis, which posits that increased trade exposure leads to a decrease in public spending by affluent democracies in order to remain competitive at international level (Allan and Scruggs 2004; Aspinwall 1996; Busemeyer 2009; Korpi and Palme 2003; Rodrik 1997), the compensation hypothesis shares with the political economy of trade policy the idea that governments must respond to the demands for protection of groups penalized by international market integration. Also in this case, it is assumed that, although trade exposure benefits national society as an aggregate, adverse consequences arise for particular social groups, such as low-skilled workers, generating new social and political cleavages. Nevertheless, differently from the political economy of trade policy, the compensation hypothesis predicts that national governments will protect the (apparent or effective) losers of international trade by increasing state intervention in the domestic economy, rather than resorting to protectionism. To corroborate this hypothesis, a large number of quantitative analyses have been performed. Basically, one or more indicators of government intervention, such as public expenditure or, more in particular, welfare spending, are used as dependent variables, whereas some measures of economic exposure to international markets or some indicators of external risks are adopted as key independent variables (Cameron 1978; Katzenstein 1985; Rodrik 1998; Garrett and Mitchell 2001; Garrett 1995; 1998a; Swank 1998; Huber and Stephens 2001; Hays et al. 2005; Kim 2007; Jensen 2011).

These two lines of research should clearly denote that both protectionism and government intervention within the national economy can be conceived as alternative means to achieve protective objectives. More precisely, both these policy strategies can be viewed as functional equivalents in responding to the social dislocations produced by international trade exposure. This may clearly imply a negative association between interventionism and trade restriction precisely because one can be adopted in place of the other. This argument seems to suggest that governments may indifferently adopt interventionism and trade barriers without a precise temporal order. Nevertheless, if one remains with the compensation perspective, state intervention within national boundaries is assumed to be a primary protective solution, so that trade regulation comes to be a subsequent variable. In other words, if state intervention is adopted to deal with the political cleavages produced by trade exchanges, the political demands for protection via trade barriers will be consequently affected. More precisely, if the pre-existing public apparatus, and more in particular the welfare state, are able to satisfy the political demands of the protectionist groups, trade barriers will no longer be requested and national governments will be able to proceed with trade restrictions removal. Certainly, since trade barriers are aimed to regulate trade flows, one may claim that their reduction in turn increases trade exposure, i.e. the first element in the causal chain reported in Figure 1. Nevertheless, this effect can be discarded if one – as in this study – stays within a long-run framework. Through a Granger causality analysis, Thompson and Reuveny (1998)

concluded that, while tariffs influence trade volume in the short term, in the long-term trade exchanges affect trade policy and not vice versa.

Figure 1 – The causal mechanisms underlying trade barriers removal.



### 3. The relationship between interventionism and trade liberalization

The effect of interventionism on trade regulation is not, however, something new in the literature. Therefore, in order to clarify how this paper may contribute to filling some gaps, the current debate on this topic must be briefly illustrated.

The embedded liberalism compromise theorised by Ruggie (1982) constitutes a paradigmatic reference in this regard. To describe the international architecture of the 25 years after World War II, Ruggie argued that, unlike the economic nationalism of the 1930s, such a compromise would be multilateral in character. But, unlike the liberalism of the gold standard and free trade, its multilateralism would be predicated on domestic interventionism. Accordingly, governments everywhere had developed increasingly active forms of intervention in the domestic economy in order to affect the level of prices and employment, and to protect them against external sources of dislocation (Ruggie 1982: 390-393). This means that the extraordinary success of international trade liberalisation of that period hinged on an agreement between state and society to mediate the deleterious effects of trade exposure.

Until the 1970s, such a compromise could work well because a sophisticated institutional architecture gave governments sufficient degrees of freedom to expand the welfare state and adopt countercyclical demand policies. The Bretton Woods system facilitated achievement of the twin goals of trade liberalization and domestic compensation by combining fixed exchange rates with capital controls. On the one hand, fixed rates promoted trade by stabilizing expectations about future price movements. On the other hand, capital controls gave governments sufficient macroeconomic autonomy to smooth business cycles through countercyclical demand management (Garrett 1998b; Helleiner 1994, Hays 2009).

Nevertheless, in the post-Bretton Woods period, when fixed exchange rates were abandoned in favour of floating ones, and OECD countries progressively removed their capital controls, the embedded liberalism compromise progressively resulted in crisis (Ruggie 1994, 1998; Garrett 1998b).

Apart from that crisis, and more in general aside from the embedded liberalism framework, some comparative studies have attempted to analyse the causal mechanism

underlying the relationship between government intervention and trade barriers removal. Some works have been based on surveys on individuals' attitudes to show that welfare compensation leads to stronger public support for trade liberalisation (see Figure 1). Using a survey-based experiment conducted in the United States, Ehrlich and Eddie (2013) found that in certain individuals, such as those with low incomes, knowledge of compensation leads to higher support for trade liberalization. Based on the dataset from the International Social Survey Program, two other analyses have reached similar conclusions. Hays et al. (2005) regressed individuals' attitudes to free trade against the net replacement rate for unemployment insurance and the amount of government spending on active labour market programmes per unemployed worker. Their conclusion was that workers in tradable sectors tend to oppose free trade, although their opposition can be reduced by policies designed to protect them, such as unemployment insurance and active labour market programmes.

However, such scholars have studied the effect of working in "tradable" sectors on the support for free trade, although workers in export-exposed sectors have policy preferences different from those in import-exposed sectors. Accordingly, Ha et al. (2014) examined the effect of unemployment compensation for workers in import-exposed sectors because they are "directly" harmed by international trade exposure. They concluded that workers in import-exposed sectors tend to oppose trade strongly, but this effect is substantially diminished when they receive unemployment compensation. In addition, performing country-level analysis, Ha et al. (2014) found that higher levels of public support for free trade are significantly correlated with further trade liberalization. Specifically, a country with higher public support for trade liberalization tends to have a lower level of trade barriers. Similarly, referring to the 1995-97 World Values Survey, Kono (2008) found that higher public support for free trade leads to lower tariffs, but only in democratic countries.

Although public support for free trade plays an important role in the political process of trade barriers removal, examining its effect limits the inquiry to more recent years. In fact, surveys on individual attitudes do not make it possible to go significantly back in time. On the other hand, although analysing the direct relationship between government intervention and trade regulation means ignoring the political underpinnings of trade liberalization (Adserà and Boix 2002), it makes it possible to overcome that limitation. Moreover, differently from the analyses on individuals' attitudes, focusing on the unmediated relationship between domestic compensation and trade policy allows adoption as the dependent variable the final element in the entire causal chain reported in Figure 1, i.e. trade liberalization.

To the best of my knowledge, only two studies have provided an empirical test on this topic. According to the neo-institutionalism developed by Williamson (1985), Bates et al. (1991) assumed that external risks and the instruments available to deal with them shape non-market institutions, namely trade policy and government intervention. Accordingly, they regressed trade policy against the instability in international terms of trade and the level of per capita transfer payments made by the government and concluded that the greater the public programmes mounted by a nation's government, the less likely that government is to block free trade. But, as Bates et al. admitted, this conclusion suffered from some methodological problems. First, the data utilised were based on qualitative judgements about the trade policy orientation. Second, the statistical results were based solely on cross-sectional analysis (the analyses concerned 30 countries observed in two separate periods: 1963-73 and 1974-84).

These drawbacks have substantially been overcome by a more recent study by Martin and Steiner (2013). They proceeded in two steps. First, they analysed a sample of 20 OECD democracies observed from 1951 to 1993 and regressed the first difference of the average tariff rate against government spending or more specific transfer spending and a set of control variables. Second, by leveraging data on major liberalization episodes from 1950 onwards in a global sample of democratic countries, Martin and Steiner performed an event history analysis. More precisely, liberalizing events as episodes in which a country changes from being defined as “closed” to being categorized as “open” were connected to government consumption (as a percentage of GDP). Despite the compelling plausibility of the theoretical argument, Martin and Steiner (2013) failed to produce empirical evidence that would support that public spending facilitates free trade.

Although also the present paper examines the direct association between interventionism and trade liberalization, it tries to account for how the underlying political processes affect the dynamics of such an association. Specifically, since complex political interactions trigger the relationship between domestic compensation and trade policy (see above and Figure 1), one must necessarily assume that the effects of the former need considerable time to materialize in the latter. The duration of political pressures by unprotected groups, and that of the consequent decision-making, make it unlikely that a variation in social programmes or in any protective measure implemented within national boundaries may have an instantaneous impact on trade policy. Furthermore, the slow evolution of power balances means that the strength of the relationship under scrutiny changes just as slowly. Hence a long-run perspective is inevitably necessary to examine such phenomena.

Accordingly, one may first hypothesise that state intervention and trade barriers maintain a long-run equilibrium relationship precisely because they combine at a level such to obtain a certain protective balance. This latter must in fact ensure an acceptable political consensus which must be restored whenever the protective responses are altered and the groups damaged by trade exposure remain uncovered. More precisely, state intervention and trade liberalization flow together over time because both are adopted to respond to the political demands of the social groups penalised by trade exposure. Therefore, when deviations from the protective balance arise, the assumed long-run equilibrium must be gradually restored as trade barriers respond to domestic compensation alterations. Hence, if, for instance, welfare state retrenchments are implemented, the protective balance must be progressively re-established by reducing trade liberalisation. On the other hand, if a deviation from the equilibrium is due to an increase in public spending, governments will be able to remove trade barriers until the corresponding political consensus will be not prejudiced. Clearly, such adjustment processes are not instantaneous precisely because the underlying political processes need more time to exert their effects on the protective balance (see above).

Besides the equilibrium relationship, a second issue concerning the long-term dynamics must be addressed. As anticipated, it regards a longer-term perspective and has to do with whether the supposed negative association between domestic compensation and trade liberalization has changed in strength over recent decades. Since, as argued, the association in question is driven by particular political processes, one may reasonably hypothesise that that association has changed in accordance with the evolution of the power balance which characterizes those processes. In particular, recent studies have stressed that de-industrialization, tertiarization of the labour force, and especially educational expansion, have all led to a decline of employment in the skilled and low-

skilled industries and massive ‘occupational upgrading’, that is, the expansion of occupational performance in the high skilled service sector (Oesch, 2013; Gingrich and Häusermann, 2015).

This structural transformation would have affected the politics underlying the association between internal protection and cross-border barriers. In fact, if low-skilled workers are the social group most harmed by trade exposure and consequently most involved in the political processes behind that association, their progressive and generalized decline may have weakened the connection between the two protective policies. In other words, if low-skilled workers have increasingly reduced their power resources to obtain protection through either state intervention or protectionism (Baccaro and Howell 2011), national governments have progressively gained degrees of freedom to reduce trade barriers without having to provide internal compensation. Consequently, one may reasonably expect a increasing weakening of the relationship under examination.

#### 4. Data and empirical strategy

The hypothesised long-run equilibrium between state intervention and trade restrictions can be properly tested via an error-correction (EC) model (De Boef and Keele, 2008). As well known, the EC model has the following form:

$$\Delta y_{it} = \beta_0 + \beta_1 y_{it-1} + \beta_2 x_{it-1} + \beta_3 \Delta x_{it-1} + e_{it} \quad (1)$$

where the parameter for the lagged dependent variable in levels ( $\beta_1$ ) represents equilibrium properties. Specifically, if  $\beta_1=0$ , then there is no evidence of a long-run equilibrium relationship between  $y$  and  $x$ . Conversely, if  $-1 < \beta_1 < 0$ , variables show a return to long-run equilibrium. Conversely, by dividing the coefficient for the lagged independent level variable by minus the coefficient for the lagged dependent level variable:  $\beta_2/-\beta_1$  the long-run multiplier is obtained. It denotes the total long-run effect of a unit change in  $x$  on  $y$ , i.e. the total amount of change in  $y$  required to restore the equilibrium with  $x$ . This long-run effect is consequently distributed over subsequent time periods, with  $\beta_1$  as the proportion of the effect that occurs per time period. Hence, after a change in  $x$ ,  $\beta_1$  will tell us how quickly  $y$  changes to restore the equilibrium relationship. Finally,  $\beta_3$  represents the short-term impact of  $x$  on  $y$ .

A series of EC models were estimated using a time-series-cross-section (TSCS) dataset. It was composed of 18 developed countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA), annually observed over the period 1975-2000.

Taxes on international trade were employed as the dependent variable. It was expressed as the ratio of total taxes on international trade to total current revenue. The taxes included import duties and export duties and other levies such as profits of export or import monopolies, exchange profits, and exchange taxes.<sup>1</sup> Taxes on international trade were chosen for two main reasons. First, previous leading studies had employed them to measure trade policy (e.g., Garrett 2000). Second, although the last release of the World

---

<sup>1</sup> Clearly, import duties are significantly higher than export duties. For instance, during the period 1970-1990, the percentage of import duties on import flows was 2.2, while the percentage of export duties on export flows was 0.1.

Bank's World Development Indicators makes it possible to cover only a limited period of time, one can easily overcome this drawback. Specifically, since no breaks emerge, by merging the time series included in the 1998-2011 releases of that source, one can obtain a TSCS dataset for a sufficiently long period of time: as said, 1975-2000. In fact, the repeated time-points in TSCS are what allow us to apply time-series methods, such as EC model, to data that are TSCS.

In descriptive terms, the yearly mean computed for taxes on international trade for that period confirms a generalized and substantial tendency toward trade liberalization: it was 4.2%, in 1975, and 0.4%, in 2000. Nevertheless, that tendency was not accompanied by a growing convergence among countries. The coefficient of variation was increased almost linearly: 1.05 in 1975, 1.12 in 1980, 1.22 in 1985, 1.23 in 1990, 1.75 in 1995, and 1.79 in 2000. This indicates that trade barriers still appear domestically founded even though multilateral GATT agreements and EU membership press for an increasing harmonized free trade (see Section 2).

To measure government intervention, three indicators were employed so that they represented the key independent variables. Two of them were drawn from the standard compensation perspective, which often refers to aggregated measures of public expenditure to operationalize state effort within national boundaries (see above). In particular, total government outlay and one of its major components, namely social security transfers (both expressed as a percentage of GDP), were put on the right-hand side of the EC specification. The sources for these two variables were respectively: OECD Economic Outlook: Statistics and Projections (database, OECD, Historical Statistics (various years) and OECD, National Accounts Statistics (database).

Moreover, assuming that spending data poorly capture the welfare state effort of affluent democracies, the well-known generosity index developed by Scruggs (2004b) and refined by Scruggs et al. (2014) was adopted as the third key independent variable. Furthermore, by referring to an entitlement generosity measure, this index allows better capture of the different national starting positions (patterns of commitments) and the consequent adjustment paths of protective programmes (Scruggs 2004a). Three measures of the overall government intervention were preferred to more specific policy indicators because it was assumed that governments may provide internal protection via a wide range of instruments. In fact, groups damaged by trade exposure may be compensated by different public measures.

Nevertheless, the high correlation among these three variables prevented the inclusion of all of them in the same model (the corresponding correlation coefficients were 0.85, 0.70 and 0.66). In other words, in order to avoid problems of collinearity, those variables were included one by one in the EC models each time that they were estimated.

Although in some cases the EC model is estimated without any control variable (e.g., Best 2010), such a specification may be too simplified. Accordingly, in addition to it, EC models including the following control variables were also performed. Regarding the economic features, two variables were employed to capture respectively external risk and skills of labour force participants. Following Mukherjee et al. (2009), the first variable coincided with the annual change in the terms of trade (i.e., the capacity to import less exports of goods and services in constant prices). Data were from the World Bank's World Development Indicators (various years). The second variable corresponded to the percentage of the population aged 25 and over which had (only) achieved secondary

schooling (Barro and Lee 2010).<sup>2</sup> Moreover, since trade policy may be also affected by national economic development and country size (e.g., Garrett 2000), real GDP and total population were controlled for as well. Data were respectively drawn from Penn World Table 8.0 and OECD, Employment and Labour Force Statistics (database).

Turning to the political and institutional variables, two dummies for GATT negotiations and EU membership were included in the EC models. Finally, since the structure of access points provided by institutions makes protectionist lobbying less costly (Ehrlich 2007), the effective number of parties on the seats level and the electoral system were also controlled for. The source for these two variables was the Comparative Political Data Set assembled by Armingeon et al. (2011).

Moreover, in order to ensure that the findings were not driven by idiosyncrasies of individual countries, fixed effect EC specification was employed as well. Nevertheless, it should be noted that that specification makes it possible to capture only the long-run effects with respect to the intra-unit variation (Podestà 2006).<sup>3</sup>

For this analysis, the EC specification was appropriate not only from a theoretical point of view but also from an econometric perspective. In fact, the above-described variables exhibited high persistence. They were strongly auto-regressive. For instance, the auto-regressive coefficients estimated for taxes on international trade and the three key independent variables varied from 0.91 to 0.99. Accordingly, one could have tested for unit root in a formal way and proceed with cointegration analysis. Nevertheless, in light of Beck and Katz's (2011) argument that most political economy TSCS variables cannot by construction have a unit root, any test in this regard was excluded. In fact, their argument can be easily extended to many of the variables considered here. For instance, taxes on international trade and aggregate public expenditure are expressed in percentages and consequently are by definition between zero and one hundred per cent. Therefore, if either series were I(1), then one would be equally likely to see an increase or decrease in either variable regardless of its present value. On the other hand, one cannot believe that there is no tendency for both variables to rise when they are low and to fall when they are high. So, even if these series are very persistent, they simply cannot be I(1). Consequently, the EC model was the proper solution. It is as appropriate for integrated data as it is for strongly auto-regressive stationary data. Furthermore, and more importantly, the EC model was adopted because equilibrium conditions and error correction rates can be described aside from co-integration (De Boef 2000; De Boef and Keele 2008; Beck and Katz 2011).<sup>4</sup> Additionally, since TSCS data such as these often show non-spherical errors, all EC models were estimated using panel-corrected standard errors (Beck and Katz, 1995).

Finally, in order to control for the predicted weakening of the negative association between internal compensation and trade policy, two empirical strategies were employed. The first entailed the division into three sub-periods of the one covered in the above-mentioned TSCS dataset. They were 1975-1983, 1984-1992 and 1993-2000. Hence, an EC

---

<sup>2</sup> Since data are in five-year intervals, interpolations were performed to obtain complete annual time series necessary for estimating EC models.

<sup>3</sup> This is because country dummies inclusion replaces the dependent and independent variables with their unit centered deviations. In other words, fixed effect specification de facto removes any of the average unit to unit variation from the analysis focusing on the within-country variation over time (Greene, 2003).

<sup>4</sup> The EC model was preferred to cointegrating regression also because in this latter variables are jointly endogeneous. This not the case in our study precisely because the reasoning developed in the previous section claims that the pre-existing interventionism affects trade policy and not *vice versa*. In other words, our argument states which variable must be put on the left side of the equation and which must be put on the right.

model was estimated for each of these sub-periods in order to evaluate whether the supposed association decreased in strength. Given the importance of the long-term multiplier in the EC specification (De Boef and Keele, 2008), this assessment was performed by comparing these parameters computed for each period for the three key independent variables mentioned above. The second empirical strategy concerned estimation of yearly repeated cross-section regressions. Also in this case, the development over time of the association was assessed by comparing the coefficients estimated for the three core variables. They were lagged by one period to be consistent with the argument that trade restrictions are affected by the pre-existing government intervention and to address potential problems of endogeneity. This double assessment was performed because, although the second strategy allows more detailed inspection over time (year-by-year instead of period-by-period), the only 18 countries in the dataset made its estimates more uncertain. However, since the number of observations is low in both empirical strategies, analyses were performed by adopting bivariate models in both cases (for similar empirical approaches, see Best 2010; Kittel 1999). Furthermore, in order to deal with collinearity problems (see above), also these two empirical strategies were performed by estimating one model for each core independent variable.

## 5. Results

The EC estimates are reported in Table 1. They are grouped according to the specification strategy described in the previous section. In particular, as a consequence of including key independent variables one at time, and as a consequence of including or not including control variables and country-specific fixed-effects, the parameters of nine EC models have been reported. Accordingly, columns 1, 2 and 3 report the results for the EC specification without any control variables. Columns 4, 5 and 6 set out the results for the EC specification including economic and institutional control variables. Columns 7, 8 and 9 present the results for the EC specifications including control variables plus country-specific fixed-effects (to save space, parameters for fixed effects and short-term effect of control variables are not reported in Table 1).<sup>5</sup> Accordingly, the first column of each of these groups includes the estimates for total government outlays (columns 1, 4 and 7); the second one, those for social security transfers (columns 2, 5 and 8); and the third one, those for generosity index (columns 3, 6 and 9). Additionally, each column reports the long-run multiplier coefficient for the corresponding key independent variables and the pertinent confidence intervals estimated via Bewley transformation regressions (see Bewley, 1979; De Boef and Keele, 2008).

---

<sup>5</sup> Since controls for GATT negotiations and EU membership are completely or almost time invariant, they were not included in EC specifications with fixed-effects.

Table 1 - EC estimates

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Trade taxes <sub>t-1</sub>	-0.12 (-0.13, -0.11)	-0.12 (-0.12, -0.11)	-0.12 (-0.13, -0.11)	-0.19 (-0.21, -0.18)	-0.17 (-0.18, -0.15)	-0.17 (-0.18, -0.16)	-0.20 (-0.22, -0.17)	-0.17 (-0.19, -0.15)	-0.17 (-0.18, -0.16)
Δ Public outlays	-0.00 (-0.01, 0.01)			0.00 (-0.01, 0.01)			0.01 (-0.01, 0.02)		
Public outlays <sub>t-1</sub>	-0.01 (-0.01, -0.00)			-0.01 (-0.01, -0.00)			-0.00 (-0.01, 0.01)		
Δ Social security transfers		0.04 (0.02, 0.06)			0.04 (0.02, 0.06)			0.05 (0.02, 0.07)	
Social security transfers <sub>t-1</sub>		-0.03 (-0.04, -0.02)			-0.04 (-0.05, -0.03)			-0.03 (-0.04, -0.01)	
Δ Generosity index			0.04 (0.02, 0.05)			0.03 (0.01, 0.06)			0.04 (0.02, 0.06)
Generosity index <sub>t-1</sub>			-0.01 (-0.01, -0.01)			-0.01 (-0.01, -0.01)			-0.00 (-0.02, 0.01)
Annual change of terms of trade <sub>t-1</sub>				-0.01 (-0.03, 0.02)	0.00 (-0.02, 0.03)	0.00 (-0.03, 0.02)	0.00 (-0.02, 0.02)	0.01 (-0.02, 0.03)	0.00 (-0.02, 0.02)
People with secondary schooling <sub>t-1</sub>				0.00 (0.00, 0.01)	0.01 (0.00, 0.01)	0.00 (-0.00, 0.01)	-0.02 (-0.02, -0.01)	-0.00 (-0.01, 0.00)	-0.01 (-0.01, -0.00)
Real GDP <sub>t-1</sub>				-0.00 (-0.00, 0.00)	0.00 (0.00, 0.00)	-0.00 (-0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (-0.00, 0.00)	0.00 (0.00, 0.00)
Total population <sub>t-1</sub>				-0.00 (-0.01, -0.00)	-0.00 (-0.00, -0.00)	-0.00 (-0.00, -0.00)	-0.03 (-0.04, -0.01)	-0.00 (-0.01, 0.01)	-0.02 (-0.03, -0.01)
Number of parties <sub>t-1</sub>				-0.01 (-0.03, 0.01)	0.00 (-0.01, 0.02)	0.01 (-0.01, 0.02)	0.01 (-0.05, 0.07)	-0.06 (-0.11, -0.01)	-0.00 (-0.05, 0.05)
Electoral system				0.24 (0.18, 0.30)	0.08 (0.05, 0.12)	0.20 (0.15, 0.26)	0.08 (-0.05, 0.21)	0.19 (0.08, 0.29)	0.05 (-0.06, 0.15)
EU membership				-0.12 (-0.20, -0.04)	-0.10 (-0.18, -0.02)	-0.15 (-0.23, -0.06)			
GATT negotiations				-0.08 (-0.15, -0.01)	-0.06 (-0.10, -0.02)	-0.06 (-0.10, -0.01)			
Constant	0.33 (0.17, 0.50)	0.48 (0.35, 0.61)	0.29 (0.22, 0.36)	0.50 (0.28, 0.72)	0.55 (0.41, 0.70)	0.41 (0.27, 0.55)	1.53 (1.14, 1.93)	0.87 (0.57, 1.17)	1.13 (0.92, 1.34)
Long-term multiplier	-0.05 (-0.05, -0.05)	-0.26 (-0.26, -0.25)	-0.07 (-0.07, -0.06)	-0.03 (-0.04, -0.03)	-0.23 (-0.24, -0.21)	-0.06 (-0.06, -0.05)	-0.01 (-0.01, 0.00)	-0.16 (-0.18, -0.15)	-0.03 (-0.04, -0.02)

Notes: 95% confidence intervals in parentheses.

Firstly, the fact that all coefficients (with the support of confidence intervals) for the lagged taxes on international trade range from -1 and 0 indicates that variables return to long-run equilibrium after a deviation has occurred in government intervention indicators. Nevertheless, the fact that those coefficients denote higher values when economic and institutional variables as well as fixed-effect are included implies that those control variables contribute to increasing the speed at which variables return to their long-run equilibrium state (compare the coefficients for the lagged taxes on international trade in columns 1-3 with the corresponding coefficients in columns 4-9).

Furthermore, the results reported for the interventionism variables are robust to the alternative EC specifications mentioned above. Excluding the coefficients concerning the short-term effects, which are of little interest (see Section 3), the parameters denoting the long-term effect and, more importantly, the total effect of interventionism on trade restriction are in all cases properly signed and in all cases (except one) associated with confidence intervals in support of those signs. Specifically, the fact that the coefficients for the lagged levels of total government outlays, social security transfers and generosity index exhibit in all nine columns negative signs confirms that a decrease in pre-existing internal compensation produces an intensification of trade restrictions. Moreover, the minus sign associated with all long-run multiplier parameters denotes that the negative relationship between government intervention indicators and trade taxes is lasting: a one unit change in internal compensation produces a variation of trade policy spread over more years.

To clarify this dynamic better, the results reported in column 2 may be considered as an example. A unit decrease in social security transfers disrupts the long-term equilibrium relationship, causing taxes on international trade to be too low. Accordingly, the response of this latter variable will be to increase by a total of 0.26 points (see the long-run multiplier parameter) spread over successive time periods at a rate of 12% per time period (the coefficient for the lagged dependent variable corresponds to 0.12). Therefore, taxes on international trade will increase by 0.03 (i.e.,  $0.26 \cdot 0.12$ ) points at  $t$ , then by another 0.03 (i.e.,  $(0.26 - 0.03) \cdot 0.12$ ) points at  $t+1$ , then by another 0.02 (i.e.,  $(0.26 - 0.03 - 0.03) \cdot 0.12$ ) points at  $t+2$ , etc., until the change in social security transfers at  $t-1$  has virtually no effect on trade taxes.

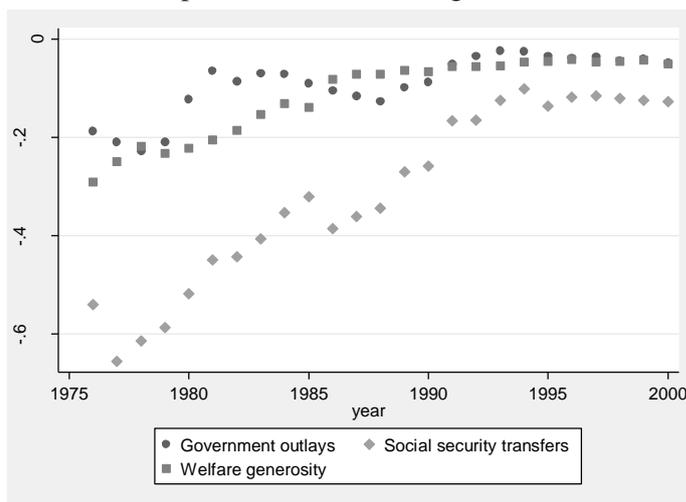
Turning to EC estimates for the three sub-periods mentioned above, the long-run multipliers denote a progressive weakening of the association under scrutiny. In fact, if one excludes the long-run multiplier estimated for total outlays for the 1975-1983 period, a clear tendency emerges: in all cases, these coefficients continue to denote a negative lasting effect, but which decreases in value period by period. Moreover, those results are confirmed by the confidence intervals (see Table 2).

Table 2 - Long-run multiplier and corresponding confidence intervals obtained for total government outlays, social security transfers and generosity index by estimating EC models for separate time periods.

	Period	Coef.	95% Conf. Interval
Total government outlays			
	1975-83	-0.02	[-0.05 0.00]
	1984-92	-0.06	[-0.08 -0.05]
	1993-00	-0.05	[-0.05 -0.04]
Social security transfers			
	1975-83	-0.41	[-0.45 -0.38]
	1984-92	-0.24	[-0.29 -0.20]
	1993-00	-0.13	[-0.14 -0.12]
Generosity index			
	1975-83	-0.13	[-0.14 -0.12]
	1984-92	-0.07	[-0.09 -0.05]
	1993-00	-0.02	[-0.02 -0.02]

This tendency appears even more evident on considering the results deriving from yearly repeated cross-section regressions. As Figure 2 shows, the values of coefficients respectively estimated for total government outlays, social security transfers and generosity index decrease over the entire period under examination, exhibiting an approximately linear pattern. Therefore, all these results reveal that the nexus between protective mechanisms tends to become increasingly weak. Hence, the prediction formulated in relation to the progressive decline of low-skilled workers is substantially confirmed.

Figure 2 – Coefficients of total government outlays, social security transfers and generosity index derived from repeated cross-section regressions.



## 6. Conclusion

The recent debate on the compensation policies associated with the increasing globalization of markets has paid little attention to the impact of government intervention on trade policy. This paper has consequently tried partially to fill this gap by starting from the general hypothesis that big governments promote low trade barriers since the pre-existing internal compensatory measures can be employed as functional equivalents of trade restrictions in protecting those groups damaged by trade exposure. Nonetheless, since intricate political processes mean that the association between these two protective strategies does not materialize and evolve instantaneously, a long-term perspective has been adopted.

Accordingly, by estimating a battery of TSCS EC models it has been possible to point out that state intervention and trade barriers maintain a long-run equilibrium relationship and that whenever internal arrangements deviate from the equilibrium, this is gradually restored by the trade policy adjustments. These findings suggest that the two protective solutions move together in order to maintain a protective balance, which in turn ensures an acceptable political consensus. Certainly, this latter conclusion is not empirically supported by the present work precisely because it leaves the politics in the background. Therefore, future studies may examine the political processes that underlie the exchange between protectionism and domestic intervention. In other words, although the long-term equilibrium appears confirmed at policy level, we need to understand better what has induced expectation of such an equilibrium, namely the political interaction between national governments and low-skilled workers to combine domestic and foreign economic policies.

Further efforts should be also made to gain better understanding of whether the progressive weakening of the negative association between interventionism and trade barriers is effectively driven by the structural and generalized decline of low-skilled workers. In fact, although the present paper has developed that argument to predict and corroborate such weakening, that same argument *de facto* remains a speculation.

More in general, the political processes evoked by this article to hypothesise and control for different features of the long-run relationships between government intervention and trade liberalization should be investigated more deeply.

## References

- Adserà, A. and Boix, C. (2002). Trade, Democracy, and the Size of the Public Sector: The Political Underpinnings of Openness. *International Organization*, 56: 229-262.
- Allan, J.P. and Scruggs L. (2004). Political Partisanship and Welfare State Reform in Advanced Industrial Societies. *American Journal of Political Science*, 48(3):496–512.
- Armingeon, K., Weisstanner, D., Engler, S., Potolidis, P., Gerber, M., Leimgruber, P. (2011). *Comparative Political Data Set I 1960-2009*. Institute of Political Science, University of Berne.
- Aspinwall, M. (1996). The Unholy Social Trinity: Modeling Social Dumping Under Conditions of Capital Mobility and Free Trade. *West European Politics*, 19(1):125–150.
- Bates, R.H., Brock, P. and Tiefenthaler, J. (1991). Risk and Trade Regimes: Another Exploration. *International Organization*, 45: 1-18.
- Baccaro, L. and Howell, C. (2011). A common neoliberal trajectory: the transformation of industrial relations in advanced capitalism. *Politics and Society*, 39(4): 521–563.
- Barro, R.J. and Lee, J-W. (2010). *Barro-Lee Educational Attainment Dataset 1950-2010*. Harvard University.
- Beck, N. and Katz, J.N. (1995). What to do (and not to do) with time-series cross-section data. *American Political Journal Review*, 89: 634-647.
- Beck, N. and Katz, J. (2011). Modeling Dynamics in Time-Series-Cross-Section Political Economy Data. *Annual Review of Political Science*, 14: 331-352.
- Best, R.E. (2010). Increasing irrationality? The equilibrium relationship between electoral and legislative party system size, 1950–2005. *Electoral Studies*, 29(1): 105-116.
- Bewley, R.A. (1979). The direct estimation of the equilibrium response in a linear dynamic model. *Economic Letters*, 3: 357–361.
- Bussemeyer, M. (2009). From Myth to Reality: Globalization and Public Spending in OECD Countries Revisited. *European Journal of Political Research*, 48(4): 455–482.
- Cameron, D.R. (1978). The Expansion of the Public Economy. *American Political Science Review*, 72: 1243-1261.
- Costinot, A. (2009). Jobs, jobs, jobs: a “new” perspective on protectionism. *Journal of the European Economic Association*, 7(5): 1011-1041.
- De Boef, S. (2000). Modeling equilibrium relationships: error correction models with strongly autoregressive data. *Political Analysis*, 9: 14-48.
- De Boef, S. and Keele, L. (2008). Taking Time Seriously: Dynamic Regression. *American Journal of Political Science*, 52(1): 184-200.
- Ehrlich, S.D. (2007). Access to protection: Domestic institutions and trade policy in democracies. *International Organization*, 61(3): 571–605.
- Ehrlich, S.D. and Eddie, H. (2013). Does Compensating the Losers Increase Support for Trade? An Experimental Test of the Embedded Liberalism Thesis. *Foreign Policy Analysis*, 10(2): 149-164.
- Freeman, R.B. (1995). Are your wages set in Beijing, *Journal of Economic Perspectives*, 9(3): 15–32.
- Garrett, G. (1995). Trade, Capital Mobility and the Politics of Economic Policy. *International Organization*, 49(04), 657-687.

- Garrett, G. (1998a). *Partisan Politics in the Global Economy*. Cambridge: Cambridge University Press.
- Garrett, G. (1998b). Global Markets and National Politics: Collision Course or Virtuous Circle?. *International Organization*, 52: 787-824.
- Garrett, G. (2000). The Causes of Globalisation. *Comparative Political Studies*, 33: 941-991.
- Garrett, G. and Lange, P. (1996). Internationalization, Institutions and Political Change, 48-75. In O. Keohane and H.V. Milner (eds.), *Internationalization and Domestic Politics*. Cambridge: Cambridge University Press.
- Garrett, G. and Mitchell, D. (2001). Globalization, government spending and taxation in the OECD. *European Journal of Political Research*, 39: 145-77.
- Greene, W. (2003). *Econometric Analysis*. Upper Saddle River: N. J. Prentice Hall, 5th Ed.
- Gingrich, J. and Häusermann, S. (2015). The decline of the working-class vote, the reconfiguration of the welfare support coalition and consequences for the welfare state. *Journal of European Social Policy*. 25(1): 50–75.
- Ha, E., Lee, D-W and Amri P. (2014). Trade and Welfare Compensation: The Missing Links. *International Interactions: Empirical and Theoretical Research in International Relations*.
- Hays, J.C. (2009). *Globalisation and the New Politics of Embedded Liberalism*. Oxford: Oxford University Press.
- Hays, J.C., Ehrlich, S.D. and Peinhardt, C. (2005). Government Spending and Public Support for Trade in the OECD: An Empirical Test of the Embedded Liberalism Thesis. *International Organization*, 59: 473-494.
- Helleiner, E. (1994). *States and the Re-emergence of Global Finance*. Cornell University Press.
- Huber, E. and Stephens, J.D. (2001). *Development and crisis of the welfare state: parties and policies in global markets*. University of Chicago Press.
- Jensen, C. (2011). Conditional contraction: Globalisation and capitalist. *European Journal of Political Research* 50: 168–189.
- Katzenstein, P.J. (1985). *Small States in World Markets*. New York: Cornell University Press.
- Kim, S.Y. (2007). Openness, external risk, and volatility: Implications for the compensation hypothesis. *International Organization*, 61(1): 181-216.
- Kittel, B. (1999). Sense and Sensitivity in Pooled Analysis in Political Data. *European Journal of Political Research*, 35: 225-253.
- Kono, D.Y. (2008). Does Public Opinion Affect Trade Policy?. *Business and Politics*: 10(2):
- Korpi, W. and Palme, J. (2003). New Politics and Class Politics in the Context of Austerity and Globalization: Welfare State Regress in 18 Countries, 1975–95. *American Political Science Review* 97(3):425–446.
- Martin, C.W. and Steiner, N.D. (2013). *Public Spending and Trade Liberalization: The Compensation Hypothesis Revisited*. Paper prepared for presentation at the 71st Midwest Political Science Association (MPSA) Annual Conference 2013 in Chicago, April 11-14
- Maydaa, A.M. and Rodrik (2005). Why are some people (and countries) more protectionist than others?. *European Economic Review* 49: 1393 – 1430.
- Mukherjee, B., Smith, D.L. and Li, Q. (2009). Labor (im) mobility and the politics of trade protection in majoritarian democracies. *Journal of Politics*, 71(1), 291-308.

- Nelson, D. (1988). Endogenous Tariff Theory: A Critical Survey. *American Journal of Political Science*, 32(3): 796-837.
- Oesch, D. (2008). Explaining Workers' Support for Right-Wing Populist Parties in Western Europe: Evidence from Austria, Belgium, France, Norway, and Switzerland. *International Political Science Review*, 29(3): 349-373.
- Oesch, D. (2013). Occupational Change in Europe: How Technology and Education Transform the Job Structure. Oxford: Oxford University Press.
- Podestà, F. (2006). Comparing Time Series Cross-Section Model Specification. The Case of Welfare State Development. *Quality and Quantity*, 40(4): 539-559.
- Rodrik, D. (1995). The Political Economy of Trade Policy. In G. Grossman and K. Rogoff (eds.), *Handbook of International Economics*, vol. 3, Amsterdam, North-Holland.
- Rodrik, D. (1997). *Has globalization gone too far?*. Washington, DC: Institute for International Economics.
- Rodrik, D. (1998). Why do more open economies have bigger governments? *Journal of Political Economy*, 106(5): 997-1032.
- Ruggie, J.G. (1982). International Regimes, Transactions and Change: Embedded Liberalism in Post-war Economic Order. *International Organization*, 36(02), 379-415.
- Ruggie, J.G. (1994). Trade, Protectionism, and the Future of the Welfare Capitalism. *Journal of International Affairs*, 48: 1-11.
- Ruggie, J.G. (1998), *Globalization and the Embedded Liberalism Compromise: The End of an Era?*. Max Planck Insitut fur Gesellschaftsforschung, Cologne, Working Paper.
- Schnabel, C. (2012). *Union Membership and Density: Some (Not So) Stylized Facts and Challenges*. IZA Discussion Paper No. 6792
- Scheve, K.F. and Slaughter, M.J. (2001). What Determines Individual Trade-policy Preferences?. *Journal of International Economics* 54: 267-92.
- Scruggs, L. (2004a). *Research on Globalization and the Welfare State: Do We Know What We Think We Know?*. Prepared for the Duke University Summer Institute on Globalization and Equity.
- Scruggs, L. (2004b) *Welfare State Entitlements Data Set: A Comparative Institutional Analysis of Eighteen Welfare States. Version 1.0*.
- Scruggs, L., Jahn, D. and Kuitto, K. (2014a) Comparative Welfare Entitlements Dataset 2. Version 2014-03. University of Connecticut & University of Greifswald.
- Swank, D. (1998). Funding the welfare state: Globalization and the taxation of business in advanced market economies. *Political Studies*, 46(4): 671-692.
- Thompson, W.R. and Reuveny, R. (1998), Tariff and Trade Fluctuation: Does Protectionism Matter as Much as We Think?. *International Organization*, 52: 421-40.
- Wood, A. (1995). How Trade Hurt Unskilled Workers. *Journal of Economic Perspective*, 9(3): 57-80.