

Protecting Jobs in the Age of Globalization: Examining the Relative Salience of Social Welfare and Industrial Subsidies in OECD Countries

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The relationship between economic openness and welfare policies has become increasingly important to policy makers. While scholars have tended to examine conditions under which budgets for social welfare programs ebb and flow along with countries' exposure to trade, they have overlooked how governments may compensate domestic labor by subsidizing their employers. To explicitly address the issue of instrument choice, we examine the relative salience of social welfare expenditures to industrial subsidies in a panel of 16 OECD countries from 1980 to 1995. Our results suggest that the relative budgetary salience of social welfare to industrial subsidies is influenced by the interplay between governmental partisan gravity and changes in imports. Unlike Right governments, Left governments tend to favor indirect compensation via industrial subsidies in the wake of negative, zero or moderate increases in imports. Faced with sharp increases in imports, Left governments switch their preferences to compensating workers via more direct and visible policies, namely social welfare.

Polanyi's war-time masterpiece, *The Great Transformation* (Polanyi 1944), inspired scholars to focus on the interplay between international market forces and domestic "countermovements," among which welfare policies to compensate those disadvantaged by globalization are most prominent. Ruggie (1982) attributed domestic support in industrialized countries for the postwar expansion in international trade to the institutionalization of social welfare policies that compensated actors hurt by imports. Lately, scholars have debated whether such "embedded liberalism" will survive globalization. Indeed, the study of the compensation hypothesis (Cameron 1978; Katzenstein 1985) has become an important item in the convergence–divergence debate, and an established literature examines conditions under which various types of globalization, mediated by domestic politics, affect social welfare

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budgets in OECD (Garrett 1998; Iversen and Cusack 2000) and non-OECD countries (Rudra 2002).

If free trade is a positive-sum game, then why should governments feel the need to supply compensation? While trade may benefit some domestic actors and also increase aggregate societal benefits, it also may bring about instability and risk (Iversen and Cusack 2000), and impose concentrated costs on specific actors. Globalization winners may support trade, though one seldom hears of public demonstrations in favor of trade liberalization. Yet, those disadvantaged by globalization frequently demand overturning free trade agreements and/or compensating workers whose jobs are perceived to be lost as a result of growing imports. With economic interdependence and the increased embeddedness of national economies in international regimes such as the World Trade Organization, governments are less inclined or able to roll back trade agreements. The future of the compensation option is also uncertain. Although globalization creates demand for compensation, it may also constrain the ability of governments to supply it. The main culprit is the capital market, which is perceived to punish governments that run budgetary deficits to pay for social welfare (Rodrik 1997). Indeed, contemporary problems in Western Europe attest to such dynamics, as do the political markets for reformist leaders in France and Germany.

Current debates around compensation focus on whether and to what extent domestic politics cushion governments from the pressures of global markets by inducing them to supply compensation. In this context, domestic partisanship emerges as an important factor in facilitating the supply of compensation.¹ Garrett (1998) notes that in OECD countries with dominant Left parties and strong organized labor unions, trade openness is associated with higher welfare budgets. A different result is found in developing countries where the proportion of low-skilled workers is high and labor market institutions are not well developed. Rudra (2002), for example, reports that in developing countries, trade openness is associated with declining welfare budgets. While the relationship between trade openness and social welfare spending remains a contested issue, domestic politics play an important role in any account.

We begin by identifying what we believe to be a major conceptual weakness in the compensation politics literature. Most studies do not examine whether and why governments choose among different policy instruments to compensate those hurt by globalization. The widely prevalent “one-instrument-at-a-time” approach is analytically and descriptively problematic. This may be because, as Iversen (2005:6) correctly notes:

Standard approaches to the welfare state fail to account for the relationship between production and social protection, and they leave behind a number of key questions that any political economy approach to social protection needs to answer. . . . we need to examine the intersection between welfare production regimes and the creation of comparative advantages in the international economy.

To achieve any policy goal, governments are likely to employ a portfolio of instruments. We seek to capture the variations in the instrument mix by focusing on their relative budgetary salience. Our assumption is that the importance governments attach to any instrument is best captured by the budgets governments are willing to

¹ We recognize that scholars have argued that partisanship plays no or little role in budgetary politics (Clark 2003). On the other hand, the compensation politics literature identifies partisanship as an important driver of welfare spending. Thus, previous literature does not provide consistent guidelines regarding the role of partisanship in shaping budgetary choices. Because we have strong theoretical reasons to believe that partisanship should matter in our story of instrument choice, this paper empirically examines our theoretical speculations regarding the effects of partisanship on governments' budgetary choices.

expend for it. Given that governments face a soft budgetary constraint, the relative outlay on instrument A versus instrument B captures the relative salience governments attach to these policy instruments.

Why should relative salience matter for the study of politics? Policy instruments have varying attributes, such as the nature of beneficiaries, visibility, and perceived efficacy, and as such they provide varying political payoffs to governments. Some instruments directly benefit the core constituencies, while others may spread the benefits over a larger number of actors. The effects of some instruments on the target populations are visible and immediate, while other instruments may affect the target populations with a lag and their direct impact may be less visible. The relative budgetary salience of policy instruments is contingent on the political and economic contexts in which governments arrive at budgetary decisions. These include domestic as well as international factors. Because political opportunities and threats facing any government are likely to vary over time, the relative budgetary salience also varies. We do not expect drastic variations because budgetary expenditures tend to be sticky, but we do expect to observe changes in salience at the margin.

By focusing almost single mindedly on one instrument only, namely, social welfare budgets, the compensation politics literature has underexplored the politics of compensation.² We provide an important corrective in this regard, as the potential for policy substitution between social welfare expenditures and other forms of budgetary interventions to support groups and segments disadvantaged by globalization makes this single-minded focus of the compensation politics literature misleading. Governments employ other instruments, such as industrial subsidies and nontariff barriers, to compensate those disadvantaged by globalization. To illustrate, governments can compensate workers disadvantaged by imports by subsidizing firms that employ them. While this may be suboptimal in terms of trade policy, under some conditions politicians may find it attractive. Social welfare policies may be viewed as providing direct and visible compensation to workers who have lost their jobs, but industrial subsidies are likely to be viewed as providing indirect and less-visible compensation to workers. However, subsidies provide direct financial support to owners of capital which welfare expenditures do not.

The political payoffs from providing direct, visible, and concentrated benefits to key constituencies are likely to be different from providing less-visible payoffs to these constituencies while spreading the resources over to a greater number of groups. Thus, there exists a real possibility that the relative salience of welfare to subsidies would depend on the economic and political contexts in which specific governments are embedded. Our research examines this question by focusing on how the relative budgetary salience of social welfare to industrial subsidies varies across space (16 OECD countries) and over time (1980–1995) in response to foreign competition.

While we focus on industrial subsidies as the other compensation instrument, we recognize that governments may also employ additional instruments: to support domestic firms against foreign competition, less-visible instruments, such as nontariff barriers, regulatory relief, and tax concessions, can also be used by the government. Indeed, in an era wherein governments' welfare budgets become an increasingly sensitive issue for international financial markets (Mosley 2000) to the extent that some governments even tie their own hands by setting up maximum budget deficits (e.g., the Stability and Growth Pact of the European Union), these less-conventional policy instruments might become more attractive for governments to protect and compensate domestic firms and workers. We do not include

² Interestingly, while the policy substitution perspective has been adopted by international relations scholars to study other issues (Clark 2001), the compensation politics literature has ignored it.

these additional instruments in our analysis primarily because cross-national data for the period of the study are not available.³

Our focus on industrial subsidies as the key alternative compensation instrument raises an obvious question: how do industrial subsidies compensate workers hurt by imports? Industrial subsidies to firms can improve their profitability by lowering production costs. They also provide firms an opportunity to restructure operations in search of global competitiveness. Subsidized firms can use these rents either to lower prices to compete with imports (especially in industries that manufacture nonbranded commodities) or to invest them in research and development (R&D) to make their products competitive on nonprice attributes. Thus, industrial subsidies can offer valuable help to firms threatened by foreign competition, and plausibly allow workers to keep their jobs. While compensating workers (indirectly), industrial subsidies may help politicians to satisfy the business constituency and take credit for being business friendly.

To illustrate the role of subsidies in compensation politics, consider the efforts of the federal and regional governments in Germany to revitalize the machine-building industry through research and corporate subsidies in the 1990s (Klodt 2000; Almus and Czarnitzki 2003; Schumann and Widmaier 2003). Indeed, from its moribund state, German machine-building—now largely focused on robotics—emerged as a strong global competitor to the Japanese and Korean firms that dominated this industry. At the same time, of course, Germany has one of the most extensive—and expensive—welfare systems in the world. The German example suggests that direct compensation is not the only way to mitigate the negative effects of trade openness, industrial subsidies can serve as an additional instrument in this regard.

Although industrial subsidies are widely used ostensibly to improve competitiveness of domestic industries, the literature on the causes and consequences of industrial subsidies is surprisingly underdeveloped. Based on somewhat limited data, scholars have found that industrial subsidies are positively associated with domestic unemployment levels (Hibbs 1982; Warwick 1992), Left governments (Garrett and Lange 1989), and imports (Blais 1986). To the best of our knowledge, Zahariadis (2001) has provided the most detailed analysis of variations in industrial subsidies using data from 13 OECD countries from 1990 to 1993. Political variables are missing from most analyses: it is not clear whether and how partisanship influences budgetary allocations for industrial subsidies (Zahariadis 1997).

By thinking of social welfare (direct compensation to workers) and industrial subsidies (indirect compensation to workers) as two instruments to compensate those disadvantaged by globalization, this article examines how changes in imports, in interaction with partisanship, influence the relative salience of direct and indirect compensation policies. If there were no constraints on the budget, governments could spend as much as they wished on welfare and subsidies. Even absent budget constraints, there is no *a priori* reason to believe that expenditures on these items would always increase or decrease proportionately; in other words, their relative salience is likely to vary across countries and over time. Indeed, data show that the mean of relative salience (the ratio between social welfare spending and industrial subsidies) across OECD countries from 1980 to 1995 has ranged from its minimum

³ While data on nontariff barriers are not available, we examined data provided by the Fraser Institute's measure of economic freedom as a proxy for nontariff barriers (Gwartney and Lawson 2005). Economic freedom estimates are based on various indicators, among which "hidden import barriers" and the "costs of importing" can be considered as proxies for nontariff barriers. Data are from: <http://www.freetheworld.com>. Data for this variable are only available for 1980, 1985, 1990, and 1995. We use this variable as one of the covariates to control for the possible influence of additional policy instruments on the relative salience of social welfare and industrial subsidies. Regression analysis based on these data suggests that this variable does not have important effects on the relative salience of social welfare spending to industrial subsidies. Because its exclusion does not affect our substantive results, we have dropped it from the final model.

of 1.12 in 1990 to its maximum of 1.55 in 1995. The average salience (by country) has varied cross-sectionally as well: from its minimum national average of 0.29 in Switzerland to its maximum of 2.90 in Denmark. These data are not surprising because governmental budgets invariably operate under some type of constraint, no matter how soft. As we show subsequently, governments may face even a trade off between social welfare and industrial subsidies. Examining the relative salience, we shed light on the conflicts and dilemmas faced by governments in deciding how to use the budget to compensate those disadvantaged by globalization. The study of relative salience leads us to a better-specified understanding of compensation politics. This research, therefore, examines the following questions:

- How do changes in imports influence governmental choices of social welfare in relation to industrial subsidies?
- How do domestic politics influence this choice? Do partisan politics play a role in this regard? Are Left governments more prone to provide social welfare than industrial subsidies?
- Given that policy makers appreciate domestic and international imperatives (Gourevitch 1978; Putnam 1988), how does the interactive effect of import competition and partisanship influence the relative salience of social welfare to industrial subsidies?

Compensation Politics: A Model of Instrument Choice

Competition from imports reduces rents captured by some domestic actors. Those adversely affected in the economic market place often seek recourse in the political arena to mitigate, if not reverse, the losses they experienced. What would the domestic politics of such a countermovement look like? Where would the fault lines fall? The class-based perspective offered by the Stolper-Samuelson theorem suggests that with high factor mobility, the factor in which the country is abundant will gain from trade, while the scarce factor will stand to lose (Rogowski 1989). Thus, domestic cleavages and domestic mobilization will run along factoral lines. The Ricardo-Viner perspective, on the other hand, predicated on the assumption of low factor mobility, suggests that firms and workers in import-competing industries are likely to lose from trade (Frieden 1991b). In some cases, this may impose severe financial hardship on firms, thereby leading them to restructure, downsize, or even close down. Thus, cleavages will run along sectoral lines. No matter which perspective one may subscribe to, with surging imports, governments are likely to come under pressure to compensate domestic actors. Budgetary support can take at least two forms: (1) direct compensation to workers in the form of unemployment benefits⁴ and active labor market programs (ALMP)⁵, and (2) direct support to firms (indirect support to workers) through industrial subsidies.⁶ In this section, we present our theoretical speculations regarding governmental budgetary choices regarding these compensation policies.

⁴ The unemployment benefits category includes all cash expenditures to people compensating for unemployment (OECD 2002). This includes redundancy payments out of public resources as well as pensions to beneficiaries before they reach the "standard" pensionable age, if these payments are made because they are out of work or otherwise for reasons of labor market policy.

⁵ The Active Labour Market Programme (ALMPs) category includes all social expenditures (other than education), which are aimed at improving the beneficiaries' prospect of finding gainful employment or otherwise increasing their earnings capacities. This category includes spending on public employment services and administration, labor market training, and labor market programmes to provide or promote employment for the unemployed (OECD 2002).

⁶ The data follow the System of National Accounts (SNA) and define subsidies as "... current unrequited payments that government units make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services, which they produce, sell, or import" (OECD 2002).

Why do the politics differ in Stolper-Samuelson and Ricardo-Viner models? Scholars point to the varying assumptions these models make about factor mobility. Low levels of factor mobility lock both capital and labor in the same sector, thus creating or accentuating sectoral cleavages, specifically the conflicts between export- and import-competing sectors. In contrast, high levels of factor mobility facilitate the movement of abundant factors to more profitable sectors and therefore sustain class-based societal cleavages (Frieden 1991a; Hiscox 2001). If factor mobility influences societal cleavages and the politics of the articulation of such cleavages, one might be tempted to conclude that it drives governments' choices of compensation policies, specifically the relative salience of social welfare to industrial subsidies. Welfare policies directly compensate workers and therefore respond to class politics, while subsidies compensate both labor and capital in specific sectors and therefore respond to sectoral politics.

It follows that a government's choice of policy instruments could simply be a passive response by the incumbent to the dominant type of societal demands for compensation which, in turn, is a function of factor mobility. Our research does not intend to test the relationship between factor mobility and types of societal cleavages (Hiscox 2001; Ladewig 2006). We seek instead to point out the conceptual shortcoming in the received wisdom regarding the link between types of coalition and types of compensation policies. If low factor mobility leads to the formation of a sector-based coalition, both labor and capital in the disadvantaged industry are likely to seek industrial subsidies. However, even in this case, capital may also have strong incentives to ask for social welfare provisions that directly target workers. After all, generous unemployment benefits and retraining programs (ALMPs) may help employers to ease out unskilled workers and therefore provide them more freedom to restructure the firm. As Mares (2003) argues, the institutionalization of the social welfare state has, in part, been championed by employers. Thus, sectoral politics may not always be associated with a higher demand of industrial subsidies in relation to social welfare provisions. Both the business and the labor, facing severe foreign competition (but not government budget constraints), have incentives to demand policies that could protect industries and compensate those who have lost jobs. Because the demand side of compensation politics alone cannot illustrate governments' choices of policy instrument mix, we turn to the supply side of the story, where the incumbents respond strategically to societal pressures in choosing the mix of compensation policies.

Scholars have identified partisan gravity as an important determinant of the level of compensations provided by the government to protect workers against the vagaries of globalization. Garrett contends that countries with Left governments and strong unions have sustained higher levels of welfare spending (Garrett 1995, 1998). To extend this argument, partisan gravity of the incumbent might also influence the composition of the portfolio of compensation policies, the relative salience of social welfare to industrial subsidies in our case. Further, the effect of partisanship may be contingent on the levels of disruption caused by imports simply because budgetary choices are likely to be influenced by domestic and international imperatives. We, therefore, speculate that partisan gravity, in interaction with foreign competition, is likely to have varying effects on compensation politics.

Governments are often run or strongly influenced by political parties, most of which have key constituencies with certain policy preferences (Milner and Judkins 2004). Left parties have close ties to labor. They are, therefore, likely to support higher levels of class-based compensation, namely social welfare. This is a common theme in the compensation politics literature. We contend that under some conditions, Left governments may be also associated with higher levels of sectoral compensation, namely industrial subsidies (Zahariadis 1995). Given some level of budgetary constraints (in the European case, the limits of government deficit is established by the 1997 Stability and Growth Pact), what factors drive Left

governments to make trade-offs between welfare and subsidies?⁷ To investigate this issue, we examine the characteristics of policy instruments from the perspective of an incumbent Left party; a similar analysis can be done for Right parties as well.

We assume that the ultimate goal of political parties is to stay in power. While electoral success depends on a variety of factors, including whether the incumbent can deliver some level of economic performance, parties often pay close attention to their key constituencies. From the perspective of the Left, industrial subsidies have fewer political payoffs in relation to directly supporting workers via unemployment policies and retraining programs. Why should this be so? First, in terms of policy visibility (Mani and Mukand 2002), social welfare provisions seem more compelling for Left parties, as they send a clear signal regarding governments' efforts to support workers (who are often considered to be more financially vulnerable than capital) hurt by imports.⁷ Second, while firms may receive industrial subsidies, they may still lay workers off under the guise of restructuring. Anticipating this possibility, labor unions are likely to criticize Left politicians for supplying corporate welfare under the pretext of helping workers. Finally, while industrial subsidies might help prevent future layoffs, they may not be helpful for those who have already lost their jobs. In contrast, social welfare provisions are likely to have immediate and visible effects on the unemployed. Here, we assume and expect that governments respond to demand for compensation only after foreign competition has translated into increases in unemployment. More specifically, the causal chain of reactions takes the following form: Rise in imports \rightarrow business reacts by laying off workers \rightarrow increase in the unemployment rate \rightarrow governments come under pressure to compensate.⁸

While policy attributes and political imperatives together are likely to encourage Left governments to favor welfare over subsidies, their influence is likely to be strengthened when the surge of foreign competition is high. Simply put, when domestic dislocation caused by surging imports is severe, the incumbent is likely to come under intense pressure to take visible, focused, and quick actions. If Left parties control the government, they are likely to face strong pressure from their key constituencies, namely, labor, to employ visible, focused, and quick policies in the form of social welfare provisions that directly target workers. Therefore, we expect that Left governments' relative preferences will lean toward welfare over subsidies when increases in imports are high. We are talking about policy changes at the margin, as radical restructuring of either welfare or subsidies is rarely possible in the short run. Often, these policies are the outcomes of historical struggles. If partisanship matters in the short run, it is at the margin. In our case, we expect to see the interactive effect of partisanship and changes in imports to be associated with small changes in the relative salience of welfare to subsidies.

Would Left parties, under some conditions, favor sectoral compensation in the form of subsidies as well? Industrial subsidies offer valuable help to firms threatened by foreign competition, and plausibly allow some workers to keep their jobs. Arguably, even Left parties can get some political payoffs by supplying industrial subsidies. After all, in addition to responding to workers hurt by globalization, industrial subsidies may help Left politicians satisfy the business constituency and allow them to take credit for being business friendly. Therefore, somewhat

⁷ While individual workers are likely to recognize welfare payments as the government's effort to provide compensation, there is the possibility that workers may find some forms of subsidies to their industry to be considered as compensation too.

⁸ An alternative causal chain might be: "Rise in imports \rightarrow governments respond to prevent possible unemployment caused by foreign competition." However, the empirical analysis in the next section's simultaneous equations supports the theoretical alternative that governments seek to compensate only after foreign competition has led to increases in the unemployment rate.

counterintuitively, we expect that, under some conditions, Left parties may prefer industrial subsidies over social welfare provisions.

What might such conditions be? Left governments might favor industrial subsidies over welfare precisely when they are not under pressure from their core constituencies to provide visible and direct compensation. These conditions are associated with negative, zero, or gradual increases in imports. Slow increases in foreign competition are unlikely to cause major layoffs and therefore not set off demands by unions that governments undertake visible and direct actions to protect labor. Left governments may employ such opportunities to signal to businesses their friendly intentions via industrial subsidies. Because labor unions may not be particularly agitated over the disruption caused by imports, they may not voice active opposition in this regard. In sum, the partisan gravity's effects on the government's choice of policy instruments are likely to be contingent upon the level of the surge in foreign competition: Left governments are likely to support subsidies over welfare when increases in imports are gradual but favor welfare over subsidies when increases in imports are sharp.

We recognize that partisanship provides only a partial account of the domestic political story. Actors function in environments whose rules are established by political and economic institutions, and such rules are likely to bear upon budgetary politics (McGillivray 2004); in our case, they might influence instrument choice. Two categories of political institutions offer most theoretical promise in the context of our story, namely electoral rules (proportional representation, or PR, vs. majoritarian) and regime types (parliamentary vs. presidential). Regarding economic institutions, we explored corporatism, which would capture levels of collective wage bargaining and, more generally, the labor–capital relationship. However, most widely employed institutional variables, such as electoral rules and regime types, are sticky. Because our model focuses on governmental responses to short-term surges in imports, it is unlikely that time-invariant institutional variables would significantly influence budgetary spending either on welfare or on industrial subsidies.

Moreover, while institutions influence policies and overall budgets by altering incentives or constraints faced by political actors (Tsebelis 1995), we do not find any theoretically compelling reason to believe that electoral institutions or regime type will influence the choice of specific instruments that governments decide to employ in the wake of increases in imports. To illustrate, while incumbents might be subjected to greater overall budgetary constraints in a proportional representation system in relation to a majoritarian system, these institutions are less likely to directly influence the incumbent's choice for welfare over subsidies (or vice versa): if the incumbent is subject to a higher level of constraints in a PR system, then it encounters the same institutional constraints, whether it seeks to increase spending on social welfare or on industrial subsidies. While the relationship between political–economic institutions and instrument choice needs to be explored in future research, theoretical priors do not suggest a meaningful relationship between institutions and the choices governments make between social welfare and industrial subsidies.⁹

This research makes two contributions to the compensation politics literature. First, instead of viewing compensation politics in terms of variations in budgetary support for social welfare policies only, we reframe the debate as one involving the issue of instrument choice: a choice between class-based and sector-based compensation. Because instruments have varying attributes, and therefore varying appeal to different constituencies, their attractiveness to political parties is likely to be conditioned on the contexts in which budgetary decisions are made. Our second

⁹ We consider these institutional variables as control variables and include them in alternative model specifications. Please see Table 2 for the results for these model specifications.

contribution is that rather than assume that Left parties will favor welfare over subsidies under all conditions, we examine whether preferences of Left governments are contingent on the levels of disruption caused by imports. In doing so, we seek to break away from both idealized Stolper-Samuelson as well as Ricardo-Viner perspectives on domestic cleavages and demonstrate that under certain conditions, class-based parties can favor sectoral compensation over class-based compensation.

Explaining Compensation Politics

This research examines conditions under which changes in imports interacting with governmental partisan gravity influence OECD governments' budgetary expenditures on social welfare in relation to industrial subsidies.¹⁰ To do so, we provide evidence to support our theoretical claim that governments view social welfare and industrial subsidies as competing ways to compensate actors disadvantaged by globalization. In the following, we first briefly describe our key variables and the theoretical rationale of their inclusion. Then, we establish the existence of relative salience via a system of simultaneous equations. Finally, we model relative salience as a function of foreign competition interacting with domestic partisan politics, and other relevant social, economic, and political variables.¹¹

Key Variables

In this research, we focus on two policy instruments of compensation politics: social welfare provisions and industrial subsidies. Social welfare spending includes two main categories of government public social spending: unemployment-related programs and active labor market programmes (ALMPs).¹² Government public social spending in OECD countries also includes seven other categories: *old age, survivors, incapacity benefits, health, family, housing, and others*. As we are mostly interested in the effects of foreign competition, domestic politics, as well as their interactions on the governmental choice of different compensational policies against the vagaries of globalization, we include only two categories of public social expenditure that are most closely related to the workplace: unemployment benefits, and active labor market programmes (ALMP).

Subsidies, defined as "... current unrequited payments that government units, including non-resident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services which they produce, sell or import" (OECD 2002), represent another important way that governments can compensate those hurt by foreign competition.

¹⁰ We have used the terms "relative salience" and "trade-off" to describe governments' budgetary preferences so far. A careful reading of these two terms suggests that trade-off implies a zero-sum relationship, whereas relative salience does not. The relationship between social welfare and industrial subsidies is that of a trade-off only under situations where increased spending in one policy area leads to a corresponding decrease in the other. Relative salience is a much broader concept than trade-off. The relative salience of social welfare to industrial subsidies changes not only when an increase in one policy area implies a decrease in the other (i.e., a trade-off) but also when social welfare and industrial subsidies both decrease or increase at different rates. It is more realistic to assume that governments, facing increasing foreign competition, will increase spending in both social welfare and industrial subsidies, while still maintaining their policy preferences by an unequal distribution of the increased budgetary allocations across two different policy instruments. This paper employs the term "relative salience" because "trade-off" is conceptually a subset of "relative salience." Moreover, in terms of empirical analysis, a ratio between social welfare and industrial subsidies (that is, relative salience) can safely capture both trade-off and relative salience, if any, between these two compensational policies.

¹¹ Please refer to Appendix A for a detailed description of the variables and the motivation for their inclusion in our models.

¹² Data are from the OECD's (2004) *Social Expenditure Database* (www.oecd.org/els/social/expenditure). This provides the total amount of public social expenditure (as a percentage of GDP), and also details nine categories of expenditure: *old age, survivors, incapacity benefits, health, family, active labor market policy, unemployment, housing, and others*.

Industrial subsidies are often provided at the sector level and directly target industries, and are sometimes referred to as “corporate welfare.”

Governments compensate domestic workers and businesses to ease the pain caused by foreign competition. We need a measurement of the harm associated with economic internationalization. We choose to utilize the degree of change in imports (*Changes in Imports*) to capture the dynamic aspect of foreign competition; the level of imports (*Imports*) is also included to account for the long-term static effects of foreign competition.¹³

One might argue that if the degree of change in imports simply reflects expanding domestic demand, such change will not cause domestic dislocation and therefore will not lead to demand for compensation. To account for this possibility, we include the Gross Domestic Product (*GDP growth rate*) as a covariate.

At the same time, increases in exports might offset the disruption caused by increases in imports by creating new jobs, some of which will be created in sectors facing competition from imports. This is quite likely for countries that engage in high levels of intraindustry trade, such as the OECD countries in our study. *Changes in Exports* is also included as a covariate in the analysis.

Among the domestic variables, we are most interested in the level of the government’s partisanship (*Left*) captured by the government’s center of gravity in the partisan spectrum (Cusack 1997). This is based on Castles and Mair’s coding of government parties’ placement on a left–right scale, weighted by their share of cabinet portfolios (Castles and Mair 1984). The index varies from zero (extreme right) to four (extreme left), although most observations are closer to the mean.

In terms of other socioeconomic variables, we first consider the possible effects of financial markets on governments’ policy choices. Indeed, much has been said on the power of global capital markets to discipline profligate governments. While capital mobility may not directly disrupt the livelihood of workers, it may constrain the supply of compensation. As Mosley (2000) puts it: “When dealing with developed economies, participants in the government bond market rely on a narrow set of indicators (specifically, inflation rates and overall budget-deficit levels). . .” Conscious of the sensitivity of the mobile capital, governments may choose to humor global capital markets by adjusting their compensation policies, both the overall level and its composition. Therefore, our model considers portfolio investments (*Portfolio*).

Foreign direct investment (FDI) may also influence the supply of compensation. Unlike the heyday of dependency theory, when FDI was viewed as pernicious for developing countries (Baran 1957), now developed and developing countries alike seek to attract and retain FDI. While there is a well-developed literature on the theory of multinational corporations (Dunning 1981) and the factors affecting multinationals’ location decisions (Jensen 2003), FDI inflows are sensitive to a government’s budgetary policies, both in terms of the levels and in terms of their composition. Profligate governments that run budgetary deficits, especially for the purpose of financing domestic welfare, do not convey the image of fiscal

¹³ Arguably, changes in aggregate imports do not perfectly measure the dislocation caused by imports in the domestic economy. Increased imports lead to domestic dislocation only if the imported products are also produced by domestic industries. Thus, it is not aggregate imports per se but only those imports competing with domestic firms that lead to dislocation and, therefore, demands for compensation. The issue might be addressed by developing a more detailed measurement of changes in imports based on sector-level trade data up to three-digit International Standard Industrial Classification (ISIC) so that we can exclude goods not produced domestically. At the same time, to determine what sorts of goods are not produced domestically, we need data on domestic production also up to 3-digit ISIC. Such data sets are not yet available. However, the next section’s analysis of simultaneous equations empirically demonstrates that *Changes in Imports* constitutes a reasonable proxy for the dislocation caused by imports in the domestic economy. This is because our analysis establishes a significant and positive relationship between *Changes in Imports* and the unemployment rate. In sum, while we recognize that sectoral-level data on imports and domestic production would provide a more precise measure of the dislocation caused by imports in the domestic economy, the aggregate-level import data employed in our paper suffices for our theoretical story.

responsibility and stability to foreign investors. Anticipating such a reaction, governments may voluntarily seek to curb spending, especially on categories that are vilified in the popular media, thereby affecting their choices regarding the levels and composition of compensation policies. In the short run, governments may respond not to the absolute levels of portfolio and FDI flows but to changes in them. For example, declining capital flows may prompt governments to pay closer attention to the implied preferences of foreign investors. To capture the dynamic aspects of the two capital-flow variables, our model incorporates the degree of change in FDI as percentage of GDP (*Change in FDI*) and the degree of change in portfolio flows as percentage of GDP (*Change in Portfolio*).¹⁴ For the description and rationale of inclusion of the rest of the independent variables, please refer to Appendix A.

Uncovering Relative Saliency

We examine three variables in a system of simultaneous equations: social welfare spending, industrial subsidies, and the unemployment rate. While social welfare and industrial subsidies are obviously endogenous, because they represent two policy choices faced by governments, we also include the unemployment rate as the third endogenous variable, given the possible feedback between this variable and the provisions of social welfare and/or industrial subsidies.¹⁵

We treat other variables as exogenous, with GDP per capita, changes in exports, and GDP growth rate as the three predetermined exogenous variables in the three equations, respectively, to keep the system identifiable. In each of the structural equations, we add temporal and spatial lags to model the temporal and spatial dependence in the data; we also include country fixed effects. Each of the three structural equations of the system can be generally written as follows:

$$y_{k,i,t} = \beta_0 + Y_{k-1,i,t}\beta_{k-1} + X_{m,i,t}\beta_m + \beta_{l=1}y_{k,i,t-l} + \rho W_i y_{k,i,t-1} + \tilde{\gamma}_{k,i} + \varepsilon_{k,i,t} \quad (1)$$

where $y_{k,i,t}$ is the response variable, that is, one of three ($k = 1, 2, 3$) endogenous variables of the system under consideration; $Y_{k-1,i,t}$ represents the other two endogenous variables, and $X_{m,i,t}$ portrays the exogenous variables relevant for each y ; $\beta_{l=1}y_{k,i,t-l}$ is an autoregressive term in each equation, where the lag length has been set to 1, and $\rho W_i y_{k,i,t-1}$ captures the possible spatial correlation among the data; finally, $\tilde{\gamma}_{k,i}$ is the country fixed effect and $\varepsilon_{k,i,t}$ the error term.¹⁶ More specifically, we model each endogenous variable as a function of the combinations of covariates as illustrated in Table 1.

We estimate the simultaneous equations using three-stage least squares.¹⁷ Table 1 summarizes the results. These results portray a strong feedback loop among the endogenous variables. The causal diagram in Figure 1 summarizes the basic feedback mechanisms by identifying the strongest, non-zero relationships in the estimates.¹⁸ We start with the triangle of the three endogenous variables of the system:

¹⁴ Another measure for portfolio flows may be the openness to legal barriers to those flows, rather than actual amounts. Dennis Quinn's capital controls data are often employed in this regard (Quinn and Inclan 1997). However, the data, which measures the intensity of capital controls on a 0–4-point scale, are not coded for continuous years and thus are not amenable to the time-series analysis employed in this study. One could also use the interest rate on benchmark government bonds as a measurement of financial market influence. Because we currently lack cross-country time-series data on this measurement, we consider this as part of the future research agenda on this subject. We want to thank one of the reviewers for suggesting the interest rate measurement.

¹⁵ The third endogenous variable, *Unemployment Rate*, refers to unemployed labor as a percentage of the active population. Data are from World Bank: <http://devdata.worldbank.org/dataonline>.

¹⁶ Here, W is the $n \times n$ connectivity matrix among all observations (row standardized with a zero diagonal), and k is the spatial coefficient to be estimated.

¹⁷ We used the *systemfit* library for R . All data and programs will be available on the replication Web site for this project. Data are described in detail in Appendix A.

¹⁸ With \rightarrow representing the direction of causal mechanisms, and “+” and “–” positive and negative effects, respectively.

TABLE 1. Three-Stage Least Squares Estimates for a Triangular, Endogenous System of Equations Linking Social Welfare, Industrial Subsidies, and Unemployment

	<i>Social Welfare</i>		<i>Industrial Subsidies</i>		<i>Unemployment Rate</i>	
	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$
<i>Social welfare</i>			- 0.130	0.076	3.182	0.639
<i>Industrial Subsidies</i>	- 2.696	1.306			3.666	1.089
<i>Unemployment</i>	0.216	0.049	0.042	0.020		
Intercept	6.438	3.577	0.320	0.203	- 1.885	1.832
Left	- 0.059	0.143	- 0.052	0.042	0.750	0.369
Imports	0.043	0.019	0.004	0.005	- 0.122	0.047
Change in imports	- 0.006	0.065	0.024	0.026	0.246	0.093
Change in imports \times left	- 0.045	0.036	- 0.018	0.009		
Change in FDI	- 0.075	0.077	- 0.026	0.021	0.052	0.225
Change in portfolio	0.005	0.008	- 0.0001	0.04		
Public debt	- 0.027	0.016	- 0.003	0.002		
Change in exports			- 0.006	0.011		
GDP growth rate					- 0.049	0.108
GDP per capita	- 0.215	0.218				
Temporal lag	0.533	0.122	0.882	0.054	0.072	0.201
Spatial lag	0.481	0.259	- 0.047	0.065	- 0.305	0.173

There are 163 observations in each equation. The OLS R^2 of the system is 0.70 and McElroy's R^2 is 0.97.

social welfare, industrial subsidies, and the unemployment rate. First, higher levels of unemployment induce higher levels of social welfare and industrial subsidies, and vice versa—that is not surprising, as governments are pressured to compensate as unemployment rates increase. On the other hand, higher levels of social welfare and industrial subsidies seem to provide disincentives for people to work and result in higher levels of unemployment.

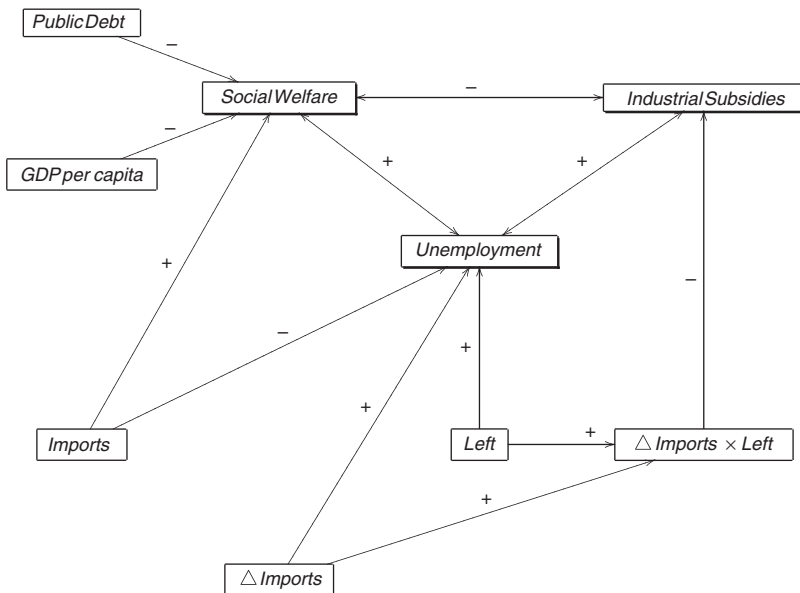


FIG. 1. Causal Diagram of System of Simultaneous Equations, Social Welfare, Industrial Subsidies, and Unemployment Rate as Endogenous Variables. Δ Imports stands for Change in Imports

Table 1 and Figure 1, both indicate that social welfare and industrial subsidies are negatively associated with each other: If we assume a constant unemployment rate, social welfare and industrial subsidies can be considered as substitutes, inducing a trade-off problem/opportunity; other things being equal, increasing industrial subsidies by 1% of GDP induces social welfare spending to decrease, on average, by about 3% of GDP. Stated differently, the substitution effect is not perfect. This suggests that there are economic and political advantages that lead governments to favor industrial subsidies over social welfare, possibly because they please both labor and capital, and prevent further unemployment. Furthermore, if we do not assume a constant unemployment rate, we can see from Figure 1 that increases in unemployment induce higher spending on both social welfare and industrial subsidies, but they increase at different rates. If the unemployment rate increases by one percentage point (as a percent of the active population), social welfare and industrial subsidies as a percentage of GDP are expected to increase by 0.22 and 0.04, respectively. Governments, facing increasing foreign competition, will increase spending in both social welfare and industrial subsidies, while maintaining their policy preferences, by an unequal distribution of the increased budgetary allocations across two different policy instruments—what we call “relative salience.”

These results establish the existence of a substitution relationship (given the same unemployment rate) and relative salience (allowing a varying unemployment rate) between social welfare spending and industrial subsidies. This, in turn, provides the foundation for our efforts in the next section to model governmental policy choices in response to increases in imports. Moreover, the three-stage least squares (3SLS) results empirically demonstrate that our variable *Changes in Imports* has powerful and negative effects on domestic employment, and can be used as a reasonable proxy for the dislocation caused by imports in the domestic economy.

Finally, we notice one of the chains of reactions revealed by the system of equations (Figure 1) where *Changes in Imports* positively affect *Unemployment Rate*, the increase of which in turn pushes up government spending on both compensation policies. It reveals that the underlying mechanism that motivates governments to respond to foreign competition and make decisions to compensate might take the following sequence: import penetration → business reaction to lay off workers → a rise in the unemployment rate → government reacts to compensate under pressures from constituencies and the public. This empirically bolsters our assumption regarding the timing issue of governments’ responses: they respond to demand for compensation only after foreign competition has translated into increases in unemployment.

To summarize, our results indicate a negative association between social welfare and industrial subsidies, assuming the same level of unemployment rate. When unemployment rates vary, social welfare and industrial subsidies change but at different rates, thus revealing a general version of relative salience of the two compensation policies. Second, we have empirically demonstrated that an increase in aggregate imports leads to an increase in domestic unemployment and therefore creates the political preconditions for actors to demand compensation, though we recognize that unemployment is sensitive to many forces.

We now examine conditions under which increases in imports, in interaction with partisanship, influence the supply of compensation. Specifically, we examine how the ratio of social welfare spending to industrial subsidies varies across OECD countries, over time (Figure 2). The ratio will have a value of 1.0 when these two components of spending are approximately of the same size. At the same time there is considerable variance in each country over time, and some countries, such as Denmark, for example, experience sharp declines in this ratio. Only in the United States does this ratio seem to hover around 1.0. Figure 3 illustrates these data on a country-by-country basis. Looked at separately, there does not appear to be any evidence of a secular trend in these data, despite such evidence in the aggregate.

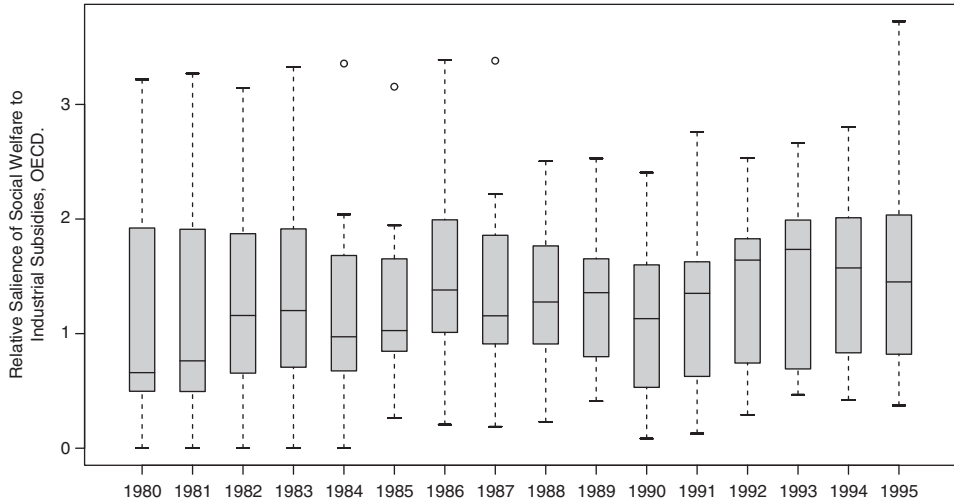


FIG. 2. Boxplots of the Ratio of Social Welfare to Industrial Subsidies Across Time, OECD, 1980 to 1995

Thus, considerable variance in the ratio of government spending appears to reflect the local context of two important policy instruments available to governments in the OECD. We turn now to an investigation of how the variations in this ratio itself may be better understood.

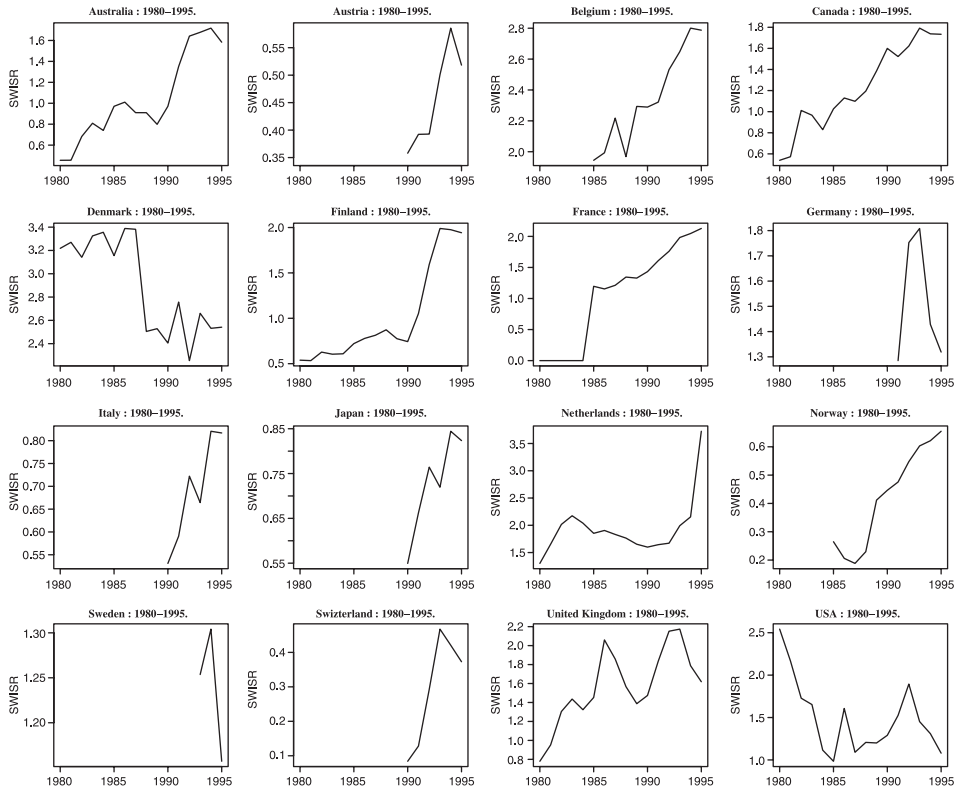


FIG. 3. Changes in the Ratio of Social Welfare to Industrial Subsidies Across Space, OECD, 1980 to 1995.

Some countries have missing observations. SWISR stands for Social Welfare to Industrial Subsidies Ratio.

Modeling Relative Salience

Our research focuses on the politics of compensating workers hurt by imports in 16 OECD countries from 1980 to 1995. We define the dependent variable of the study as the *ratio* of social welfare expenditure, measured as public social expenditure on unemployment and active labor market programmes as the percentage of GDP, to industrial subsidies (payable), also measured as the percentage of the GDP, for country i at year t .¹⁹ We want to model this ratio as a function of social, economic, and political variables, among which we are mostly interested in the effects of increasing foreign competition, the government's partisan gravity, and their interaction. Before we proceed, we note that while the ratio variable can be used to capture the relative salience of the two policy instruments we are interested in, a ratio variable, by its nature, cannot model the absolute levels of each policy instrument. However, the previous section on simultaneous equations provides us an answer of how the covariates affect the absolute levels of social welfare and industrial subsidies as well as the feedback effects among social welfare, industrial subsidies, and the unemployment rate.

Given possibilities of serial correlation, contemporary correlation, and heteroscedasticity in time-series cross-sectional data (TSCS), we could use two models: (1) random-effects model (REM) and (2) ordinary least squares (OLS) plus panel-corrected standard errors fixed-effects model (FEM). The following sections provide the details of each model.

Modeling with Random Effects

To respond to the problems of serial correlation, contemporary correlation, and heteroscedasticity, we fit a two-level hierarchical model with a univariate mean-zero random intercept to capture cross-country variations in our dependent variable (Laird and Ware 1982; Greene 1993). While the random effects in our model are conceptually analogous to the country-fixed effects usually employed in TSCS analyses, they have certain statistical advantages. Unlike REMs, FEMs use one degree of freedom for each unit. Such loss of information inflates the standard errors and makes the estimates of the coefficients less precise. More importantly, REMs treat the data as samples drawn from a large population, thereby making it possible to replicate the analysis with out-of-sample observations with similar characteristics.

We specify a first-order autoregressive process to capture the within-group/country serial correlation of the data. To account for contemporary cross-sectional dependence among observations, our model includes a spatial lag. Our assumption is that the contemporary spatial dependence in policy choices takes a form of the local Markov random field that can be conceptualized as spatially analogous to the first-order Markov property in time (Ward and Gleditsch 2002). We operationalize this spatial lag term as the average policy choice for all countries adjacent to country i at year $t - 1$: $kW_{i,t-1}$. The resulting model can be written as

$$y_{i,t} = \beta_0 + \beta_i + X\beta + kW_{i,t-1} + \xi_{i,t} \quad (2)$$

where β_0 is the population intercept, and β_i represents mean-zero random unit intercepts and follows normal distribution. $X\beta$ depicts the linear covariates and an estimate of their impact on the dependent variable. Residuals are further decomposed as $\xi_{i,t} = \rho\xi_{i,t-1} + \varepsilon_{i,t}$, where ρ is the first-order autoregressive correlation term (AR1), and $\varepsilon_{i,t}$ follows normal distribution $N(0, \sigma^2)$.²⁰

¹⁹ The definitions of and data for social welfare and industrial subsidies in calculating relative salience are consistent with those in the previous section; therefore, a detailed description is omitted in this section.

²⁰ We estimated this model in R using the *nlme* package (Bates and Pinheiro 1998). See <http://cm.bell-labs.com/cm/ms/departments/sia/project/nlme/index.html> for detailed information.

Modeling with Fixed Effects

Although we believe that the random-effects model is the appropriate specification, many scholars will be curious about the fixed-effects specification, given its prominence in contemporary research. Owing to Beck and Katz (1995), the use of ordinary least squares with a lagged dependent variable and panel-corrected standard errors (PCSE) is routinely employed in the analysis of time-series cross-sectional data. Panel-corrected standard errors were designed for balanced panels, that is, a panel with the same number of time points for each observation. Such balanced panels are called “rectangular”; like many other studies, our data are not rectangular, since, for example, Norway has observations only for 1985–1995, while Belgium has missing data during the period from 1980 to 1984. We followed the procedure of Franzese (1996) to compute the panel-corrected standard errors by substituting zeros for missing values in the design matrix X and residual matrix E and dividing each element of $E'E$ by the number of (pairs of) observations on which it is based.²¹

This model can be written as

$$y_{i,t} = \beta_0 + \beta_1 y_{i,t-1} + X\beta + \tilde{\beta}_i C_i + \varepsilon_{i,t} \quad (3)$$

where $y_{i,t-1}$ refers to the 1-year lagged-dependent variable; $\tilde{\beta}_i C_i$ represents the country-fixed effects. $X\beta$, as in the previous model, represents the linear covariates and an estimate of their impact on the dependent variable. The residuals follow a normal distribution $N(0, \sigma^2)$. We then use residuals from the fitted model above to calculate the panel-corrected standard errors; we report these in the following section.

Results

Our preferred specification uses random effects. Fixed-effects models may be better suited for TSCS data with a time series of $T \rightarrow 30$ (Judson and Owen 1999), but our data cover only 15 or 16 years (depending on whether we use a lagged-dependent variable or not). To formally test which model is more appropriate for the data analysis, we conducted a Hausman test, usually applied in the literature (Hsiao 1986), which shows the random effects model is better suited for our data ($\text{Prob} > \chi^2 = 0.113$): the estimated coefficients from the random-effects model are more efficient and not less consistent than those of the fixed-effects model.²²

Beck, King, and Zeng (2000) illustrate that quantitative studies in social sciences can be improved via the use of an out-of-sample forecasting heuristic. They note (page 21) that “statistical analysts must be concerned about whether they are taking

²¹ Beck and Katz’s PCSE estimate of coefficient standard errors is defined by the square root of the diagonal of the following:

$$(X'X)^{-1} X' \left(\frac{E'E}{T} \otimes I_T \right) X (X'X)^{-1}, \quad (\text{N-1})$$

where X is the design matrix, E is the $T \times N$ (number of time periods by number of cross-sections) matrix of OLS residuals, \otimes is the Kronecker product operator, and I_T is an identity matrix of size T . $\frac{E'E}{T}$ is an estimate of the error covariance between cross-sections. Each element of $E'E$ may not be based on rectangular data. To solve this problem, we follow the procedure proposed by Franzese (1996) and substitute zeros for missing values in X and E and divide each element of $E'E$ by the number of (pairs of) observations on which it is based. Our code for this procedure is available on the archive web site for this project.

²² The Hausman test examines the null hypothesis that the coefficients estimated by the random-effects estimator are equal to the ones estimated by the fixed-effects estimator in terms of the consistency of the coefficients. If they are (e.g., insignificant p -value: $\text{Prob} > \chi^2$ larger than .05), then it is better to use random effects as its coefficients estimates are both consistent and efficient. If the p -value is significant, however, one usually chooses fixed effects as a choice of consistency over efficiency. The Hausman test suggests that the null hypothesis cannot be rejected ($\text{Prob} > \chi^2 = .113$) and we should choose the random-effects model (which gives efficient and consistent estimates of coefficients in our case) over the fixed-effects model. We thank one of the reviewers for recommending this test to us.

TABLE 2. “REM: Main” is Our Main Model: “Estimate” Reports the Estimated Mean Coefficient and “ $\hat{\sigma}$ ” the Standard Deviation

	<i>REM: Main</i>		<i>With Spending Levels</i>		<i>With Institutions</i>		<i>With Union Density</i>	
	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$
Intercept	-0.082	0.655	-0.146	0.063	-0.139	0.703	-0.526	0.884
Imports	0.017	0.009	0.017	0.009	0.022	0.010	0.019	0.010
Change in imports	-0.051	0.025	-0.050	0.025	-0.053	0.025	-0.051	0.027
Left	-0.086	0.045	-0.079	0.047	-0.087	0.045	-0.093	0.047
Change in Imports \times left	0.017	0.009	0.017	0.009	0.018	0.009	0.017	0.009
Change in FDI	0.027	0.021	0.026	0.021	0.027	0.022	0.024	0.023
Change in portfolio	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.005
Change in exports	0.006	0.012	0.006	0.012	0.004	0.013	0.005	0.014
Public debt	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005
Unemployment	0.085	0.018	0.077	0.022	0.085	0.018	0.086	0.019
Growth	-0.009	0.009	-0.008	0.010	-0.009	0.010	-0.010	0.011
GDP per capita	0.015	0.023	0.014	0.023	0.020	0.026	0.029	0.029
Spatial lag at $t - 1: k$	-0.021	0.082	-0.023	0.082	-0.020	0.083	-0.033	0.089
PR					-0.273	0.519	-0.432	0.599
Presidential					0.512	0.876	0.565	0.907
EU membership					-0.146	0.150	-0.132	0.156
Level of wage bargaining					-0.010	0.039	-0.017	0.040
Social			0.026	0.046				
Welfare + subsidies								
Union density							0.007	0.010
ARI:	$\rho = 0.954$		$\rho = 0.949$		$\rho = 0.942$		$\rho = 0.940$	
<i>Var (Intercept_{<i>t</i>})</i>	$\tau^2 = 0.106$		$\tau^2 = 0.060$		$\tau^2 = 0.226$		$\tau^2 = 0.242$	
Log-likelihood	-53.704		-56.006		-55.426		-62.748	
No. of Observations	171		171		171		171	

EU, European Union; FDI, Foreign direct investment; GDP, Gross Domestic Product.

advantage of some idiosyncratic features of the data to improve fit at the expense of detecting structure” and assert that out-of-sample forecasts are considered the “gold standard” in terms of assessing model fit. We conducted, in Appendix B, cross-validation experiments, the results of which show that the random-effects model provides a better model fit than the fixed-effects model. More specifically, the root mean squared error between the predicted and actual value of the dependent variable of the REM is substantially smaller than that of the FEM: 0.687 (by year) and 0.789 (by country) for the REM versus 1.313 (by year) and 1.235 (by country) for the FEM. Therefore, we only report the findings from random-effects models and provide those from the fixed-effects model (with comparison with the main random-effects model) in Appendix C for those interested.

Table 2 summarizes results from different model specifications of the random-effects model: to the left, “REM: Main” presents the basic model, and the following models add the level of total government spending in both categories (social welfare and industrial subsidies), domestic and international institutions, and labor union density. Our analysis suggests that the three variables of interest, namely changes in imports, government partisan gravity, and their interactive effect, are each quite powerful through all the model specifications.²³ They have credible intervals that

²³ We also examined other interaction terms, such as *Import* \times *Left*. Because they were not statistically significant and the magnitudes of their effects were very small, we have not included them in the final model. Moreover, we

do not include zero and would be considered statistically significant by classical inferential procedures. All models we employ provide similar estimates of these three variables. The interactive term has an important, non-zero effect on our dependent variable, and this further justifies its inclusion in our models. In the following, we use the estimates from the basic model for interpretation of the results.

The estimated coefficients of the lower order terms, namely changes in imports and government partisan gravity, are -0.051 and -0.086 , respectively. These are conditional coefficients. When imports are unchanging, the budgetary salience of social welfare to industrial subsidies and the so-called “Leftness” of the government are negatively associated. That is, with no change in imports over the previous year, and government partisanship becoming one unit more *Left* on the partisan gravity spectrum, the salience is expected to decrease by about 8.6%. Similarly, when the variable *Left* takes the value 0 on the 0 – 4 scale of government partisan gravity, that is, when governments are ideologically to the right, social welfare to industrial subsidies salience is negatively associated with the change in imports (by 0.051). In other words, for the case of the governments in our sample that are furthest to the right on the left–right spectrum, an increase in the change of imports is associated with a decrease in the ratio of social welfare to industrial subsidies by about 5.1%.

To interpret the coefficient of the interactive term, lower-order coefficients should be viewed as the baselines (Friedrich 1982). Figure 4 illustrates the ways in which the social welfare to industrial subsidies ratio changes with the variable *Left*, conditional on different levels of *Change in Imports* in a three-dimensional space.²⁴ The range of the variable *Change in Imports* in our data is from -5.72 to 12.51 , with a mean of 0.466 , a 95% interval ranging from -3.12 to 7.14 , and a standard deviation of 2.46 . The straight line on the closest (to the reader) plane defined by the *Ratio of Social Welfare to Industrial Subsidies* axis (vertical) and the *Left* axis captures a negative relationship between *Left* and the ratio of social welfare to industrial subsidies, given that *Change in Imports* is a negative 6% of GDP. At the point where *Change in Imports* equals 0, the social welfare to industrial subsidies ratio is negatively associated with *Left* (by -0.086), and the relationship is also bounded by small standard errors. If imports increase by one standard deviation (an increase by 2.46% of the GDP), we expect this association to become less negative: change from -0.086 to $-0.086 + (2.46 \times 0.017)$, which equals -0.044 . Similarly, if *Change in Imports* decreases by one standard deviation, we expect to see this association become more negative: from -0.086 to -1.27 . Once *Change in Imports* reaches 6% of the GDP, *Left* is positively associated with the social welfare to industrial subsidies ratio. In other words, in country-years with dramatic increases in foreign competition (*Change in Imports* $\geq 6\%$), Left governments tend to favor social welfare over industrial subsidies, while in country-years with small increases in imports, no changes in imports, or even diminished foreign competition, Left governments tend to prefer industrial subsidies over social welfare policies.

tried to include a Left-labor power variable—the interaction term of Left and Union Density in our model. However, it has no significant effect on the dependent variable. We therefore have not included this “left-labor power” indicator in the final models. Finally, the possible strategic role of labor unions in the instrument choice of compensation policies has not been fully addressed. If union leaders can rationally anticipate the consequences of import surges, they could mobilize early and demand subsidies rather than social welfare to prevent unemployment. This theoretical alternative warrants further empirical investigation. So far, our empirical analysis does not seem to support this, because the labor union variable alone, as well as in interaction with partisan gravity, has no effect on governments’ instrument choice. An analysis of the composition of the import surge and the structure of union organization in sectors facing severe foreign competition is needed to test this theoretical alternative.

²⁴ We also added four horizontal lines at the point of the vertical axis where the “Ratio of Social Welfare to Industrial Subsidies = 1” to create a reference surface where social welfare and industrial subsidies have equal importance in governments’ compensation policy portfolios.

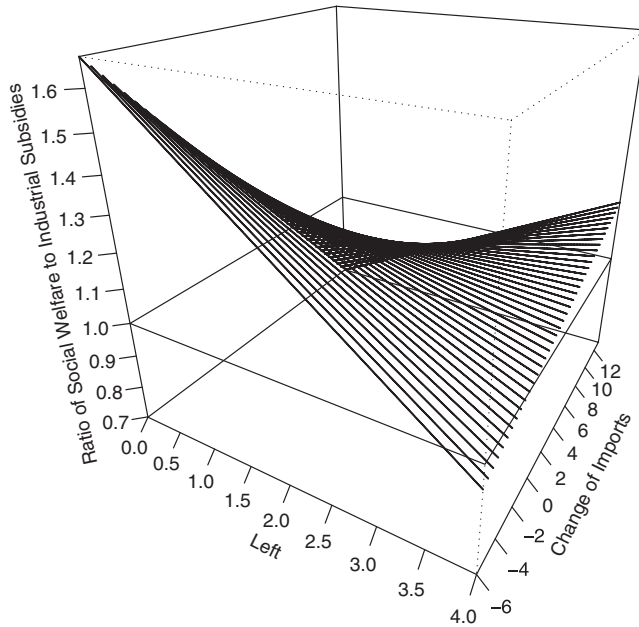


FIG. 4. Effects of Governmental Partisan Gravity on the Ratio of Social Welfare of Industrial Subsidies, Conditional on Levels of Changes in Imports

We now turn to the second part of the story, namely, how the social welfare to industrial subsidies ratio changes with *Change in Imports* at different levels of *Left*. The straight line on the plane defined by the *Ratio of Social Welfare to Industrial Subsidies* axis and the *Changes of Imports* axis captures a negative relationship between *Changes in Import* and the ratio of social welfare to industrial subsidies, again given that *Left* takes the value of zero (the incumbent furthest to the right end of the left-right spectrum): when the Right dominates the government, increases in foreign competition makes social welfare provisions less salient as a policy choice. As the government's partisan gravity moves from zero (most right) to one (medium right/left), the slope of the ratio for *Change in Imports* moves from -0.051 to -0.034 . In other words, when the government becomes more Left-dominated, the association between the relative salience of social welfare to industrial subsidies and *Change in Imports* is still negative (-0.034), but to a lesser extent. Therefore, as we move along the *Left* axis from zero to four (government's partisan component becomes increasingly Left), the negative association between the social welfare to industrial subsidies ratio and *Change in Imports* is expected to weaken, and this association ultimately turns positive when the government is at the extreme left end of the scale (*Left* = 4), where the slope of the ratio (of social welfare to industrial subsidies) on *Change in Imports* moves to 0.017 . In substantive terms, with (extreme) Left governments, increases in imports lead governments to grant higher salience to social welfare over industrial subsidies.

Our discussion of the effects of foreign competition and domestic politics, as captured by change in imports and government partisan gravity, respectively, on governments' policy choices does not completely resolve the convergence-divergence debate, simply because there is no single winner: Globalization and domestic politics both matter, but only in interaction with each other. The absence of uniform relationships between partisanship and foreign competition on the one hand, and government policy choices on the other, pushes us to a more complex, but realistic,

assessment of the world of welfare politics. Among other social, economic, and political covariates, only the unemployment rate is powerful as a covariate. As the unemployment rate increases by 1%, the social welfare to industrial subsidies ratio increases by 0.085. In turn, for every dollar governments spend on industrial subsidies, they are likely to spend 1 dollar and 9 cents on providing unemployment benefits and active labor market programmes.

While Left governments may be putatively prolabor, they also tend to favor industrial subsidies over social welfare, as long as increases in foreign competition are mild. Once foreign competition exceeds a threshold, Left governments begin to tilt toward directly compensating workers via social welfare.

Conclusion

This research makes two contributions to the study of compensation politics. First, unlike the existing literature, we do not adopt the one-instrument-at-a-time approach. Instead of viewing compensation politics in terms of variations in budgetary support for social welfare policies only, we reframe the debate as one involving the issue of instrument choice. We identify the industrial subsidy as another instrument that governments employ to compensate those disadvantaged by the globalization process, and we capture the instrument choice by looking at the relative budgetary salience of welfare to subsidies. By employing a system of simultaneous equations to illustrate the feedback among social welfare provisions, industrial subsidies, and the unemployment rate, we demonstrate that social welfare is negatively associated with industrial subsidies (under the same level of unemployment). Thus, in some cases, governments may view these policy instruments as substitutes. Understanding instrument choice is important because instruments have varying attributes and therefore varying political payoffs for governments. Such political payoffs, we contend, are conditioned on the contexts in which budgetary decisions are made. Thus, our theoretical approach is both descriptively and analytically superior to those typically employed in the study of compensation politics.

Our second contribution is that instead of assuming that Left parties will favor welfare over subsidies under all conditions, we examine whether preferences of Left governments are contingent on the levels of disruption caused by imports. In doing so, we seek to break away from idealized Stolper-Samuelson as well as Ricardo-Viner perspectives on domestic cleavages and demonstrate that under certain conditions, class-based parties can favor sectoral compensation over class-centered compensation. This article empirically demonstrates that international and domestic factors together drive compensation politics. While domestic partisanship (*Left*) and globalization (*Changes in Imports*) bear upon compensation politics, they do so in interaction with each other. Instead of a single uniform correlation between government partisan gravity or changes in levels of foreign competition on the one hand, and the relative salience of social welfare to industrial subsidies on the other, the relationship itself depends upon the different values of the other variable. When the Right dominates the government, increases in foreign competition are associated with increased salience of industrial subsidies over social welfare. As the government's composition becomes less dominated by the Right and more dominated by the Left, its proclivity for industrial subsidies over social welfare weakens. When governments become very Left, they tend to prefer social welfare over industrial subsidies. In situations with moderate increases in imports, Left governments appear to prefer industrial subsidies over social welfare. However, as the imports level increases sharply—specifically with the annual change in imports reaching the threshold of 6% of GDP, Left governments seem to switch their preferences to social welfare over industrial subsidies. This research suggests, therefore,

that domestic choices regarding compensation policies are contingent upon the complex interaction of domestic variables and levels of foreign competition.

We hope our research brings in a new perspective to the study of compensation politics and opens up questions for future research. Three issues warrant more empirical investigation. First, even though we have discussed why industrial subsidies do not have to be sectoral and social welfare provisions class-based, we need some measurement of factor mobility to formally test the theoretical alternative that a government's choice of compensation policies is simply a function of societal cleavages (class vs. sector), which, in turn, is determined by the extent to which factors of production are mobile between industries (Hiscox 2001). Secondly, industrial subsidies often take different forms and target different industries. We use country-level aggregate data of subsidies because sector-level data are simply not available. However, the absence of such data leaves a sectoral question unanswered: whether and to what extent subsidies are paid to the same industries that are suffering as a result of increased foreign competition. Finally, our data analysis only covers the time period between 1980 and 1995 because the partisan gravity variable is only available through 1995. This makes the entire period under study "pre-Maastricht" and "pre-WTO." The Maastricht Treaty applies the convergence criteria for the European Economic and Monetary Union (EMU) and the WTO restricts the feasibility of subsidies as an instrument of trade protection. We intend to address these important issues in future work with newly collected data that not only illuminate the sectoral issues and new configurations of political alignments but also extend the analysis beyond the mid 1990s.

Appendix A. Data

Dependent Variable

This paper focuses on the politics of compensating workers hurt by imports in 16 OECD countries from 1980 to 1995. The data on budgetary allocations on unemployment-related programs and ALMPs are from the OECD's (2004) Social Expenditure Database (SOCX, www.oecd.org/els/social/expenditure). This recently released database provides data on aggregate public social expenditure (as percentage of GDP) broken down by nine categories of expenditures: old age, survivors, incapacity benefits, health, family, active labor market policy (ALMPs), unemployment, housing, and others. Because we are interested in studying the effects of imports on budgetary allocations to compensate workers, we include only two categories of social expenditure that are most closely associated with government's efforts to help them: unemployment benefits and ALMPs.

The data on industrial subsidies are from OECD (2004). The data cover "direct grants to producers in terms of gross budgetary outlays and do not include other types of subsidies such as credit subsidies, tax concessions . . ." (Lee 2002). The data follow the System of National Accounts (SNA) and are collected from the OECD online database: *OECD Annual National Accounts Volume II—Detailed Tables—Main Aggregates Vol 2004 release 01*, <http://iris.sourceoecd.org/vl=1592828/cl=94/nw=1/rpsv/~4237/v149n1/s11/p1>.

Independent Variables

Change and Level of Imports

We employ two variables to measure the levels of foreign competition. Changes in imports (*Changes in Imports*) reflect the dynamic aspect of foreign competition while the level of imports (*Imports*) captures the static effects of foreign competition. The data on imports are from Gleditsch (2002): <http://weber.ucsd.edu/~kgledits/>

exptradegdp.html. Both the level and changes in imports are computed as percentages of GDP.

Partisan Gravity

Among the domestic variables, we are most interested in government's partisanship (*Left*) that is captured by the government's center of gravity in the partisan spectrum (Cusack 1997). This is based on Castles and Mair's coding of government parties' placement on a left–right scale, weighted by their share of cabinet portfolios (Castles and Mair 1984). The index varies from zero (extreme right) to four (extreme left), although most observations are closer to the mean. We use the data collected by (Iversen and Cusack 2000): <http://www.people.fas.harvard.edu/~iversen/data/deindustrialization.htm>.

Change in Exports

Our models include several domestic and international variables that are widely thought to influence budgetary support for compensation policies. While imports may disrupt the livelihoods of domestic workers, exports create jobs or put upward pressure on domestic wages. Thus, increases in exports (*Change in Exports*) may influence the levels of various compensations and the relative salience of social welfare to industrial subsidies. The export data are from Gleditsch (2002): <http://weber.ucsd.edu/~kgledits/exptradegdp.html>.

Changes in Portfolio Investment and FDI

Much has been said on the power of global capital markets to discipline profligate governments. While capital mobility may not directly disrupt the livelihoods of workers, it may constrain the supply of compensation. Perceiving the sensitivity of mobile capital, governments may choose to humor global capital markets by adjusting their compensation policies, both the level and the composition. Therefore, our model incorporates portfolio investments. The data on net portfolio investment, excluding LCFAR (Liabilities Constituting Foreign Authorities' Reserves) as a percentage of GDP, are from the World Bank: <http://devdata.worldbank.org/data-online/>.

Foreign direct investment (FDI) may also influence the supply of compensation. Unlike the heyday of dependency theory, when FDI was viewed as pernicious for developing countries (Baran 1957), now developed and developing countries alike seek to attract and retain FDI. While there is a well-developed literature on the theory of multinational corporations (Dunning 1981) and factors affecting multinationals' location decisions (Jensen 2003), one could argue that FDI inflows are likely to be sensitive to governments' budgetary policies. Profligate governments that run budgetary deficits do not convey the image of fiscal responsibility and stability to foreign investors. Anticipating such a reaction, governments may voluntarily seek to curb spending, thereby affecting their choices regarding levels and composition of compensation policies. Thus, our model includes net FDI inflows as a percentage of GDP as a covariate. The data are also from the World Bank.

Governments may respond not to the absolute levels of portfolio and FDI flows but to changes in them. For example, declining capital flows may prompt governments to pay closer attention to the implied preferences of foreign investors for smaller deficits. To capture the dynamic aspects of the two capital flow variables, our model incorporates changes in FDI (*Change in FDI*) and changes in portfolio flows (*Change in Portfolio*).

Budget Deficits

While there may not be an explicit upper bound on governmental spending (EU being a notable exception), governments carrying huge public debts may come

under pressure to rein in their budgets. Therefore, our model includes public debt as a percentage of GDP. The data are from Franzese (2002): <http://www-personal.umich.edu/~franzese/Publications.html>.

Variables for Macroeconomic Performance

Our model includes variables reflecting indicators of macroeconomic performance, namely *GDP per capita*, *GDP growth rate*, and *Unemployment rate*. If the economy is doing well—in terms of either low unemployment levels or high economic growth, governments may come under less-severe pressure to protect workers from imports. The data are from the World Bank. See the World Bank online database at: <http://devdata.worldbank.org/dataonline/>.

Institutional Variables

Even though neither our theory nor theoretical priors expect institutional variables to have significant effects on a government's choice of compensation policies, we still include the following institutional variables in our analysis—electoral rules (PR vs. majoritarian), regime types (parliamentary vs. presidential), the level of wage bargaining, and EU membership. Data for the level of wage bargaining are from Miriam Golden, Peter Lange, and Michael Wallerstein 2002: "Union Centralization among Advanced Industrial Societies: An Empirical Study." Data set available at <http://www.shelley.polisci.ucla.edu/data>. Version dated July 28, 2004.

Labor Union Density

The strength of the labor union can be operationalized as the percentage of union members among workers. We thank Iversen and Cusack (2000) for making the data available at: <http://www.people.fas.harvard.edu/~iversen/data/deindustrialization.htm>. The data are originally from Visser (1989, 1996).

Appendix B. Out-of-Sample Predictions

We illustrate out-of-sample predictions and plot the predicted values against the actual values of the the ratio of social welfare spending to industrial subsidies. First, we consider the out-of-sample prediction by year: We choose 1 year, say 1995, and run both the random-effects model (REM) and fixed-effects model (FEM) based on data from 1980 to 1994, estimate the coefficients, and calculate the social welfare–industrial subsidies ratio for 1995—the predicted dependent variable in that year. We repeat these steps for all other years until we have predicted values for all the years for the dependent variable. Then, we plot the predicted values against the actual values as shown in Figure B1. We have plotted this for the REM (denoted herein as Model I) as well as for the FEM models (Model II). We repeated the procedure for the out-of-sample prediction by country and plotted the predicted values against the actual values. The 45-degree black line in the plots represents 100% precise prediction; the closer the dots are to this line, the better the predictive power of our model.

A visual impression from the plots suggests that Model I predicts better than Model II. To measure the precision of the predictions, we calculate the root mean squared error as

$$RMSE = \sqrt{\frac{1}{n} \sum (y_i - \hat{y}_i)^2}, \quad (\text{B-1})$$

where n equals the number of observations predicted, y_i the actual values of the social welfare to industrial subsidy ratio, and \hat{y}_i the predicted values of the ratio (Greene 1993). Notice that the smaller the root mean squared error (RMSE), the

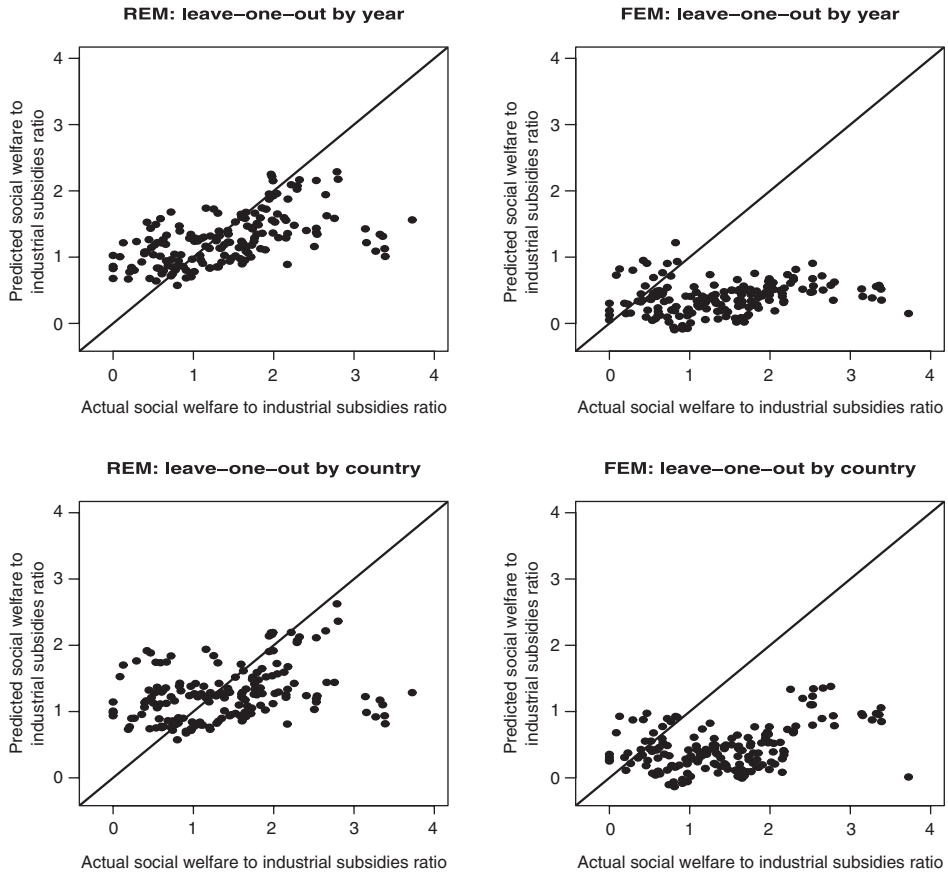


FIG. B1. Out-of-Sample Predictions

better is the prediction. The RMSEs from Model I are 0.687 (by year) and 0.789 (by country); those from Model II are 1.313 (by year) and 1.235 (by country). Random effects therefore provide better predictions.

However, why are the RMSEs from Model I still relatively large? This is because we exclude the lagged-dependent variable when calculating the predicted values of the dependent variable. In both models, we use a lagged-dependent variable: explicitly as in OLS + PCSE and implicitly as in the *ARI* procedure of Model I. However, for our test, we are more interested in how the response variable is predicted by the explanatory variables of interest rather than by the 1-year lag of the response variable. Hence, while this exclusion of the lagged-dependent variable inflates the RMSEs, it gives us a better sense of the predictive power of the two models.

Appendix C. Results From Fixed-Effects Model

We report the results from the fixed-effects model in this appendix. The $\hat{\sigma}$ is panel-corrected standard errors (Beck and Katz 1995; Franzese 1996). The estimates for *Left*, *Change in Imports*, and *Change in Imports* \times *Left* are similar to those in the random-effects model, only the confidence intervals are a little wider (Table C1).

TABLE C1. Effects of Imports, Domestic Institutions, and Their Interaction on Compensation Policies

	<i>Random Effects Model</i>		<i>Fixed Effects Model</i>	
	<i>Estimate</i>	$\hat{\sigma}$	<i>Estimate</i>	$\hat{\sigma}$
Intercept	-0.082	0.655	-0.483	0.023
SCR _{t-1}			0.709	0.065
Imports	0.017	0.009	0.003	0.005
Change in Imports	-0.051	0.025	-0.068	0.036
Left	-0.086	0.045	-0.077	0.039
Change in Imports × Left	0.017	0.009	0.028	0.014
Change in FDI	0.027	0.021	0.014	0.023
Change in Portfolio	0.004	0.004	0.003	0.004
Change in Exports	0.006	0.012	0.002	0.011
Public Debt	0.004	0.004	0.003	0.003
Unemployment	0.085	0.018	0.025	0.011
Growth	-0.009	0.009	-0.032	0.009
GDP per capita	0.015	0.023	0.029	0.005
Spatial Lag at $t-1: k$,	-0.021	0.082		
AR1:		$\rho = 0.954$		
<i>Var (Intercept_i)</i>		$\tau = 0.0006$		
Log-Likelihood		-53.704	\bar{R}^2	0.911
Observations		171		162

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