

**Stephanie Rickard**

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# Strategic targeting: The Effect of Institutions and Interests on Distributive Transfers

Stephanie J. Rickard

Virtually every government provides distributive transfers for electoral purposes. However, the level and form of such transfers vary dramatically across countries. Although transfers take many forms, they can generally be characterized as being either broad (providing benefits to large segments of the electorate) or narrow (targeting benefits only to select groups of voters). Variation in the *form* of distributive transfers across countries can be explained by voters' economic interests and domestic institutions. Voters' preferences over transfer form, shaped in part by the mobility of their assets, together with a country's electoral rules determine the benefits politicians gain from providing either broad or narrow transfers. Using new measures of transfer form, I find that although majoritarian systems are more prone to narrow transfers, proportional systems are more responsive to increases in voter demand for narrow transfers, all else equal.

Keywords: distribution, electoral rules, subsidies, labor mobility

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## Introduction

Virtually every government provides distributive transfers for electoral purposes. However, the level and form of such transfers vary dramatically across countries. Cross-national variation in the *level* of (re)distributive transfers has generated significant research (e.g. Alesina, Glaeser, Sacerdote, 2001; Bawn and Rosenbluth, 2006; Iversen and Soskice, 2006; Lizzeri and Persico, 2001; Milesi-Ferreti, Rostagno and Perotti, 2001; Persson and Tabellini, 1999, 2000, 2003). Variation in transfer *form* has received relatively less scholarly attention.

Distributive transfers provide particularistic benefits to select groups (Collie, 1988). In practice, these groups may be more or less select. Broadly targeted transfers provide benefits to large groups of individuals who share general attributes. Examples of broad transfers include unemployment benefits made available to all persons regardless of their occupation or previous industry of employment and pensions available to all persons of a certain age (Verdier, 1995). In contrast, narrowly targeted transfers provide benefits only to very select segments of the electorate. For example, industry-specific subsidies benefit only those voters whose assets (land, labor, or capital) are employed in the privileged industry. Although distributive transfers take many forms, they can generally be characterized as being either broad or narrow.

Governments' portfolios of distributive policies typically include both broad and narrow transfers. However, it is frequently the case that one type of transfer tends to be privileged over the other. For example, the United Kingdom's portfolio of distributive policies during the late 1960s and early 1970s consisted primarily of narrow transfers. During this period, politicians implemented policies whose explicit objectives were to provide select benefits to narrow groups, such as individual industries and firms (Sharp and Shepherd, 1987). In contrast, Germany's portfolio of distributive policies consisted almost exclusively of broad transfers during this

period. Transfers were generally made available to all industries in the manufacturing sector rather than a select few (Shepherd and Duchene, 1983). In fact, German governments routinely refused to provide transfers to individual firms or industries during this period (Schatz and Wolter, 1987). Instead, politicians focused on building a comprehensive framework of broadly targeted distributive transfers, called the *Soziale Marktwirtschaft* (Sharp and Shepherd, 1987).

Cross-national differences in transfer form persist today despite increased economic integration and restrictions on certain types of transfers embodied in international agreements like the World Trade Organization and the European Union. How can the variation in the form of distributive transfers across countries be explained?

The form of distributive transfers in a given country is influenced by both domestic institutions and domestic interests. Two sets of interests are of critical importance for transfer form: the economic interests of voters and the political interests of office holders and office seekers. Politicians prefer the transfer type with the greatest electoral benefits. The electoral benefits politicians gain from providing either broad or narrow transfers depend critically on voters' preferences over transfer form and the country's electoral rules. Voters prefer the transfer type that maximizes their income. The electoral rules shape the nature of electoral competition and identify those voters whose preferences matter the most for politicians' reelection chances. Taken together, electoral institutions and domestic interests shape the form of distributive transfers.

Examining the joint effect of domestic interests and institutions on the form distributive transfers makes several important contributions to our understanding of the politics of (re)distribution. First, it provides a new empirical test of an important hypothesis proposed in the literature, namely that electoral rules affect the form of distributive transfers. Although this

hypothesis has received considerable scholarly attention to date, it has been subjected to few empirical tests because of the difficulty of measuring transfer form. Second, this research introduces domestic interests to existing institutional explanations of transfer form. Domestic interests have been frequently overlooked in studies of the cross-national variance in transfer form (e.g. Lizzeri and Persico, 2001; Persson and Tabellini, 1999). Ignoring domestic interests may be relatively innocuous if politicians elected via different rules are equally responsive to voters' demands for various types of distributive transfers. If politicians elected via a particular set of rules are more responsive to voters' preferences over transfer form, overlooking voter demand may lead to inaccurate conclusions about the causal mechanism linking electoral rules to transfer form and inaccurate predictions of the effect of electoral rules. In short, taking institutions and interests together provides a more complete and accurate understanding of the provision of different types of transfers by electorally minded parties and politicians.

### **Existing explanations**

A large and sophisticated literature points to the importance of electoral institutions for transfer form (e.g. Lizzeri and Persico, 2001; Milesi-Ferreti, Rostagno and Perotti, 2001; Persson and Tabellini, 1999, 2000, 2003). In these studies, politicians (and parties) are generally assumed to be office-seeking. To maximize their chances of reelection, politicians work to target distributive transfers to those voters most critical to their reelection chances. The identity of these voters is determined by the country's electoral rules. For example, the voters most critical to a politician's reelection chances in a plurality-rule, single-member district system are those in the politician's geographically-defined electoral district. Under plurality electoral rules, politicians are assumed to need 50 percent plus one of the votes to win reelection. To secure this outcome, politicians' optimal strategy is to provide transfers targeted to only those voters in their

electoral districts (Persson and Tabellini, 1999, 2000, 2003). This is also true for parties competing in two-party plurality rule systems with single-member districts.

Majoritarian electoral rules tend to be closely associated with single-member electoral districts. This empirical regularity provides further incentives for electorally minded politicians (and parties) in majoritarian systems to provide narrow transfers. Single member districts tend to be smaller than multimember districts (Powell and Vanberg, 2000). The influence of narrow, particularistic groups is greater in smaller districts (Alt and Gilligan, 1994; Magee, Brock and Young, 1989; Mansfield and Busch, 1995; Rogowski, 1997). McGillivray (2004: 28) provides the following illustrative example: An industry with 100 employees represents 10 percent of the electorate in a district with 1,000 voters. The same industry represents only 0.1 percent of the electorate in a district of 100,000 voters. In the larger district, refusing to provide targeted benefits to the industry is unlikely to affect the politician's reelection chances because the industry is only 0.1 percent of the representative's electorate. As a result, the smaller electoral districts (both in terms of seats and size) typically found in majoritarian systems provide politicians with additional electoral incentives to target benefits to narrow segments of the electorate.

In proportional systems, politicians and parties are believed to have fewer electoral incentives to supply narrow transfers (Lizzeri and Persico, 2001; Persson and Tabellini, 2003; Rogowski, 1987, 1997). Parties competing under proportional electoral rules do not win elections district by district. As such, no single district is critical to the electoral success of a party (McGillivray, 2004). Instead, parties work to maximize their aggregate vote share because this determines the number of legislative seats the party will control. By targeting transfers to a broad segment of the electorate, parties are able to "buy" the electoral support of a wide range of voters

dispersed across electoral districts. This is precisely the type of electoral support that is most beneficial to parties competing in multi-member districts under proportional rule.

To illustrate this, consider the following example. If a country has an unemployment rate of 10 percent, a party could potentially secure 10 percent of the national vote share by promising increased unemployment benefits. However, such a transfer might buy 3 percent of the vote share in one district and 30 percent in another, depending on the pattern of unemployment. This cross-district disparity does not matter to parties competing in proportional (PR) systems. However, for parties in two-party, plurality systems it is wasteful to buy votes this way. They will massively overbuy in some districts obtaining much more than the necessary 50 percent plus one votes needed to win under plurality electoral rules.

In sum, existing research on the form of distributive transfers focuses primarily on the importance of electoral rules. The general expectation derived from much of this research is that majoritarian systems will have more narrow transfers than PR systems. Although empirical tests of this expectation are limited because of the dearth of cross-nationally comparable measures of transfer form, the evidence that does exist is mixed. For example, Persson and Tabellini (2003) find that PR systems spend relatively more on broad transfers, measured by government spending on social security and welfare spending as a percentage of GDP. In contrast, Rogowski and Kayser (2002), and Rogowski, Chang, and Kayser (2005) find evidence to suggest that PR systems provide relatively more *narrow* transfers. They find that proportional electoral systems are associated with higher levels of consumer prices. Higher consumer prices may reflect narrow transfers delivered to particular groups, such as individual industries (Bawn and Rosenbluth 2006, 262).

Simple two-country comparisons are also ambiguous. For example, the United Kingdom and Belgium both targeted approximately 50 percent of their manufacturing transfers to individual industries during the 1990s, according to the Commission of the European Communities' *Survey on State Aid* (2002), despite the fact that they have dissimilar electoral institutions. Furthermore, the amount spent on narrow transfers relative to broad has changed over time in the United Kingdom although the country's electoral rules have remained constant (Commission of the European Communities' *Survey on State Aid*, 2002). The pattern of distributive transfers across countries and over time suggests that electoral institutions alone cannot fully explain the observed variation in transfer form. Domestic interests must also be taken into consideration.

### **Argument**

Domestic interests and electoral institutions shape the form of distributive transfers. Politicians interested in maximizing their chances of (re)election work to provide the type of transfer with the greatest electoral benefits. The electoral benefits of different types of transfers are jointly determined by the country's electoral rules and voters' preferences over transfer form. Voters prefer the type of transfer that maximizes their income. The type of transfer that maximizes voters' income depends critically on their mobility. Voters that find it prohibitively costly to move to a new group prefer transfers that target benefits only to their current group. The optimal transfer for 'immobile' voters would provide benefits to their group up to the point where marginal benefit equals the group's share of marginal cost and no benefits at all to any other group (Bawn and Rosenbluth, 2006: 253). Voters able to move freely between groups are relatively less interested in narrowly targeted transfers. In short, voters' preferences over

transfer form depend critically on their mobility and more precisely the mobility of their income earning assets.

Mobility, particularly with respect to factors of production such as land, labor, and capital, plays a critical role in theories of trade politics (e.g. Hiscox, 2002; Jones, 1971; O'Rourke and Sinnott, 2001; Rogowski, 1989; Stolper and Samuelson, 1941). Indeed, factor mobility is regarded as crucial for understanding the political-economic origins of a wide range of trade and industrial policies, since the economic interests of asset owners are shaped by their ability to shift assets between uses (Grossman and Levinsohn, 1989). Factor mobility reflects the costs of moving assets, such as land, labor or capital, between uses in the domestic economy. These costs are often referred to as adjustment costs. I focus here on the adjustment costs facing workers because in most countries, the median voter earns the majority of their income from labor rather than land or capital assets (Kono, 2007; Mayer, 1984).<sup>i</sup> The costs of adjustment facing workers include the search costs involved in finding a new job, the costs of re-training, the potential obsolescence of their skills, and the loss of rents specific to their current job.

Workers' preferences over transfer form vary systematically with the adjustment costs they face (Alt et al., 1996; Verdier, 1995; Zahariadis, 2001). Workers facing high adjustment costs prefer narrowly targeted transfers. The current and future incomes of workers stuck in their current industry because of prohibitively high adjustment costs are tied directly to the profits of the industry (or firm) in which they currently work. If the fortunes of that industry decline, workers unable to leave because of high adjustment costs receive lower rates of return. Given this, workers facing high adjustment costs are particularly concerned with protecting the returns in the industry in which they are currently employed.

Although both broad and narrow transfers could, in theory, serve to insulate industry returns from market pressures, narrow transfers are preferred to broad transfers because they maximize the incomes of immobile (specific) workers. The rents generated by narrow transfers are shared among fewer people than those from broad transfers. As such, the per-person benefits of narrow transfers are greater than the per-person benefits of broad transfers (Alt and Gilligan, 1994: 182). Furthermore, these benefits tend not to be arbitrated away by new entrants because of the high barriers to entry that exist in industries characterized by specific workers (Frieden, 1991). Workers employed in other industries need to invest resources to obtain the skills required to enter the privileged industry. If the rents are high enough, workers may be willing to make such an investment. However, acquiring such skills takes time. In the short term, the skills required for employment in industries characterized by specific labor prevents workers from rushing into the industry to take advantage of industry-specific rents.

Narrowly targeted transfers are less beneficial to mobile workers. Narrow transfers, such as industry-specific subsidies and/or trade protections, benefit only those workers currently employed in the privileged industry. If workers move out of that industry to take a new job, they lose the benefits of the narrow transfer, which instead becomes a pure tax. Given this, the expected benefits of narrow transfers are discounted by voters that are able to move out of a given industry with relative ease.<sup>ii</sup> Mobile workers prefer broad programs that allocate benefits to large segments of the labor market without reference to industry or occupation. Such programs allow workers to continue to enjoy the benefits even after moving to a new industry.

The preferences of individual workers' over transfer form vary with the adjustment costs they face. Does this individual-level variation produce systematic variation across countries? There are several reasons to expect so. First, workers in a given country face a set of common

adjustment costs. These common costs stem from country-specific characteristics, such as the level of industrialization and the regulatory barriers to occupational and geographic relocation imposed by federal and local governments (Edin and Zetterberg, 1992; Fung and Staiger, 1996; Hiscox and Burgoon, 2000; Krueger and Summers, 1987; Parsons, 1972). For example, early stages of industrialization often bring major innovations in transportation that lower the cost of labor movement and diminish the importance of geography to the economy (Hiscox, 2002). This is evident even in small countries such as Belgium where the extension of the rail network in the late 1800s dramatically increased labor movement between regions and sectors (Huberman, 2004). Technological innovations in methods of production also have important implications for country-specific adjustment costs. The introduction of labor-saving technology and production line technology increases the ease with which workers can shift between manufacturing industries (Sokoloff, 1986). These technological innovations also increase the demand for unskilled workers thereby lowering the costs of moving into the industrial sector from other sectors of the economy, like agriculture. Later stages of industrialization, often characterized by moves from assembly-line to continuous-process technology and dramatic technological advances in robotics, required more skilled workers thereby increasing the costs of adjustment (Hiscox, 2002).<sup>iii</sup>

Some portion of the total adjustment costs facing any given worker is common to all workers in that country, regardless of their individual characteristics. It is these common adjustment costs vary cross-nationally and can explain in part the incentives for politicians to provide one type of distributive transfer rather than another. Politicians are more willing to supply a particular type of transfer where there is greater voter demand for it.

Like Bailey (2001), Broz (2005), and others, I assume that voters need not organize for their economic interests to shape policy outcomes. This is because rival politicians have incentives to activate latent interests if elected representatives pay too little attention to them (Arnold, 1992; Bailey, 2001; Denzau and Munger, 1986). Rational legislators forestall such attacks by serving these voters preemptively. As a result, voters need not mobilize, organize or unionize for their economic interests to shape the form of distributive transfers.<sup>iv</sup> Politicians calculate the distributional effects of different transfer types on the voting constituencies within their districts. They then work to provide the type of transfers that reflect these interests, even in the absence of direct voter influence, organization or lobbying.

However, voters' economic interests are only one factor that determines the electoral benefits of providing narrowly targeted transfers. Electoral institutions also matter. The primary causal mechanism linking electoral rules and transfer form in previous research is electoral competition, as discussed above. There is, however, another causal mechanism through which electoral institutions may influence transfer form that has gone largely unnoticed due to the lack of attention to voters' interests, namely responsiveness. Politicians elected via different rules may vary in their responsiveness to voters' preferences. For example, Powell and Vanberg (2000) argue that politicians in PR systems are more responsive to voters' preferences than voters in majoritarian systems. They demonstrate that a closer correspondence exists between the median voter's preferences and those of the median legislator in PR systems (Powell and Vanberg, 2000). One explanation for this may be that the position of the median voter is more closely represented by a party in multi-party PR systems, as demonstrated by Cox (1990). If politicians in PR systems are more responsive to voters' preferences, increased demand for

narrow transfers should result in relatively larger increases in the number of narrow transfers in PR systems, as compared to majoritarian systems.

In addition to being more responsive, politicians in PR systems may also be better able to provide narrow transfers in response to surges in voter demand for these types of transfers. One reason for this may be that PR systems tend to have more veto players than majoritarian systems (Cox and McCubbins, 2001). If each veto player is interested in passing a narrow transfer for a different constituency, the chances of success for any given demand may be quite high as each player promises support for others' narrow transfers in return for support for their own (Cox and McCubbins, 2001). The higher frequency of multi-party coalitions in PR systems may also increase the ability of politicians to respond to surges in demand for narrow transfers. Previous research demonstrates that multi-party coalitions behave differently than single-party coalitions, even when the same interests are represented (Bawn and Rosenbluth, 2006). While single-party governments are held accountable for all of their policy decisions (Cox, 1990), parties in a multi-party coalition governments are less accountable given the difficulty of assigning blame to any single party in a coalition government. Multi-party governments are likely able to provide many more narrow transfers than single-party governments because although the costs of providing many narrow transfers may be detrimental to the country as a whole, each party in a coalition government can shirk responsibility for these costs.<sup>v</sup>

Because politicians elected via proportional rules tend to be relatively more responsive to voters' preferences and may be better able to supply narrow transfers, I expect increased voter demand for narrow transfers to have a relatively larger effect on the number of narrow transfers in PR countries, holding all else constant. As voter demand for narrow transfers grows, the number of narrow transfers should increase in both PR and majoritarian countries. However, the

increase should be relatively larger in PR countries, all else equal. I test this expectation using two new measures of narrow transfers discussed in the following section.

### **Empirical measures**

Empirical research on transfer form has been limited due to the dearth of cross-nationally comparable measures. Generating comparable measures of transfer form is difficult given the myriad of distributive policies including subsidies, regulations, taxes, and trade policies. An ideal measure of narrow transfers would estimate the total amount of all such transfers provided by any type of policy. However, such a measure has proven virtually impossible to construct (Bawn and Rosenbluth, 2006; Duchene and Shepherd, 1987; McGillivray, 2004; Meny and Wright, 1986). In an attempt to overcome this limitation, Rogowski and Kayser (2002) use national price levels to estimate aggregate economic distortions caused by distributive policies. Similarly, McGillivray (2004) uses industry stock prices in an attempt to measure industry protection. One advantage of these measures is that they arguably capture the different types of targeted transfers. However, these measures also capture many other factors that have nothing to do with (re)distribution or transfer form, such as transportation costs and market size (McGillivray, 2004; Rodriguez and Rodrik, 2000).

Measuring only one kind of narrow transfer has proven no easier. For example, cross-national comparisons of industry subsidies are believed to be suspect even where the bases seem to relate to the same categories of expenditures (Duchene and Shepherd, 1987). Furthermore, government expenditures on subsidies generally do not convey the focused impact of selective measures, which is the concept of interest here.

Given these difficulties, it is no surprise then that existing measures of narrow transfers are rather rudimentary. Milesi-Ferretti et al. (2002), for example, estimate government spending

on narrowly targeted transfers using the sum of social security payments and other transfers to families, plus subsidies to firms. Persson and Tabellini (2003) operationalize targeted transfers as government spending on pensions and unemployment insurance payments. Both measures have serious drawbacks. The first conflates more narrowly targeted transfers with broader transfers. The second closely approximates the operational definition of broad (rather than narrow) transfers used here. The limitations of these and other existing measures illustrate the difficulty of estimating the frequency and generosity of narrowly targeted transfers in a cross-nationally comparable manner.<sup>vi</sup>

In an attempt to overcome these measurement limitations, I use two novel measures of narrow transfers made possible by international monitoring of domestic transfers. International agreements, like the General Agreement on Tariffs and Trade, the World Trade Organization, and the European Union limit the ways in which national governments can target distribution. For example, rules negotiated as part of the GATT/WTO restrict the provision of narrow transfers to select segments of a country's economy. As early as the Tokyo Round of 1979, the use of narrowly targeted subsidies by national governments was restricted by Articles VI, XVI and XXIII. Since then, international restrictions on narrow domestic transfers have been significantly strengthened, clarified, and expanded. For example, The WTO Agreement on Subsidies and Countervailing Measures (Articles 1 through 9) explicitly bans government subsidies targeted exclusively to individual industries or firms in the manufacturing sector.

Despite these restrictions, some governments choose to provide narrow transfers in violation of their international treaty obligations.<sup>vii</sup> The provision of illegal narrow transfers is monitored by international producers. Narrow transfers provided to a single industry in one country increase the competitiveness of that industry's products on the international market.

Producers facing this increased competition will sound a “fire alarm” in their respective country (McCubbins and Schwartz, 1984) lobbying their home government to take action at the international level. Such action can take one of two forms. First, extra duties (i.e. countervailing duties) can be imposed against illegally subsidized products. Second, formal complaints can be filed with the GATT/WTO Dispute Settlement Body. Complaints may seek both the withdrawal of the illegal narrow transfer and compensation for its adverse effects.

Countervailing duties (CVDs) and complaints filed over narrow transfers are used here to estimate the relative frequency of narrowly targeted transfers in defendant countries.<sup>viii</sup> Arguably, countries facing more CVDs and complaints have more narrow transfers. Of course, there are many factors which influence the circumstances under which countries choose to impose CVDs or file complaints (Allee, 2005; Reinhardt, 2000). Given this, it is unlikely that every instance of narrow transfers is captured by these measures. However, there is no reason to believe that this cuts in favor of the argument made here. In fact, the non-random noise contained in these measures of narrow transfers likely makes it *more* difficult to find support for my argument.

Although the vast majority of all complaints filed with the GATT/WTO have at issue a narrowly targeted transfer (80 percent during the period from 1980-1994; 66 percent during 1995-2003), I systematically code and exclude complaints filed over other issues to increase the validity of this measure. Details on the coding criteria and exclusion decisions are reported in Appendix A.

Measuring voters’ preferences over transfer form is equally difficult. Voters facing high adjustment costs prefer narrow transfers, as argued above. To estimate the common adjustment costs facing workers in a given country, I measure the dispersion in wages across industries by

calculating the coefficient of variation for wage rates across manufacturing industries.<sup>ix</sup> Data are from Freeman and Oostendorp's Occupational Wages around the World (OWW) Database. These data benefit from an improved version of Freeman and Oostendorp's (2002) standardization procedure, which includes country-specific data correction factors.<sup>x</sup>

The dispersion in wages across industries (inter-industry wage differentials) is a commonly used and widely accepted measure of labor specificity (e.g. Dickens and Katz, 1987; Edin and Zetterberg, 1992; Gibbons and Katz, 1992; Hiscox, 2002; Katz and Summers, 1989; Krueger and Summers, 1987). This measure is favored because it closely approximates the theoretical concept of interest (the elasticity of substitution), which is not itself directly observable (Hiscox, 2002). The assumption is that when adjustment costs are low, wage differentials should be arbitrated away by the movement of workers between industries. Workers have incentives to move between industries in order to maximize their income. They do so only when the costs of adjustment are not prohibitively high. The movement of workers between industries (or even just the potential for it) should equalize returns to similar types of workers across industries.<sup>xi</sup> High inter-industry wage differentials are therefore taken as evidence of high adjustment costs.

Although inter-industry wage differentials are widely used to estimate labor specificity, there are reasons to exercise caution when using this measure. Most fundamentally, some part of inter-industry wage differentials may reflect heterogeneity in labor skill levels rather than actual adjustment costs. To minimize this possibility, I calculate wage differentials using only those industries employing workers with similar skill levels. Specifically, I calculate the coefficient of variation for wage rates across the 15 manufacturing industries characterized by Wood (1994) as being average or low skill industries. Doing so maximizes my sample size and minimizes sample

selection bias. It also reduces the heterogeneity of workers' skills thereby minimizing the effect of skill variation on inter-industry wage differentials. Eliminating high-skill industries may have the unintended consequence of excluding those workers facing the highest adjustment costs (if skills are positively correlated with adjustment costs). Excluding high-skill industries likely makes it more difficult to find evidence in support of my argument because those workers with the greatest interest in narrow transfers are missing from the sample.<sup>xii</sup>

### **Empirical model**

Two sets of models are estimated using different dependent variables. The first, *Complaints*, measures the total number of complaints filed with the GATT/WTO against a country alleging the provision of a narrow transfer in a given year. The second, *CVDs*, measures the total number of countervailing duties imposed against a given country in a given year. Given the discrete non-negative properties of both variables, it is appropriate to use an event count procedure to model the process. Here, I use the negative binominal model because both count variables are overdispersed.<sup>xiii</sup> The negative binomial model allows for overdispersion and includes parameters for unobserved variance in the number of disputes across countries (King, 1989; Long, 1997).

One might argue that the zero inflated negative binomial model is more appropriate for this analysis given the excessive number of zeroes in both count variables.<sup>xiv</sup> However, the large number of zeros may be the result of unobserved heterogeneity (Cameron and Trivedi, 1998; Long, 1997). Unobserved heterogeneity can cause both overdispersion and an increase in the proportion of zeros. The negative binominal model can account for the overdispersion and the excess zeros in the raw data. The negative binominal model responds to the under prediction of zeros in the Poisson regression model by increasing the conditional variance without changing

the conditional mean (Long, 1997). In contrast, zero modified count models change the mean structure to explicitly model the production of zero counts. This is done by assuming that zeros can be generated by a different process than positive counts. However, the theory advanced here does not suggest that the zeros are generated by a different process. Given this, it is difficult to justify theoretically the use of the zero inflated negative binomial model. I do, however, test to see if estimating a zero-inflated negative binominal model would produce dramatically different results.<sup>xv</sup> No significant bias appears to be introduced by estimating the more theoretically sound negative binominal model rather than the zero-inflated model.

The base sample is an unbalanced panel with yearly observations from 1980 to 2003. These data are used in a pooled time-series cross-section analysis with country-years as observations. Countries are included only during those years in which they are GATT/WTO members and only high-functioning democracies are included in the sample.<sup>xvi</sup> This allows for correct estimates of the effect of electoral rules and minimizes the cross-national variance in the costs of non-compliance with GATT/WTO restrictions on narrowly targeted transfers (Mansfield, Milner and Rosendorff, 2002). All reported models are estimated using robust standard errors clustered by country. These standard errors adjust for the fact that observations for each country are unlikely to be independent. The failure to account for clustering may understate the standard errors on the estimated coefficients for the country-level variables (Moulton, 1990). All models include a lagged dependent variable to take account of serial correlation.<sup>xvii</sup>

The base model includes several important control variables.<sup>xviii</sup> Previous research suggests that some complaints are filed in retaliation for previous complaints (Busch and Reinhardt, 2002). To account for this, a dichotomous variable labeled *Plaintiff* indicates those

country-years in which a complaint or CVD was filed by the country. The WTO regime differs from the GATT regime in several important ways. Therefore, an indicator variable, *WTO* (coded one for years during the WTO regime and zero otherwise) is included in all estimated models.

Countries with majoritarian electoral rules tend to have relatively larger economies. It may be possible to find a spurious positive correlation between majoritarian electoral rules and illegal narrow transfers if large countries are less concerned with the international costs of non-compliance. In order to correctly estimate the effect of majoritarian electoral rules on targeted transfers and minimize the cross-national variance in the costs of non-compliance, the log of *GDP* is included to control for a country's size.

Several additional economic variables are also included.<sup>xix</sup> *Exports*, calculated as the amount of goods and services exported as a percent of GDP (logged), is included because international scrutiny of a country's domestic transfers increases as a country's exports increase. *GDP per capita* is included because developed countries have historically used the GATT/WTO dispute settlement procedures more often than less-developed countries. Also, the costs of non-compliance may vary systematically with economic development making it important to control for development.

The yearly rate of economic growth (*Growth*) is included because slower economic growth may spur demands for narrow transfers in an attempt to insulate the rates of return in a particular industry from market pressures. Economic growth may also capture indirectly the effect of various economic shocks. To test for this, I include separately two different measures of external shocks to traded sectors of the economy: import growth and terms of trade. One might expect greater demand for narrow transfers in countries facing increased import competition or deteriorating terms of trade.<sup>xx</sup> Additionally, violating international restrictions during times of

adverse economic conditions may not entail the same reputation costs as doing so under normal economic conditions (Drazen, 1997).

Although these control variables are not unrelated, standard tests show acceptable levels of multicollinearity.<sup>xxi</sup> Their inclusion in a single model does not introduce undue bias. The results are reported in Table 1 and described below.

[Table 1 about here]

### Results

Adjustment costs, measured by inter-industry wage differentials, are positively associated with narrow transfers, as expected. Increased adjustment costs increase the expected number of narrow transfers in both majoritarian and PR systems. However, the increase is relatively larger in PR systems as demonstrated in Table 2, which reports the percentage increase in the expected number of narrow transfers.<sup>xxii</sup> As adjustment costs increase from the 10<sup>th</sup> percentile to the 25<sup>th</sup> percentile, the expected number of *Complaints* increases by 17 percent in majoritarian countries in a given year and 100 percent in PR countries. Although politicians in both systems are responsive to increased demand for narrow transfers (spurred by higher adjustment costs), politicians in PR systems are relatively more responsive. The difference in responsiveness across the two systems is even greater at higher levels of labor specificity. As adjustment costs increase from the 75<sup>th</sup> to the 90<sup>th</sup> percentile, the expected number of *Complaints* increases by 60 percent in majoritarian systems in a given year; the increase is greater than 900 percent in PR systems. Although politicians elected via majoritarian rules are not deaf to increased voter demand for narrow transfers, politicians in PR systems appear to be far more responsive, all else equal.

[Table 2 about here]

Given this, it may be possible that under certain circumstances PR systems will provide more narrow transfers than majoritarian systems. When voter demand for narrow transfers is very high, for example, one might expect to see more narrow transfers in PR countries. I find some evidence of this in Table 3, which reports the expected number of narrow transfers in PR and majoritarian countries across various levels of labor specificity.<sup>xxiii</sup> When adjustment costs are quite high (90<sup>th</sup> percentile), there are more narrow transfers in PR countries than majoritarian countries, all else equal.<sup>xxiv</sup> This is arguably because politicians in PR systems are more responsive to surges in voter demand for narrow transfers and better able to supply narrow transfers than politicians in majoritarian systems.

[Table 3 about here]

In general, however, majoritarian systems tend to be more prone to narrow transfers than PR systems. Moving from a PR system to a majoritarian system increases the expected number of narrow transfers (*Complaints*) by 288 percent in a given year, holding all else constant.<sup>xxv</sup> When adjustment costs fall below the 90<sup>th</sup> percentile, the expected number of narrow transfers is greater in majoritarian systems. This finding is consistent with arguments by Persson and Tabellini (1999, 2000, 2003), Lizzeri and Persico (2001) and others and points to the potential independent effect of electoral rules on transfer form. The incentives to provide narrow transfers appear to exist in majoritarian countries even when there is little voter demand for such transfers. For example, when adjustment costs fall in the 10<sup>th</sup> percentile, majoritarian systems continue to provide more narrow transfers than PR systems. This is arguably because the voters critical to a politician's (and a party's) electoral success in majoritarian systems are concentrated in select, geographically-defined electoral districts. Electorally minded politicians competing for office in

these systems have incentives to provide narrow transfers to these voters in the hope that they will reward them with their electoral support.

Although electoral rules play an important role in shaping the form of distributive transfers, they are only one determinant. Voters' demands also matter. Greater voter demand for narrowly targeted transfers increases the number of narrow transfers in any given country. However, the increase is relatively larger in PR countries. Although majoritarian systems are generally more prone to narrow transfers, PR systems are more responsive to surges in demand for narrow transfers. This finding is remarkably robust; introducing other possible variables of interest such as the relative strength of industry unions or external shocks does not change the key findings.<sup>xxvi</sup> Furthermore, I find similar results using an alternative measure of voter demand for narrow transfers, namely the rate of labor movement.<sup>xxvii</sup> These results are also strikingly similar across the two measures of narrow transfers, although only statistically significant at conventional levels when narrow transfers are measured using *Complaints*. The similarities between the models estimated using *Complaints* and *CVDs* are rather surprising given the large substantive differences between the processes and politics surrounding countervailing duties and GATT/WTO complaints. Future research using new measures of narrowly targeted transfers is needed to confirm the generalizability of these results. Given the difficulty of measuring narrowly targeted transfers in a cross-nationally comparable manner, these findings represent an important first step to understanding the interactive effect of electoral institutions and domestic interests on the form of distributive transfers.

### Conclusion

Virtually every government provides distributive transfers for electoral purposes. However, the level and form of such transfers vary dramatically across countries. In some

countries, distributive transfers tend to target benefits to broadly defined groups of voters. In others, the benefits of distributive transfers often go exclusively to narrow select groups. What explains the cross-national variation in transfer form? The answer proposed here points to the importance of domestic politics. Together, electoral institutions and domestic economic interests shape the form of distributive transfers and explain, in part, the variation in transfer form across countries.

Politicians seeking to maximize their (re)election chances work to provide the type of transfer with the greatest electoral benefits. The electoral benefits of different types of transfers are determined in part by the country's electoral rules. Narrow transfers provide relatively greater benefits to politicians in majoritarian systems because of the nature of electoral competition in these systems. However, electorally minded politicians in both systems respond to voters' preferences over transfer form. Voters' preferences over the form of distributive transfers are determined by the costs of moving their primary income earning asset (most often labor) between uses in the domestic economy. As the costs of adjustment increase, voter demand for narrow transfers grows. As demand grows, the number of narrow transfers increases in both PR and majoritarian systems. However, the rate of increase is relatively greater in PR systems suggesting that politicians elected via proportional rules are relatively more responsive to voter demand.

This finding suggests a possible resolution to the debate over which electoral system is most prone to narrow transfers and may help to explain previous mixed results. Although Persson and Tabellini (2003) find that PR systems spend relatively more on broad transfers, Rogowski and Kayser (2002), and Rogowski, Chang, and Kayser (2003) find evidence to suggest that PR systems provide relatively more *narrow* transfers. The argument made here suggests that

both outcomes are possible depending on voters' preferences over transfer form. In general, majoritarian systems tend to provide more narrow transfers than PR systems. However, PR systems are more responsive to surges in voter demand for narrow transfers. When voter demand for narrow transfers is high, PR systems may provide more narrow transfers than majoritarian systems because they are relatively more responsive to voter demand and better able to supply narrow transfers.

In Rogowski's studies, the countries in question are all economically developed. In fact, Rogowski's analyses include only OECD countries while Persson and Tabellini examine as many as 80 countries with various levels of economic development. The difference in samples has important implications for voter's preferences over transfer form. In developed economies, the adjustment costs facing workers tend to be quite high (Hiscox, 2002). As a result, voter demand for narrow transfers is likely high in Rogowski's sample of countries. When voter demand for narrow transfers is high, we might reasonably expect to see more narrow transfers in PR countries because of the closer correspondence between the interests of the voters and the legislators in PR systems and because politicians in PR systems may be better able to supply narrow transfers in response to voter demand. In short, Rogowski et al.'s findings are fully consistent with the argument made here – an argument which may help to resolve the debate over which electoral system is most prone to narrow transfers and further our understanding of the politics of (re)distribution.

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**Table 1: Negative binominal model of narrow transfers**

	<b>Complaints</b>			<b>CVDs</b>		
	1	2	3	1.1	2.1	3.1
<b>Domestic politics</b>						
<i>L.Majoritarian</i>	1.464 (0.815)*	1.486 (0.763)*	5.218 (1.093)***	0.779 (0.614)	0.811 (0.603)	1.661 (0.860)***
<i>L.Adjustment costs</i>		0.046 (0.011)***	0.195 (0.027)***		0.01 (0.011)	0.049 (0.039)
<i>L.Maj*L.Adjustment costs</i>			-0.157 (0.030)***			-0.046 (0.041)
<b>International politics</b>						
<i>L.Plaintiff</i>	0.061 (0.307)	-0.035 (0.244)	-0.063 (0.23)	0.437 (0.939)	0.348 (0.934)	0.296 (0.926)
<i>WTO regime</i>	0.582 (0.364)	0.688 (0.352)*	0.483 (0.35)	0.521 (0.377)	0.514 (0.391)	0.325 (0.326)
<b>Economics</b>						
<i>L.Exports (nlog)</i>	-0.116 (0.618)	0.032 (0.429)	0.364 (0.415)	0.206 (0.567)	0.262 (0.567)	0.422 (0.523)
<i>L.Growth (nlog)</i>	0.424 (0.201)**	0.398 (0.197)**	0.443 (0.178)**	-0.165 (0.187)	-0.166 (0.186)	-0.145 (0.17)
<i>L.GDP (nlog)</i>	0.445 (0.159)***	0.41 (0.148)***	0.595 (0.167)***	0.161 (0.193)	0.157 (0.188)	0.242 (0.226)
<i>L.GDP per capita (nlog)</i>	0.345 (0.229)	0.793 (0.263)***	0.726 (0.261)***	-0.199 (0.29)	-0.112 (0.29)	-0.158 (0.286)
<i>L.Dependent variable</i>	0.365 (0.186)**	0.32 (0.128)**	0.299 (0.118)**	0.75 (0.167)***	0.757 (0.166)***	0.77 (0.167)***
<i>Constant</i>	-19.08 (4.78)***	-23.85 (3.93)***	-32.78 (3.86)***	-5.75 (4.34)	-6.86 (4.38)	-9.83 (5.79)*
<i>Alpha</i>	0.09 (0.06)	0 (0)	0 (0)	1.25 (0.93)	1.2 (0.94)	1.14 (0.8)
<i>Observations</i>	317	317	317	318	318	318
<i># of Countries</i>	39	39	39	39	39	39
<i>McFadden's R-squared</i>	0.31	0.33	0.37	0.11	0.12	0.13

Notes: Estimated using a negative binominal model. Robust standard errors clustered by country are reported in parentheses. \*\*\* significant at the 0.01 level in a two-tailed test, \*\* significant at the 0.05 level in a two-tailed test, \* significant at the 0.1 level in a two-tailed test.

**Table 2: Percentage increase in the expected number of narrow transfers**

<i>Adjustment costs</i>	E[ <i>Complaints</i> ]		E[ <i>CVDs</i> ]	
	<i>Majoritarian</i>	<i>PR</i>	<i>Majoritarian</i>	<i>PR</i>
10 → 25 percentile	17**	100**	1	19
25 → 50 percentile	26**	175**	2.2	32
50 → 75 percentile	39**	418**	2.8	63
75 → 90 percentile	60**	905**	6.2	140

Notes: Estimated via CLARIFY using Models 3 and 3.1 from Table 1 (King, Tomz and Wittenberg, 2000; Tomz, Wittenberg and King, 2001). All control variables are held constant at their median values. The interaction term along with both constitutive terms (*L.Majoritarian* and *L.Adjustment costs*) were modified for each simulation. \*\* indicates that the increase is statistically significant at the 0.05 level

**Table 3: Expected number of narrow transfers**

<i>Adjustment costs</i>	E[ <i>Complaints</i> ]		E[ <i>CVDs</i> ]	
	<i>Majoritarian</i>	<i>PR</i>	<i>Majoritarian</i>	<i>PR</i>
10 percentile (7.4)	.075 (.042)	.002 (.001)	.137 (.073)	.036 (.021)
25 percentile (11.9)	.088 (.047)	.004 (.003)	.138 (.073)	.043 (.019)
50 percentile (18.2)	.111 (.057)	.011 (.007)	.141 (.074)	.057 (.022)
75 percentile (26.8)	.155 (.079)	.057 (.03)	.145 (.081)	.093 (.052)
90 percentile (38.6)	.248 (.137)	.573 (.323)	.154 (.096)	.224 (.273)

Notes: Estimated via CLARIFY using Models 3 and 3.1 from Table 1 (King, Tomz and Wittenberg 2000; Tomz, Wittenberg and King 2001). All control variables are held constant at their median values. The interaction term along with both constitutive terms (*L.Majoritarian* and *L.Adjustment costs*) were modified for each simulation. So, for example, *L.Majoritarian* was set equal to 1, *L.Adjustment costs* was set equal to 11.9, and the interaction term (*L.Maj\*L.Adjustment costs*) was set equal to 11.9 to estimate the expected number of narrow transfers in countries with majoritarian electoral rules and adjustment costs equal to 11.9 (25<sup>th</sup> percentile). Standard errors are reported in parentheses.

## Appendix A: Details of the construction of *Complaints* variable

*Complaints* measures the cumulative number of complaints filed against a GATT/WTO member country alleging the existence of an illegal narrow transfer in a given year. I systematically identify and exclude those complaints that were not filed in response to alleged illegal narrow transfers including: (1) complaints over broad transfers and/or policies that affect a wide range of goods, producers, or industries. So for example, the 1982 dispute between the United States and the European Community over the value added tax (VAT) threshold is excluded; (2) complaints related to the enforcement of intellectual property rights; (3) complaints filed against the European Community/European Union unless it is quite clear which EC/EU member country the complaint is primarily in response to; (4) complaints related to anti-dumping measures. Anti-dumping measures are imposed by governments in response to a foreign *firm's* policy rather than a foreign government's policy; (5) complaints that are explicitly political in nature. So, for example, the 1985 complaint filed by Nicaragua against the US in response to the trade embargo imposed by the Reagan Administration is excluded; (6) complaints related to non-manufacturing transfers in order to ensure consistency with the countervailing duties measure and the measure of inter-industry wage differentials. Complaints over countervailing duties are included only after carefully examining the GATT/WTO Panel Reports to correctly identify the country initially accused of having the illegal narrow transfer. Complaints filed by multiple countries over a single illegal narrow transfer are counted against the defendant country only once. A research assistant independently coded the universe of GATT/WTO complaints using the same criteria. The percentage agreement between the two coders was 99%.

### Notes

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<sup>i</sup> Focusing on the adjustment costs facing labor has several other advantages. First, labor is relatively immobile across national borders (Rodrik, 2000). This allows us to ignore the possibility that the preferences of internationally *immobile* workers differ from those of internationally mobile workers (Hiscox, 2004). Second, the adjustment costs facing labor have received significant scholarly attention and consensus exists as to how to estimate these costs.

<sup>ii</sup> It is important to note that this argument is different from, but wholly consistent with, Estevez-Abe, Iversen, and Soskice (2001) who argue that broad transfers induce workers to invest in specific skills. Once workers have these specific skills they then demand narrow transfers.

<sup>iii</sup> Institutional complementarities may reinforce cross-national variation in adjustment costs. In countries with high adjustment costs, institutions develop that make use of the industry-specific skills available in the labor market (Hall and Soskice, 2001).

<sup>iv</sup> Unions may help to increase the probability that the demands of certain groups of voters are translated into policy outcomes. With respect to transfer form, the role of unions would likely depend on the characteristics of unions' members. Industry unions are more likely to push for narrow transfers than nationally centralized unions representing workers from different industries. Unfortunately, due to data limitations it is not possible to test this expectation for the entire sample of countries under investigation here.

<sup>v</sup> Some argue that aggregate government spending is higher with multi-party coalition government because of this dynamic (e.g. Bawn and Rosenbluth, 2006; Persson, Roland and Tabellini, 2003). Given this, it may be the case that PR systems spend more than majoritarian systems on both narrow and broad transfers.

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<sup>vi</sup> Additional attempts to measure narrow transfers include civilian spending (Swank, 1988) and overall government expenditures as a percentage of GDP (Bawn and Rosenbluth, 2006). Neither measure closely approximates the concept of interest here.

<sup>vii</sup> They may do so because of the domestic electoral benefits.

<sup>viii</sup> Data are from the Allee (2005); Hudec (1993); Reinhardt (1996); and the WTO (2005).

<sup>ix</sup> I also employ a second measure of adjustment costs as a robustness test. This measure, estimates the rate of labor movement across manufacturing industries and into and out of the manufacturing sector (Seddon and Wacziarg, 2001). Using this alternative measure, I find strikingly similar results. Higher adjustment costs increase the number of narrow transfers in any given country; the increase is relatively larger in PR countries. These results are available from the author upon request.

<sup>x</sup> See Oostendorp (2005) for more details.

<sup>xi</sup> This is a simple application of the “law of one price.”

<sup>xii</sup> To test for this possibility, I re-estimate all models using a measure of inter-industry wage differentials calculated for all manufacturing industries, regardless of skill-type. I find similar results to those found using only average/low skill industries. These are available upon request.

<sup>xiii</sup> The mean of *CVD* is equal to 0.12; the standard deviation is 0.42. The mean value of *Complaints* is 0.17; the standard deviation is 0.55. Although the unconditional variance is greater than the unconditional mean for both count variables, the dispersion parameter,  $\alpha$ , is equal to zero in several of the estimated models. When  $\alpha$  is equal to zero, the negative binomial distribution is equivalent to a Poisson distribution.

<sup>xiv</sup> 88 percent of the sample country-years have no *Complaints* and 91 percent have no *CVDs*.

<sup>xv</sup> I use a country’s exports to predict zero counts.

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<sup>xvi</sup> Only countries with a Polity score greater than 5 are included in the sample. Data are from Marshall and Jaggers (2003).

<sup>xvii</sup> Although including the lagged dependent variable is arguably ‘most correct’, I re-estimated all models without the lagged dependent variable to see what, if any, temporal dynamics may have been obscured by the inclusion of the lagged dependent variable. The coefficients on the key variables of interest are virtually unchanged. This is likely because most of the variation in the key variables of interest (*Majoritarian* and *Adjustment Costs*) is cross-sectional. For example, no country in my sample changes their electoral rules during the period under study.

<sup>xviii</sup> All control variables are lagged one year to take into account the delay between the implementation of an illegal narrow transfer and the international reaction. I experimented with different lag structures and did not find any significant difference for the key variables of interest (*Majoritarian* and *Adjustment Costs*), arguably because these variables tend to be relatively time invariant making the specific lag structure less important.

<sup>xix</sup> Data on all economic variables come from the World Development Indicators (2005).

<sup>xx</sup> Neither measure is a robust predictor of narrow transfers. For this reason and space constraints, models that include *Import Growth* and *Terms of Trade* are not reported here but are available from the author upon request. Importantly, the estimated coefficient on the key variables of interest did not change significantly when these measures were included.

<sup>xxi</sup> The variance inflation factor (VIF) is less than 4 for all variables included in the models, as recommended by Huber et al. (1993).

<sup>xxii</sup> Estimated via CLARIFY using Models 3 and 3.1 from Table 1 (King, Tomz and Wittenberg, 2000; Tomz, Wittenberg and King, 2001). All control variables are held constant at their median

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values. The interaction term along with both constitutive terms (*L.Majoritarian* and *L.Adjustment costs*) were modified for each simulation.

<sup>xxiii</sup> In every case, the expected number of narrow transfers is quite small. This is because the modal number of transfers in any given country-year is zero. However, this does not mean that the substantive effect of voter preferences and electoral institutions is small. It simply demonstrates that the likelihood of seeing a Complaint or CVD in any given year in any given country is relatively low.

<sup>xxiv</sup> This difference is not statistically significant at conventional levels.

<sup>xxv</sup> This effect is estimated via Clarify using Model 2 from Table 1. All other variables are held constant at their median value. This effect is statistically significant at the 0.1 level in a two-tailed test.

<sup>xxvi</sup> Although these results are not reported here, they are available from the author upon request. The relative strength of industry unions is measured for developed countries using data from Golden, Lange, and Wallerstein (2006). Specifically, I calculate the ratio of unaffiliated union membership to confederal union membership. I measure external shocks using the percentage change in imports and the net barter terms of trade (WDI, 2007). These variables are not statistically significant at conventional levels.

<sup>xxvii</sup> Specifically, I use Wacziarg and Wallack (2004)'s EM2 measure that calculates the overall manufacturing employment loss or gain as the percentage change in total manufacturing employment for the past two years. Higher rates of labor movement are taken as indicators of lower adjustment costs. These results are available from the author upon request.