

Political Ideology and Endogenous Trade Policy: An Empirical Investigation*

Pushan Dutt
Department of Economics
University of Alberta
Edmonton, Canada T6G 2H4
pdutt@ualberta.ca

Devashish Mitra
Department of Economics
Florida International University
Miami, FL 33199
mitrad@fiu.edu

January 11, 2002

Abstract

In this paper, we empirically investigate how the ideology of the government in power affects trade policy. The prediction of a partisan, ideology-based model (within a two-sector, two-factor Heckscher-Ohlin framework) is that left-wing governments will adopt more protectionist trade policies in capital rich countries, but adopt more pro-trade policies in labor rich economies than right-wing ones. The data strongly support this prediction in a very robust fashion. There is some evidence, that this relationship may hold better in democracies than in dictatorships though the magnitude of the partisan effect seems stronger in dictatorships.

Keywords: Protection, Openness, Ideology

JEL Classification Codes: F10, F11, F13.

*We are grateful to Francisco Rodriguez for sharing his dataset with us and are indebted to Dimitrios Thomakos for useful discussions and suggestions. The standard disclaimer applies.

1 Introduction

Political ideology has been conceptualized in a number of ways giving rise to a multiplicity of meanings and interpretations. One view is that it stands for the self-defined notions of public interest and altruistic goals of politicians and political parties, which form the basis for most of economic policy making.¹ Another view is that the interests of constituents and ideological preferences of politicians are interrelated, with the former probably determining the latter.² However, in between these two extremes, is the position that pure altruistic, public-interest motivations as well as constituents' interests are both important in determining the ideological positions taken by political parties and politicians.^{3,4}

In this paper, we investigate how trade policy depends on the political ideology of the government (the party or the ruler in power). We look at how trade policy varies with the extent of the government's leftist (pro-labor, as opposed to pro-capital) orientation. Our analysis is independent of which of the above definitions of ideology one adopts. In other

¹ This view has been held by Kau and Rubin (1982) and Kalt (1981). They supported this view by their empirical studies that show that congressional voting behavior can be explained primarily by such "ideological" orientations rather than the economic interests of constituents.

² See Peltzman (1984). He also finds empirical support for this position using Senate voting records across a wide range of issues. Alt (1986) writes: "...class-party modelers from Kalecki to Hibbs say,...parties are policy-oriented, ideological agents of their supporters..."

³ Kalt and Zupan (1984), define ideology as a set of normative statements that describe the best or most preferred states of the world (in an altruistic and moralistic sense). Econometrically separating the effects of pure 'ideology' and the constituents' interests in Senate voting (on strip-mining controls), they find both to be fairly important empirically.

⁴ There is also an informational aspect to ideology - a candidate can succinctly state her position on a host of issues by presenting her views on all issues in simple one-dimensional terms (left vs. right, or liberal vs. conservative for instance). Glazer and Grofman (1989) show that in the presence of imperfect information (less than fully informed voters) a candidate who uses ideology merely as a label can often defeat a candidate who tries to specify her position on each of the issues that defy any single ideological label. While a fully informed electorate could presumably see a majority preferring the second candidate, costly information acquisition would see the former victorious with ideology providing a default position on every possible issue. According to Arthur Downs (1957) as well, ideology is a platform or position(s) adopted by parties seeking office and an efficient way for politicians to summarize their position on issues.

words, a left-wing party adopts a pro-labor stance either because its constituents are workers whose welfare they need to take care of to be guaranteed their support in terms of votes and political contributions, and/or they really place a high weight on egalitarianism. Similarly, a right wing party might be taking care of their constituents, the capitalists and/or may truly believe in providing incentives for capital accumulation to propel growth and generate jobs. In our analysis, we just assume that a government that is more left-oriented places a higher weight on the welfare of workers relative to that of capitalists, which can be consistent with any or all of the above reasons. This is consistent with the empirical findings of Hibbs (1977) who finds from his empirical investigation of 14 major industrialized countries that countries with left-wing governments had lower unemployment and higher inflation than others. He also reaches similar conclusions from the time series analysis of US and UK data.⁵

This is consistent with his “partisan theory” according to which politicians are “partisan” - left-wing and right-wing have different objective functions, the former attributing a higher cost to unemployment relative to inflation than the latter. Alesina (1987, 1988) presents his “rational partisan theory” using a two party model in which the left-wing party attaches a higher weight to unemployment relative to inflation (and a higher target inflation rate) in its loss function than the right-wing party.⁶ Hibbs and Vasilatos (1982) and Hibbs, Rivers and Vasilatos (1982), in different studies of survey data for the US and UK, show that the electorate’s preferences and concerns about macroeconomic issues are class-related, with blue-collar groups being relatively more concerned about unemployment and white-collar

⁵ Also, see Alt (1985) who analyzes data from 14 western industrial nations between 1960 and 1983 and finds that unemployment falls (rises) following a change from a right-wing (left-wing) to a left wing (right-wing) government. In arriving at this conclusion, Alt has to control for the constraint imposed by the world level of economic activity.

⁶ Alesina and Roubini (1992) find empirical support for the rational partisan model using OECD data.

groups being more concerned about inflation.⁷ Magee, Brock and Young (1989) have also argued that the low unemployment-high inflation combination under Democratic presidents benefits workers (debtors) while the opposite combination under Republican presidents benefits capitalists (creditors).⁸ Thus, it is fairly standard in the political economy literature to use left-wing (right-wing) and pro-labor (pro-capital) interchangeably when describing political parties.⁹

In this paper, we use the political support function approach of Hillman (1989) in a two sector, two factor (capital and labor) Heckscher-Ohlin framework.¹⁰ The government's objective function, also called the political-support function, is a weighted sum of the welfares of workers and capitalists.¹¹ The equilibrium tariff comes out of the maximization of this

⁷ For the US, they calculate the marginal rate of substitution between inflation and unemployment for blue-collar workers to be 1.5 and for white-collar workers to be 2.2. In other words, in order to maintain a given level of the political approval index for blue-collar workers, a 1 percentage point increase in the inflation rate would have to be accompanied by a decrease of about 1.5 percentage points in the unemployment rate while for white-collar workers, this number is 2.2 percentage points of unemployment. Thus, blue-collar workers do not care much about inflation, but care a lot more about unemployment. Therefore a small reduction in unemployment is enough to compensate them for any given increase in inflation. They find qualitatively similar results for the UK. In fact, for the UK, they also find that, even after controlling for variations in responses to economic outcomes of governments under different parties, manual working class voters are far more supportive of Labor governments than Conservative governments.

⁸ This is the standard textbook argument in macroeconomics that a sudden increase in the inflation rate benefits debtors at the expense of creditors, since the former will be paying back the latter a smaller amount of money in real terms.

⁹ See for instance Magee, Brock and Young (1989) or Persson and Tabellini (2000).

¹⁰ There are other approaches to modeling endogenous trade policy. See, for instance, Feenstra and Bhagwati (1982), Findlay and Wellisz (1982) and Rodrik (1986) for the tariff-formation function approach, Grossman and Helpman (1994) and Mitra (1999) for the political-contributions approach, Magee, Brock and Young (1989) for the campaign-contributions approach and Mayer (1984) for the median-voter approach. The classification terminology is borrowed from Rodrik (1995) to which the interested reader is referred for an excellent and comprehensive survey of the theoretical and empirical literature on the political economy of trade policy. For an elegant analysis of the different approaches within a unified framework, see Helpman (1997). For an in-depth survey exclusively of the empirical literature in the political economy of trade policy, see Gawande and Krishna (2001).

¹¹ Grossman and Helpman (1994), through their political-contributions approach, based on theory of menu auctions, provide micro-foundations to the political-support function approach. In that sense, we are using a reduced form approach. An increase in the weight on labor welfare in our framework can thus be, for instance, interpreted as a switch in power from a right-wing government receiving contributions from the capital lobby

objective function. In this model, the effect of an increase in the leftist orientation of the government is studied by increasing the weight on labor welfare relative to capital welfare in the government's maximand. This increase in the labor-welfare weight results in policies that are more pro-labor and thus, makes the domestic terms of trade more in favor of the sector that is labor-intensive. In a capital-abundant country, the labor-intensive good is the importable good and therefore, an increase in the leftist orientation of the government will result in a rise in import protection. In a labor-abundant country, however, the capital-intensive good is the importable and the labor-intensive good is the exportable. Therefore, an increase in leftist orientation in such a country that calls for a change in the domestic price ratio in favor of the labor-intensive exportable good will result in a decline in import protection. It is exactly this prediction about cross-country variation in trade policy that we are able to investigate empirically using cross-sectional data on government ideology (left, center or right), capital-abundance and diverse measures of trade restrictions and openness.

It is important to note here that in this kind of a Heckscher-Ohlin framework, a left-wing (right-wing) government may want to make the import tariff negative in a labor-abundant (capital-abundant) country if free-trade is considered the neutral situation (arising from equal weights on labor and capital). However, in the real world there are possibly other components of the tariff (arising from other factors or considerations) which are, in combination, always positive enough to make the overall tariff levels that we observe, to be positive in countries of all degrees of capital abundance or scarcity, and with governments of all ideologies. *Holding these other effects constant with respect to ideology, the overall import tariff can rise or fall with left-wing ideology to the extent that the positive or negative component that we focus on*

to a left-wing government that has the labor lobby contributing to it

becomes more positive or more negative.

In carrying out our empirical analysis, we define our ideology variable as increasing in the left orientation of the party in power, so that the variable takes the value one for a right-wing government, two for a centrist government and three for a government that is classified as left wing. In looking at the effects of ideology, we allow it to change direction and magnitude as the relative factor proportions change when we move across countries. We perform our empirical investigation using three separate measures of relative factor endowments (capital per worker), constructed using different methods and under different assumptions. Across all measures of trade restrictiveness and using different measures of the capital-labor ratio, we find strong evidence in favor of the above-mentioned prediction of the impact of ideology. An increase in the left-wing ideology, holding constant the economy's overall relative endowments, does in fact, raise trade barriers in capital-abundant economies and lowers them in capital-scarce economies.¹² Further, this result is extremely robust to the use of controls.

In this context, our result is consistent with the results of econometric studies (using micro-level survey data) on individual level trade policy preferences such as Balistreri (1997), Beaulieu (2001), and Scheve and Slaughter (1998). These authors find that for both Canada and the US in recent years, factor type has been the dominant determinant of support for or opposition to trade barriers. Individuals owning proportionally more of the scarce factors are in favor of trade barriers, while those owning proportionally more of the abundant factors do not like trade restrictions.

The main theoretical proposition presented in our paper is driven by the Stolper-Samuelson

¹² In addition to using ideology as a variable, an interaction term between ideology and the capital-labor ratio is used to endogenously determine from the data the threshold capital-labor ratio where the trade restrictiveness-ideology relationship changes sign or direction.

effect and therefore, our empirical results can be interpreted only in the context of this effect. Besides the above individual-level, revealed preference evidence for the Stolper-Samuelson theorem, there are papers that have found support for it using data on Political Action Committee (PAC) contributions and congressional voting patterns. These studies specifically find support for the two factor, capital-labor version of the Stolper-Samuelson effect and thus are specially relevant for our empirical investigation. Beaulieu (2000) finds some evidence of congressional voting patterns on trade policy in the US being affected by the factor-endowment composition of constituencies. One of the interesting empirical regularities unravelled by his study is a negative relationship between the likelihood that a candidate votes in favor of the CUSTA, GATT or NAFTA and the size of contributions from labor PACs. He also finds a positive effect of contributions from capital (corporate) PACs in the case of the CUSTA. In the case of the GATT and NAFTA, however, he finds no effect of capital contributions. Kahane (1996) finds that after controlling for state characteristics, the likelihood of voting against the NAFTA in both the House and the Senate was increasing in contributions by labor PACs. Steagall and Jennings (1996) find that the likelihood of a favorable House vote for the NAFTA was again decreasing in labor contributions, but also increasing in capital (corporate) contributions. However, contributions are endogenous to political and other leanings of the candidate. Baldwin and Magee (1998), after taking into account this endogeneity, find strong evidence that the likelihood of a favorable vote for NAFTA or GATT cast in the House was decreasing in labor contributions but increasing in business contributions. Beaulieu and Magee (2000) determine industry affiliation of these capital and labor PACs. They find that both the probability of a capital PAC contributing

money to a candidate and the size of its contribution to a candidate were higher if he/she was a supporter of NAFTA, while the reverse was true for a labor PAC. Industry affiliation of these PACs did not seem to matter in their contributions decisions in this NAFTA context.¹³

The contribution of our paper is two-fold. Firstly, our results uncover a robust empirical regularity in the relationship between trade protection and ideology. A left-wing government that is generally more interventionist and believes in state control of the economy may have a preference for free trade. Secondly, the paper adds to the empirical literature on cross-national variation in protection ¹⁴

In section 2, we present the theoretical framework and perform a comparative-static exercise to derive the implications of increasing the extent of left-wing ideology (the government's weight on labor welfare) for trade policy determination. Section 3 describes the specification of the econometric model and explains the various inferences that the model allows. Section 4 briefly discusses the data and the choice of regressors. In section 5, we discuss our empirical results and finally, in section 6, we make some concluding remarks.

¹³ In contrast to the studies mentioned above, earlier studies (using older data) by Irwin (1994, 1996) and Magee (1978) find that industry of employment was the major determinant of individual level trade policy preferences in the British elections of the early twentieth century and in the testimonies of trade unions, management and industry associations before the House Ways and Means Committee on the Trade Reform Act of 1973 in the US respectively. However, Rogowski (1987) shows how coalitions formed in the US, Britain and Germany in the nineteenth century are those predicted by the Heckscher-Ohlin model

¹⁴ See Rodrik (1995) for a discussion of the importance of (and the need for) empirical work on cross-country variations in protection. To our knowledge, there are only two cross-country empirical studies on protection. Magee, Brock and Young (1989, ch 16) find that average tariff rates tend to decrease as capital-labor ratios increase. Mansfield and Busch (1993) examine cross-national variation in average protection levels among 14 advanced industrial countries pooled over two years, 1983 and 1986. They find that non-tariff barriers are increasing in country size, unemployment rate and number of parliamentary constituencies and are higher for countries that use proportional representation as their electoral system. Also, there are three well known cross industry studies on protection in the US - Goldberg and Maggi (1999), Gawande and Bandyopadhyay (2000) and Trefler (1993) - all of which focus on the predictions of lobbying/political contributions models about cross-industry variation in protection.

2 Theoretical Framework

Let us consider a two-factor, two-sector, small-open, Heckscher-Ohlin economy. We choose units such that the world price ratio of the two goods is one. Let t be the ad valorem import tariff. Therefore, the tariff-inclusive domestic relative price of the importable good is $\tau = 1 + t$. Both goods require both capital and labor in their production carried out under constant returns to scale. On the demand side, individual preferences are taken to be identical and homothetic. An individual h 's indirect utility function can, therefore, be written as $\Omega^h = V(\tau)I^h$ where I^h is her income.

For simplicity, we assume that there are two kinds of factor owners, workers (who only own labor) and capitalists (who only own capital). Let us denote the set of all capitalists by \mathcal{K} and the set of all workers by \mathcal{L} . Furthermore, we let K stand for the aggregate capital stock of the economy, while L is the total labor endowment of the economy. The total incomes of all capitalists and of all workers are given respectively by

$$I^{\mathcal{K}}(\tau) = r(\tau)K + \phi^{\mathcal{K}}tM(\tau) \tag{1}$$

$$I^{\mathcal{L}}(\tau) = w(\tau)L + (1 - \phi^{\mathcal{K}})tM(\tau) \tag{2}$$

where $\phi^{\mathcal{K}}$ is the share of capitalists in the total tariff revenue (*equal to their share in national factor income by assumption*) and $M(\tau)$ denotes total imports. $w(\tau)$ and $r(\tau)$ are the wage rate earned by labor and rental on capital respectively, both being solely the functions of the domestic price of the importable.

The government chooses the level of the import tariff to maximize its objective function which is a weighted sum of the aggregate welfare of workers and capitalists. Thus, the

government's objective function is given by

$$\Omega^{\mathcal{G}}(\tau) = \alpha \sum_{h \in \mathcal{L}} \Omega^h(\tau) + (1 - \alpha) \sum_{h \in \mathcal{K}} \Omega^h(\tau) \quad (3)$$

Due to the homotheticity of preferences, the above objective function can be written as

$$\Omega^{\mathcal{G}}(\tau) = V(\tau) I^{\mathcal{G}} \quad (4)$$

where $I^{\mathcal{G}}$ is the weighted aggregate income given by

$$I^{\mathcal{G}} = \left[\alpha \sum_{h \in \mathcal{L}} I^h(\tau) + (1 - \alpha) \sum_{h \in \mathcal{K}} I^h(\tau) \right] = L [\alpha w(\tau) + (1 - \alpha) r(\tau) k] [1 + \delta(\tau; k)] \quad (5)$$

where k is the ratio of capital to labor endowment of a country and $\delta(\cdot)$ is the ratio of total tariff revenue to national factor income. Let $I_u^{\mathcal{G}}$ be the above weighted income for a country of unit size, i.e., it is the value of $I^{\mathcal{G}}$ at $L = 1$. The government maximizes $LV(\tau)I_u^{\mathcal{G}}$ which is the same as maximizing $V(\tau)I_u^{\mathcal{G}}$. In other words, the endogenous tariff will depend on α and k and for given values of these parameters, not on the country size L . The government's problem is equivalent to maximizing $v(\tau) + i(\tau; \alpha, k)$ where $v(\tau) = \ln V(\tau)$ and $i = \ln I_u^{\mathcal{G}}$. It is assumed that this objective function is strictly concave with respect to price (second-order condition for a unique interior solution). Expanding the expression for i , we have $i = \ln[\alpha w(\tau) + (1 - \alpha)r(\tau)k] + \ln[1 + \delta(\tau; k)]$ where The first order condition of our maximization problem gives us

$$v'(\tau) + \partial i / \partial \tau = 0 \quad (6)$$

Let $t^* = \tau^* - 1$ be the equilibrium tariff coming out of the government's maximization problem described above. We, now, want to see how this tariff varies with the government's weight, α , on labor welfare. Differentiating our first order condition to perform comparative

statics we obtain

$$\frac{\partial t^*}{\partial \alpha} = \frac{[r'(\tau)w(\tau) - r(\tau)w'(\tau)]k}{[\alpha w(\tau) + (1 - \alpha)r(\tau)k]^2[v''(\tau) + \partial^2 i / \partial \tau^2]} \quad (7)$$

Since an increase in the domestic price of the importable increases the reward to the scarce factor and reduces that for the abundant factor, we have $r'(\tau) < 0$ and $w'(\tau) > 0$ for a capital-abundant country, while $r'(\tau) > 0$ and $w'(\tau) < 0$ for a labor-abundant country. The denominator in (7) is always negative due to the restriction of concavity imposed on the objective function. Thus, the above derivative of t^* with respect to α is positive when the economy is capital abundant, so that an increase in the left orientation leads to an increase in the equilibrium tariff. For a labor abundant country, this derivative has a positive sign. In other words, an increase in left orientation always results in an increase in redistribution through policies that would benefit labor. In a capital abundant country, the importable is the labor intensive good and an increase in redistribution from capital to labor would take the form of policies that increasingly favor the importable sector. In a labor abundant economy, the importable sector is the capital intensive sector and hence more redistribution towards labor requires policies that are more biased against the importable sector. This leads us to the following proposition whose empirical validity we test in this paper.

Proposition: *Holding other things constant, an increase in the left orientation (pro-labor bias) of the government leads to more restrictive or less open trade policies in capital abundant countries, while it leads to less restrictive or more open trade policies in capital scarce economies.*

While the predictions are not as precise once we allow for more than two factors, we will attempt to argue that the predictions stated in the above proposition are not as specific to

the two factor framework as they appear. First, let us assume that there are three factors - physical capital (K), human capital or skills (H) and raw, unskilled labor (L). National income for a country with unit size ($L = 1$) will depend on the physical capital to labor ratio (k) and the human capital to labor ratio (h) and will equal $rk + w_H h + w$ where w_H denotes the return on human capital.¹⁵ Thus, in order to be rich (poor), countries have to be relatively abundant (scarce) in K and H combined or relatively scarce (abundant) in L .¹⁶ Pro-labor redistribution policies in rich (poor) countries, thus, lead to higher (lower) trade barriers.¹⁷

3 Econometric Methodology

As the comparative static result of the previous section shows, in countries with high (K/L) ratios, left-wing ideology and trade restrictiveness should be positively related, but when (K/L) is low there is an inverse relationship between these two variables. A priori, we do not know at what level of (K/L), the relationship changes sign. The following specification takes care of this problem by allowing the data to tell us the exact location of this turning

¹⁵ Note that an increase in L , holding constant h and k , means an increase in both the other factors in the same proportion.

¹⁶ Endowments of physical and human capital should be correlated (both at the country and individual levels), as it is the marginal rate of time preference that determines the steady state levels of both in the absence of credit market imperfections, while in the presence of such imperfections, the ownership of physical assets directly affects the ability to acquire skills.

¹⁷ If we go beyond three factors, our basic result qualitatively will still hold though it might be weakened a bit. The higher dimensional version of the Stolper-Samuelson theorem implies that if a factor is “scarce enough” (“abundant enough”), it will be helped (harmed) by trade barriers (See Leamer and Levinsohn, 1995). Consider a continuum of types of skills (high level or high paying to low level or low paying) and types of physical assets (high tech and high return like computers to low tech and low return like hammers, screw-drivers, etc). Rich countries will be abundant in the higher end factors, while poor countries in the lower end factors. A redistribution from the rich to the poor through trade policy will, thus, take the form of high (low) trade barriers in the very rich (poor) countries.

point:

$$TR_i = \alpha_0 + \alpha_1 Ideology_i + \alpha_2 Ideology_i \times (K/L)_i + \alpha_3 (K/L)_i + \mathbf{X}_i \boldsymbol{\beta} + \epsilon_i \quad (8)$$

where TR_i is the extent of trade restrictions in country i , $Ideology_i$ is the extent of the left-wing ideology of the government, $(K/L)_i$ the capital-labor ratio and \mathbf{X}_i is a row vector of control variables¹⁸,¹⁹. Taking the partial derivative of TR_i with respect to $Ideology_i$, we have

$$\frac{\partial TR_i}{\partial (Ideology)_i} = \alpha_1 + \alpha_2 (K/L)_i \quad (9)$$

The prediction of the comparative static exercise of the previous section is that $\alpha_1 < 0$ and $\alpha_2 > 0$ such that $\alpha_1 + \alpha_2 (K/L)_i \geq 0$ as $(K/L)_i \geq (K/L)^*$ where $(K/L)^* = -\alpha_1/\alpha_2$ is the turning point capital-labor ratio determined endogenously from the data, given our estimating equation. Another requirement for the prediction to hold is that $(K/L)^*$ should lie within the range of values of (K/L) in the dataset, i.e., $(K/L)^{MIN} < (K/L)^* < (K/L)^{MAX}$.

We start with the basic regression in which TR is regressed on (K/L) , $Ideology$ and $Ideology \times (K/L)$. The inclusion of (K/L) as a separate variable (in addition to $Ideology$ and $Ideology \times (K/L)$) allows $\frac{\partial TR_i}{\partial (K/L)_i}$ and the variable component of $\frac{\partial TR_i}{\partial (Ideology)_i}$ to differ in sign. Otherwise, they are restricted to having the same sign. We then add controls such as democracy and special dummies for East Asia, for Oil countries and for Sub-Saharan African

¹⁸ We could not find any non-monotonicities with respect to K/L by including an additional term $(K/L)^2$. We did not detect any non-linearities (at 15% and even higher levels of significance) in any of our variables (K/L , ideology, their cross product and other control variables) when we performed the Ramsey Reset test for all our regressions, both with and without controls.

¹⁹ In our estimation, we use the capital-labor ratios in natural logs (and not in levels). For the TARIFF regression, we have only one outlier with logs but 19 outliers with levels. For the IMPORT DUTY regression, the numbers are zero and 22 respectively, while for the $(X + M)/GDP$ regression the difference is even more stark, 3 outliers with logs and 43 with levels. The number of outliers are somewhat comparable in the case of the QUOTA, 24 with logs and 32 with levels. Moreover, in the case of logs, the results are robust to the deletion of outliers. Thus, we uspresnts results with K/L in logs throughout this paper.

countries to see whether our results are robust to their inclusion.²⁰

We also perform a few other robustness checks. First, Hausman tests²¹ suggested the endogeneity of the capital-labor ratio with respect to trade protection. We therefore, performed two-stage least squares regressions to control for such endogeneity. Second, we take advantage of the fact that two of our measures of protection have a time series dimension to create a panel data set and validate our results using a fixed-effects model with time-specific and comprehensive region-specific effects.

4 Data Sources and Some Basic Statistics

A detailed description of the data and their sources and the dataset itself are available at <http://www.ualberta.ca/economics/dm/dm.htm>. Here, we provide a very brief summary of the data used in this paper. Our dependent variable is trade protection and our independent variables of interest are a measure of ideological orientation (left, center and right wing), the capital-labor ratio, and indicators for democracy and political rights. For the regional effects, we will be using region-specific dummies. The cross-sectional analysis averages all variables for the decade of the 1980s while the panel analysis covers the time period 1980-1989.

To test for the robustness of our results, we use a variety of trade policy measures: total import duties collected as a percentage of total imports (IMPORT DUTY), an average tariff

²⁰ We have also tried using in addition to these controls a Latin America dummy. The results remain completely unaffected.

²¹ In a linear model, Hausman (1978) showed that an easy way of implementing the Hausman test for exogeneity is to first run reduced form regressions of each of the variables (in our case, K/L and $Ideology * K/L$) that are suspected to be endogenous on all the exogenous variables from our main regression and other exogenous variables which theory suggests might affect any of these endogenous variables. The second step involves computing the residuals from each of these auxiliary regressions and inserting them as additional right-hand side variables in our main estimating regression. If these residuals are jointly significant, our plain OLS estimation of the model produces inconsistent estimates warranting a 2SLS estimation.

rate calculated by weighing each import category by the fraction of world trade in that category (TARIFF)²², a coverage ratio for non-tariff barriers to trade (QUOTA) and an indirect measure of trade restrictions - the magnitude of trade flows relative to GDP, defined as $(X+M)/GDP$. For the panel analysis, only IMPORT DUTY and $(X+M)/GDP$ are used since these are the only measures for which data are available over time.

The data on political orientation are obtained from the Database of Political Institutions (DPI) (Beck et al, 2001). The authors have created a large cross-country database of political institutions that covers 177 countries over 21 years, 1971-1995. The database, among many other things, also lists the political orientation of the chief executive (that of the chief executive's party or when considered appropriate that of the chief executive himself/herself) and of the majority party in the legislature as 'Left', 'Center' or 'Right'. We use the ideological orientation of the chief executive for political systems classified as presidential in the database, that of the largest government party for systems classified as parliamentary, and the average of these two orientations for systems classified as assembly-elected president. We also verified the robustness of our results by using the ideological orientation of the chief executive for political systems that are classified as assembly-elected president instead of using an average measure. The results are robust to such a variation. We recoded the ideological orientation to reflect the extent to which the relevant government authority can be classified as 'Left' - left was coded as 3, center as 2 and right as 1. Therefore, our ideology variable in the regressions are best interpreted as the extent to which the policy and decision-making authority can be considered left wing with higher numbers signifying a

²² The variable is referred to as tariffs, although it includes all import charges, such as duties and customs fees.

more leftist orientation. Similar data have been used by Hibbs (1977) and Alt (1985) who examined the partisan effects of left vs. right-wing governments on unemployment and inflation rates. They find that left-wing governments are more labor-oriented, draw their support from the working-class and attach far greater importance to issues such as unemployment and equalization of the income distribution. In contrast, right-wing parties are business-oriented and attach low priority to labor related issues such as unemployment while assigning high priority to price stability. Alesina and Roubini (1992) use data on ideological orientation for more direct tests of rational partisan theory (Alesina, 1987) and its implications for political business cycles.

The data on capital-labor ratio are obtained from Easterly and Levine who use aggregate investment and depreciation data to construct capital per worker series for 138 countries. To check for and ensure the robustness of our results we also use the Easterly-Levine capital per worker data that uses disaggregated sectoral investment data along with information on disaggregated sector-level depreciation to arrive at more accurate measures. However, the country coverage is much smaller than the aggregate Easterly-Levine capital-labor series.²³

For a measure of democracy, we use the Freedom House (Gastil) measure of democracy that provides a subjective classification of countries on a scale of 1 to 7 on political rights, with higher ratings signifying less freedom. Table 1.1 provides summary statistics for these variables and table 1.2 presents the correlation across the various measures of trade restrictions.

²³ We also tried the Nehru-Dhareshwar data on capital in conjunction with the data on labor (defined as population between ages 15 and 64), to calculate an alternative measure of capital-labor ratio. The data on capital stock at 1987 domestic prices are converted into 1987 constant dollars using the 1987 exchange rate. However, this results in a number of outliers (both in terms of unrealistically high capital-labor ratios for countries such as Argentina and in terms of multivariate outlier tests) owing to appreciated exchange rates and these outliers are dropped from the analysis. The results here bear out our predictions as well, and are available from the authors upon request.

Finally, for the Hausman regressions, the additional variables used are the natural logarithm of the savings rate and the population growth rate obtained from the *World Development Indicators*. Note that the population growth rate and the savings rate are parameters in the Solow growth model in which the steady state per-capita capital stock is determined endogenously.

For some additional regressions, we also use data on government and opposition fractionalization, also obtained from the DPI. The data on these variables are only available for countries with parliaments or their equivalent.

5 Results

5.1 OLS Regressions (With and Without Controls)

Tables 2 and 3 present the regression results (with and without controls) for our main estimating equation (equation (5) in section 3 of this paper). Table 2 corresponds to the Easterly-Levine aggregate capital-labor ratio, and table 3 to the Easterly-Levine disaggregate capital-labor ratio. The sample size which ranges from 35 to 89, depends on the country coverage of the data on the different variables used.

In table 2, all our regressions models as a whole are significant at the 5% level. In addition as predicted, we obtain a negative sign for ideology and a positive sign for the interaction term for tariffs, quotas and import duty where these coefficients are individually as well as jointly significant. For $(X + M)/GDP$ (a measure of openness) as predicted the signs are reversed and significant. The table also reports the critical capita-labor ratio at which the relationship between trade protection and left-wing ideology switches from negative to positive. It ranges from 9.1 (for $(X + M)/GDP$ without controls) to 10.5 (for quota without controls), which

is very close to the median capital-labor ratio in the sample. Of course, the critical capital-labor ratio is itself an estimate and has a standard error. However, the 2 standard error confidence interval around this estimate includes the median mean capital-labor ratios in all cases. Thus the capital-labor ratio according to which countries are classified as labor and capital abundant emerges endogenously from our analysis. The R^2 ranges from 0.2 (in the case of quota without controls) to 0.37 (in the case of tariffs with controls). The results are the strongest and most robust for tariffs and quotas, which are the direct measures of trade restrictions.

In table 3 which uses the disaggregate capital-labor ratio, our estimates (ideology, K/L and the interaction term) are significant, except for the import duty regressions where ideology and the interaction term are insignificant²⁴ (even in which case they do have the correct signs and the model as a whole is significant at the 5% level and accounts for 45% of the cross-country variation without controls and 55% when we add controls). The R^2 from 0.28 for the $(X + M)/GDP$ without controls to 0.55 for the import duty regression with controls.

In table 4, using the tariff regression without controls presented in table 2, we categorize the countries in our sample into those that exhibit a negative relationship between protection and left-wing ideology (those with a low capital-labor ratio) and those that exhibit a positive relationship (those with a high capital-labor ratio). The critical (turning point) capital-labor ratio in this case is roughly 9.97 which is slightly lower than the capital-labor ratio for Portugal. Adding controls increases the number of countries that exhibit a positive relation between left-wing ideology and trade protection and diminishes the number of countries that

²⁴ Notice that the country coverage for the disaggregate capital-labor ratio is nearly half that of the aggregate capital-labor ratio

exhibit a negative relation.

A partial derivative of trade restrictions with respect to the capital-labor ratio in the regressions yields

$$\frac{\partial TR_i}{\partial (K/L)_i} = \alpha_3 + \alpha_2 (Ideology_i) \quad (10)$$

Our regression results show that $\alpha_3 < 0$ and $\alpha_2 > 0$ and that their estimates are statistically significant. Plugging in the values of $Ideology_i$ into the expression for the above partial derivative, we find a negative sign for all countries in our sample. These results are in line with the findings of Magee et al. (1989). Tariffs are a dependable and important source of revenues in developing countries (countries with a low capital labor ratio). Moreover, developing countries have used infant-industry reasoning to justify protecting domestic industries.

We now look at the coefficients of our control variables in tables 2 and 3. Our controls are an inverse index of democracy (the Gastil index of political rights)²⁵, and regional effects using regional dummies. The inclusion of democracy is motivated by several factors. First, if we believe the evidence that openness stimulates economic growth, dictatorships which are more concerned with the size of the pie rather than its distribution, are more likely to be open. Second, since unemployment is a major issue in most elections, democracies are also more likely to provide import protection to inefficient domestic firms and to public sector firms that may not survive foreign competition. Furthermore, Fernandez and Rodrik (1991) show that in the presence of individual-specific uncertainty regarding the costs of

²⁵ Note that this index increases with the extent of dictatorship and decreases with the degree of democracy

moving to the export sector, trade reforms that are beneficial to the majority ex-post may require a dictator to implement them in the first place. Third, Rodrik (1997) has argued that rising labor demand elasticities, brought about by more open trade, may hurt workers (the majority of the population) by shifting the wage or employment incidence of non-wage labor costs towards labor and away from employers, by triggering more volatile responses of wages and employment to labor demand shocks and by bargaining power over rent distribution in firms away from labor and towards capital. This may generate some demand for protection, to which democracies may be more responsive. However, as tables 2 and 3 show we fail to find any evidence that democracies are more protectionist. The relationship between democracy and the partisan model is addressed in more detail in later sections. Finally, in terms of regional effects all we find is that quota coverage is lower for East Asian countries (tables 2 and 3) and that quotas and import duties are higher for sub-Saharan African countries (table 3).

6 Robustness Checks

6.1 Two Stage Least Squares

In a dynamic context (for example in a multi-sector Solow model), the capital-labor ratio may be endogenous with respect to trade policy. Protection, by affecting the production structure, can affect accumulation and the steady state level of the capital stock. Because of the possible endogeneity of the capital-labor ratio and the interaction term, we performed a two-stage least square estimation where we instrument the suspected endogenous terms by the log of the population growth rate and the log of the savings rate.

As table 5 shows across all measures of protection, the prediction of the partisan model

is supported. The relevant terms are all significant and the critical capital-labor ratios are again very close to the mean and the median. These results are also robust to the inclusion of controls.

6.2 Panel Regressions

We also test our model using cross-sectional time series data available for two measures of protection - import duty and $(X + M)/GDP$. We use a fixed-effects model with with time and region specific effects.²⁶,²⁷ In general, time specific shocks seem more reasonable because historically the world as a whole has exhibited a pattern, where either all countries have tended to become more protectionist (e.g., the inter-war years), or less protectionist (the mid 1990s following the Uruguay Round). Further, there has been a tendency for countries within a region to organize themselves into free trade areas or customs unions - an effect that should be captured by our comprehensive region-specific effects. Finally, due to the endogeneity of capital-labor ratio with respect to tariffs, we use instrumental variables - the log of the savings rate and log of the population growth rate.

As table 6 shows our predictions are borne out here as well. The first two columns show the fixed-effects models with only the time effects without the region-specific effects and the next two columns add the region-specific effects. As we can see, the coefficients have the predicted signs and are strongly significant. Moreover, the critical capital-labor ratio is

²⁶ For our region-specific effects we use the following regional categories: East Asia, Rest of Asia, Oceania, Eastern Europe, Western Europe, North America, Latin America (excluding Mexico), Oil producing countries, Sub-Saharan Africa, and Rest of Africa.

²⁷ A fixed effects model with country-specific effects on the other hand, will not be able to identify the estimates for some of our variables that do not vary within groups - for instance, the regional dummies. Moreover, with 50-60 countries in each regression, such an approach uses up large degrees of freedom and results in high multicollinearity between the country-specific effects and the some of the right-hand side variables, making the interpretation of the coefficients difficult.

around 10 in each of the regressions and close to the median and average capital-labor ratios.

6.3 Dictatorship vs. Democracy

Next we investigate in this paper whether partisan concerns are more important in democracies or in dictatorships. Democratic governments to ensure their re-election may adopt policies that benefit their electoral base (groups that provide large blocks of votes and/or provide campaign contributions) - capitalists (business groups) for right wing parties and labor (trade unions) for left wing parties. Dictatorships on the other hand face few such incentives. On the other hand, dictatorships are less constrained in their redistributive attempts. Thus, we have an important empirical question at hand, namely whether the partisan model performs better for democracies than for dictatorships or vice-versa. Here we investigate two possible considerations: (a) that the partisan model fits the data better for democracies and (b) that the predicted relationship between trade policy and ideology is stronger (larger in magnitude) for democracies.

We investigate (a) by generating residuals from our main regressions and then regressing the absolute values and squares of these residuals on the democracy/dictatorship (political rights) variable. In most cases, we do find that these residuals are higher for dictatorships suggesting that our model fits better for democracies. We include only direct measures of trade policy and not the indirect measure - $(X + M)/GDP$ since a multitude of variables influence the latter which we have not take explicitly into account. As table 7.1 shows for almost all cases the residuals are significantly higher for more dictatorial countries so that these results at least provide some evidence that the partisan model prediction works better in democracies than in dictatorships. .

Next, we generated predicted values of protection using our coefficient estimates and found their correlation with the actual values separately for the dictatorship sample and the democracy sample (the rest). The first sample is for countries where the Gastil measure takes values 4 and below (the democracy sample) and the second sample includes countries where this measure exceeds 4 (the dictatorship sample). As table 7.2 indicates the fit is superior for the sample of countries that can be classified as democracies. The comparisons are very similar with controls.

Finally, we run regressions with additional interaction terms (*ideology*democracy* and *ideology*(K/L) * democracy*)²⁸ to investigate the hypothesis (b) whether the demand for pro-labor redistribution through trade policies is stronger in democracies or in dictatorships. Both the interaction terms are significant at the 5% level for tariffs, import duty and $(X + M)/GDP$ but not for the quota regressions. Here we find that in democracies the magnitude of the partisan effects are weaker. For the regression with controls, the cross-partial derivative is²⁹

$$\begin{aligned} \frac{\partial^2[tariff]}{\partial democracy \partial ideology} &= 0.04 - 0.004(K/L) \\ \frac{\partial^2[import\ duty]}{\partial democracy \partial ideology} &= 3.054 - 0.426(K/L) \\ \frac{\partial^2[(X + M)/GDP]}{\partial democracy \partial ideology} &= -9.03 + 0.713(K/L) \end{aligned}$$

so that *dictatorships* reinforce the negative (positive) relationship between ideology and trade protection in capital scarce (abundant) countries, predicted by the partisan model. Even in these regressions the critical capital-labor ratio (where the relationship between ideology and

²⁸ Here we calculated the democracy variable as $(8 - polrights)$ for ease of interpretation.

²⁹ The results are similar if we use regressions without controls.

trade protection switches from negative to positive) is close to the median capital-labor ratio.

Thus the partisan model fits the data better for democracies but the magnitude of the effects are *smaller* in democracies. Dictators who have consolidated their position may not face any electoral threats and may have fewer incentives to formulate trade policies according to their ideological affinities. However, if they do decide to favor their “core” constituent groups they are likely to face lesser constraints in implementing redistributive trade policies. Thus we may observe that the magnitude of partisan effect is larger in absolute terms even if the partisan model as a whole is a better fit for democracies.

6.4 Fractionalized vs. unified opposition

Next we examined if the partisan model works better where there is a single unified opposition (such as a two-party system as in the US). A fractionalized opposition is likely to pose fewer threats to the ruling party/executive, giving them lesser incentives to consolidate their electoral base by pursuing partisan objectives. The more fragmented are opposition parties, the more difficult it is for them to cooperate strategically and pose a threat to the ruling party. For instance, Cox and Niou (1994) showed that a highly fractionalized opposition in Japan contributed to the consolidation of power by the ruling party (the Liberal Democratic Party) in Japan and explains its long tenure in power. DPI includes a variable that captures the extent of fractionalization of the opposition. This variable measures the probability that two random draws from all opposition legislators will produce members belonging to distinct parties.³⁰

First, we divided our sample into those countries where opposition fractionalization is

³⁰ Note that this probability is calculated and reported in the database only for countries that have parliaments or their equivalent. Thus, our regressions in this subsection are restricted to such countries.

greater than 0.5 and those less than 0.5 and estimated separate models for each of these sub-samples. As table 8 indicates, the partisan model seems to work for both unified and fractionalized oppositions. Even the critical capital-labor ratios seem indistinguishable. Second, we calculated the correlation between the predicted and actual values of protection much the same as we did for democracy and dictatorship. Again, there is no indication that the model fit is superior for the sample where opposition fractionalization exceeds 0.5. Third, we interacted opposition fractionalization with *ideology* and *ideology* * (*K/L*). Only in the case of tariffs were these coefficients significant (shown in table 9). From here we can see that

$$\frac{\partial^2 tariff}{\partial ideology \partial opp} = 0.481 - 0.057 * (K/L)$$

so that a fractionalized opposition weakens the effect of ideology on trade policy in both capital and labor abundant countries. Finally, we generated and regressed the absolute value and the square of the residuals on opposition fractionalization. Only for the quota coverage ratio we find that the residuals are significantly higher in countries where the opposition parties are highly fractionalized. This suggests that at least for quotas, the partisan model better fits countries that have a unified opposition.

6.5 Coalition vs. single-party governments

We also investigated how the predictions of the partisan voter fares in the presence of a coalition government. A single party government has been shown to be more stable (Taylor and Herman, 1971) and can pursue its goals and objectives more efficiently. A coalition government on the other hand may be constrained in its pursuit of its ideological objectives. We use data on government fractionalization to investigate this issue. However, we do not

find any evidence that government fractionalization matters. The ideological model fits both single party and coalition governments, and additional interaction terms of government fractionalization are individually and jointly insignificant. The only result we discover is that for $(X + M)/GDP$, when we regress the absolute values of the residuals on government fractionalization, the latter has a positive and significant coefficient at the 10% level. We cannot read too much into this since $(X + M)/GDP$ is an indirect measure of trade policy and may depend on a host of extraneous variables.

7 Conclusion

In this paper, we empirically investigate how the ideology of the government in power affects trade policy. Government's ideology is a combination of the preferences of their constituent groups that vote for them and provide them with political contributions as well as their beliefs about what is good for the country's citizens. The prediction of such a partisan, ideology-based model (within a two-sector, two-factor Heckscher-Ohlin framework) is that left-wing governments will adopt more protectionist trade policies in capital rich countries, but adopt more pro-trade policies in labor rich economies. The data strongly support this prediction in a very robust fashion. There is some evidence, that this relationship may hold better in democracies than in dictatorships though the magnitude of the partisan effect seems stronger in dictatorships. We also find that while fractionalization within the government does not seem to matter much, the fractionalization of the opposition does matter. The data suggest that partisan considerations are more important in the presence of a unified opposition.

References

- Alesina, A., 1987, "Macroeconomic Policy in a Two Party System as a Repeated Game," *Quarterly Journal of Economics* 102, 651-678.
- Alesina, A. and Roubini, N., 1992, "Political Cycles in OECD Economies," *Review of Economic Studies* 59, 663-688.
- Alt, J., 1985, "Political Parties, World Demand and Unemployment: Domestic and International Sources of Economic Activity," *American Political Science Review* 79, 1016-1040.
- Alt, J., 1986, "Party Strategies, World Demand, and Unemployment: The Political Economy of Economic Activity in Western Industrial Nations," *American Economic Review (AEA Papers & Proceedings)* 76(2), 57-61.
- Baldwin, R. and C. Magee, 1998, "Is Trade Policy for Sale? Congressional Voting on Recent Trade Bills," NBER Working Paper # 6376.
- Balistreri, E., 1997, "The Performance of the Heckscher-Ohlin-Vanek Model in Predicting Endogenous Policy Forces at the Individual Level," *Canadian Journal of Economics* 30(1), 1-17.
- Beaulieu, E., 2000, "The Stolper-Samuelson Theorem Faces Congress," *Review of International Economics*, forthcoming.
- Beaulieu, E., 2001, "Factor or Industry Cleavages in Trade Policy? An Empirical Analysis of the Stolper-Samuelson Theorem," mimeo, Department of Economics, University of Calgary
- Beaulieu, E. and C. Magee, 2000, "Campaign Contributions and Trade Policy: Simple Tests of Stolper-Samuelson," mimeo, Department of Economics, University of Calgary and Department of Economics, Bard College.
- Beck, T; Clarke, G; Groff, A. and P. Keefer, 2001, "New Tools and New Tests in Comparative Political Economy: The Database of Political Institutions," forthcoming, *World Bank Economic Review*.
- Fernandez, R. and D. Rodrik, 1991, "Resistance to Reform: Status-Quo Bias in the Presence of Individual-Specific Uncertainty," *American Economic Review* 81(5), 1146-1155.
- Feenstra, R. and J. Bhagwati, 1982, "Tariff Seeking and the Efficient Tariff," in: J. Bhagwati, ed., *Import competition and response* (The University of Chicago Press).
- Findlay, R. and S. Wellisz, 1982, "Endogenous tariffs, the political economy of trade restrictions and welfare," in: J.N. Bhagwati, ed., *Import competition and response* (The University of Chicago Press), 223-234.

- Gawande, K. and P. Krishna, 2001, "The Political Economy of Trade Policy: Empirical Approaches," in J. Harrigan (ed.), *Handbook of International Economics*, forthcoming.
- Gawande, K. and U. Bandopadhyay, 2000, "Is Protection for Sale? A Test of the Grossman-Helpman Theory of Endogenous Protection," *Review of Economics & Statistics* 82(1), 139-152.
- Glazer, A and B. Grofman, 1989, "Why Representatives are Ideologists though Voters are not," *Public Choice* 61(1), 29-39.
- Goldberg, P. and G. Maggi, 1999, "Protection for Sale: An Empirical Investigation," *American Economic Review* 89(5), 1135-1155.
- Grossman, G. and E. Helpman, 1994, "Protection for Sale," *American Economic Review*, September 1994, 833-850.
- Harrigan, J., 1993, OECD Imports and Trade Barriers in 1983, *Journal of International Economics* 35(1), 91-111.
- Hausman, J., 1978, "Specification Tests in Econometrics," *Econometrica* 46, 1251-1271.
- Helpman, E., 1997, "Politics and Trade Policy," in D. Kreps and K. Wallis (eds.), *Advances in Economics and Econometrics: Theory and Applications*, Volume II, Cambridge University Press (Cambridge, UK).
- Hibbs, D., 1977, "Political Parties and Macroeconomic Policy," *The American Political Science Review* 7, 1467-1487.
- Hibbs, D. and N. Vasilatos, 1982, "Economic Outcomes and Political Support for British Governments among Occupational Classes: A Dynamic Analysis," *The American Political Science Review*, 76(2), 259-279.
- Hibbs, D.; Rivers, D. and N. Vasilatos, 1982, "The Dynamics of Political Support for American Presidents Among Occupational and Partisan Groups," *American Journal of Political Science*, 26(2), 312-332.
- Hillman, A., 1989, *The Political Economy of Protection* (Harwood Academic, London and New York), 1989.
- Irwin, D., 1994, "The Political Economy of Free Trade: Voting in British General Election of 1906," *Journal of Law and Economics* 37, 75-108.
- Irwin, D., 1996, "Industry or Class Cleavages over Trade Policy? Evidence from the British General Election of 1923," in: R. Feenstra, G. Grossman and D. Irwin, eds., *The Political Economy of Trade Policy: Papers in Honor of Jagdish Bhagwati* (MIT Press, Cambridge, MA), 53-75.
- Kahane, L., 1996, "Congressional Voting Patterns on NAFTA; An Empirical Analysis," *American Journal of Economics and Sociology* 55, 395-409.

- Kalt, J. and M. Zupan, 1984, "Capture and Ideology in the Economic Theory of Politics," *American Economic Review* 74(3), 279-300.
- Kau, J. and P. Rubin, 1979, "Self Interest, Ideology and Logrolling in Congressional Voting," *Journal of Law and Economics* 22(2), 365-384.
- Leamer, E., 1990, "The Structure and Effects of Tariff and Non-tariff Barriers" in 1983, in: R. Jones and A. Krueger, eds., *The Political Economy Economy of International Trade: Essays In Honor of Robert E. Baldwin* (Basil Blackwell, Cambridge, MA), 224-260.
- Leamer, E. and J. Levinsohn, 1995, "International Trade Theory: The Evidence," in: G. Grossman and K. Rogoff, eds., *Handbook of International Economics*, Vol. 3. Amsterdam: North-Holland, 1339-94.
- Magee, S., 1978, "Three Simple Tests of the Stolper-Samuelson Theorem," in: P. Oppenheimer, ed., *Issues in International Economics* (Oriel Press, Stockfield).
- Magee, S., Brock, W., and L. Young, 1989, *Black Hole Tariffs and Endogenous Policy Theory* (Cambridge University Press, Cambridge and New York).
- Mansfield, E. and M. Busch, 1995, "The Political Economy of Nontariff Barriers: A Cross-National Analysis," *International Organization* 49(4), 723-49.
- Mitra, D., 1999, "Endogenous Lobby Formation and Endogenous Protection: A Long Run Model of Trade Policy Determination," *American Economic Review* 89(5), 1116-1134.
- Peltzman, S., 1984, "Constituent Interest and Congressional Voting," *Journal of Law and Economics* 27(2), 181-210.
- Rodrik, D., 1986, "Tariffs, Subsidies, and Welfare with Endogenous Policy," *Journal of International Economics*, November 1986, 21(3/4), 285-299.
- Rodrik, D., 1995, "Political Economy of Trade Policy," in: G. Grossman and K. Rogoff, eds., *Handbook of International Economics*, Vol. 3. Amsterdam: North-Holland, 1457-1494.
- Rodrik, D., 1997, *Has Globalization Gone Too Far?*, (Institute for International Economics, Washington, D.C.).
- Rogowski, R., 1987, "Political Cleavages and Changing Exposure to Trade," *American Political Science Review* 81(4), 1121-1137.
- Scheve, K. and M. Slaughter, 1998, "What Determines Individual Trade Policy Preferences?," NBER Working Paper 6531.
- Steagall, J. and K. Jennings, 1996, "Unions, PAC Contributions and the NAFTA Vote," *Journal of Labor Research* 17, 515-521.

Trefler, D., 1993, "Trade Liberalization and the Theory of Endogenous Protection,"
Journal of Political Economy 101, 138-160.

Table 1.1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>tariff</i>	93	0.16	0.12	0	0.48
<i>quota coverage ratio</i>	92	0.20	0.24	0	0.87
<i>import duty (1980-89, avg.)</i>	91	12.01	8.29	0.01	35.68
<i>(X+M)/GDP</i>	156	33.55	37.42	1.65	298.01
<i>log of capital-labor ratio</i>	140	9.17	1.58	5.71	11.81
<i>ideology (1=Right, 2=Center, 3=Left)</i>	111	2.22	0.83	1	3
<i>govt. fractionalization</i>	118	0.18	0.27	0	1
<i>opposition fractionalization</i>	83	0.45	0.25	0	1
<i>dictatorship (Gastil)</i>	165	4.28	2.17	1	7
<i>log of savings rate</i>	84	2.76	0.79	-1.95	3.85
<i>log of population growth rate</i>	89	0.32	1.03	-3.47	1.52
Panel Variables (1980-1989)	Obs	Mean	Std. Dev.	Min	Max
<i>import duty</i>	670	9.46	7.62	0	39.77
<i>(X+M)/GDP</i>	730	35.70	38.52	4.03	570.87
<i>ideology</i>	820	2.11	0.94	1	3
<i>lnelkl</i>	820	9.48	1.52	5.63	11.52
<i>ideelkl</i>	820	19.51	8.74	7.23	34.2

Table 1.2: Correlation Matrix for measures of protection

	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>Tariff</i>	1			
<i>Quota</i>	0.3854	1		
<i>Import Duty</i>	0.7104	0.4113	1	
<i>(X+M)/GDP</i>	-0.1579	-0.082	-0.2151	1

Table 2: Easterly-Levine (aggregate)- Regression with and without controls

	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>ideology</i>	-0.409*** (0.115)	-0.797*** (0.249)	-11.575** (6.628)	58.625*** (24.322)	-0.366*** (0.132)	-0.935*** (0.287)	-11.267* (7.03)	47.154** (24.589)
<i>ideology*capital-labor ratio</i>	0.041*** (0.012)	0.075*** (0.026)	1.195** (0.711)	-6.222*** (2.576)	0.036*** (0.014)	0.087*** (0.03)	1.154* (0.751)	-4.872** (2.592)
<i>capital-labor ratio</i>	-0.14*** (0.032)	-0.222*** (0.069)	-5.52*** (1.78)	25.244*** (6.648)	-0.14*** (0.034)	-0.255*** (0.074)	-5.341*** (1.95)	23.077*** (6.939)
<i>political rights (Gastil)</i>					0.002 (0.008)	-0.002 (0.019)	-0.328 (0.555)	-3.79*** (1.624)
<i>sub-saharan africa</i>					-0.062 (0.054)	0.022 (0.12)	1.923 (2.645)	21.521*** (9.087)
<i>east asia</i>					-0.067 (0.057)	-0.238** (0.124)	1.574 (3.419)	5.684 (11.076)
<i>oil</i>					0.079 (0.055)	-0.09 (0.122)	2.789 (3.79)	5.93 (12.757)
<i>constant</i>	1.537*** (0.312)	2.517*** (0.673)	63.359*** (17.11)	-206.888*** (64.677)	1.557*** (0.343)	2.896*** (0.738)	62.282*** (19.406)	-180.746*** (69.284)
<i>No. of observations</i>	68	67	66	89	67	66	65	88
<i>R²</i>	0.33	0.2	0.33	0.31	0.37	0.25	0.33	0.4
<i>F-statistic</i>	10.36***	5.21***	10.04***	12.67***	4.87***	2.82***	4.03***	7.67***
<i>critical capital-labor ratio</i>	9.97	10.6	9.7	9.4	10.2	10.7	9.76	9.7

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level

Table 3: Easterly-Levine (disaggregate)- Regression with and without controls

	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>ideology</i>	-0.392*** (0.164)	-0.996*** (0.388)	-9.448 (10.453)	91.587** (54.209)	-0.392** (0.199)	-1.634*** (0.412)	-12.703 (10.643)	66.465 (56.886)
<i>ideology*capital-labor ratio</i>	0.042*** (0.018)	0.095*** (0.042)	0.98 (1.134)	-10.144** (5.83)	0.041** (0.021)	0.157*** (0.043)	1.245 (1.147)	-7.401 (6.082)
<i>capital-labor ratio</i>	-0.154*** (0.044)	-0.277*** (0.104)	-6.498*** (2.816)	38.141*** (14.302)	-0.129*** (0.055)	-0.389*** (0.112)	-4.795* (2.996)	33.349*** (15.944)
<i>political rights (Gastil)</i>					0.008 (0.011)	-0.009 (0.024)	0.368 (0.693)	-5.608* (3.408)
<i>sub-saharan africa</i>					0.073 (0.071)	0.303** (0.154)	9.142*** (3.607)	28.573 (20.139)
<i>east asia</i>					0.034 (0.073)	-0.352*** (0.153)	-0.337 (4.355)	13.598 (24.005)
<i>oil</i>					0.086 (0.092)	-0.093 (0.201)	6.068 (5.631)	-24.318 (31.629)
<i>constant</i>	1.588*** (0.424)	3.005*** (0.991)	70.507*** (26.462)	-313.06*** (135.505)	1.315*** (0.543)	4.166*** (1.096)	53.413** (28.863)	-258.669* (155.168)
<i>No. of observations</i>	37	36	38	44	36	35	37	43
<i>R²</i>	0.43	0.3	0.45	0.28	0.46	0.5	0.55	0.39
<i>F-statistic</i>	8.17***	4.53***	9.22***	5.06***	3.42***	3.89***	5.08***	3.19***
<i>critical capital-labor ratio</i>	9.3	10.5	9.6	9.1	9.6	10.4	10.2	9

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level

Table 4: Countries (Tariff-Ideology Relationship)

Negative Relationship

Madagascar
Ethiopia
Uganda
Mozambique
Sierra Leone
Burkina Faso
Angola
Guinea
Tanzania
Senegal
Bangladesh
Benin
Pakistan
China
Congo
Sri Lanka
Zimbabwe
El Salvador
Papua New Guinea
Thailand
Zambia
Guatemala
Mauritius
Nicaragua
Paraguay
Bolivia
Tunisia
Jamaica
Colombia
Guyana
Turkey
Costa Rica
Barbados
Peru
South Korea
Brazil
Chile
Ecuador
Uruguay
Taiwan

Positive Relationship

Portugal
Algeria
Mexico
Argentina
Cyprus
Trinidad & Tobago
Greece
Venezuela
United Kingdom
Ireland
Japan
Spain
Denmark
Austria
Sweden
New Zealand
Canada
Belgium
Netherlands
Italy
United States
France
Finland
Germany
Norway
Luxembourg
Switzerland

Table 5: Easterly-Levine (aggregate)- 2 SLS Regression with and without controls

	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>ideology</i>	-1.237*** (0.47)	-0.987* (0.61)	-58.18*** (26.293)	183.123*** (79.773)	-1.31*** (0.673)	-2.877*** (1.393)	-66.493* (43.097)	249.606** (133.564)
<i>ideology*capital-labor ratio</i>	0.128*** (0.05)	0.094* (0.065)	6.164*** (2.82)	-18.999*** (8.456)	0.134** (0.07)	0.29*** (0.146)	6.942* (4.535)	-25.722** (14.012)
<i>capital-labor ratio</i>	-0.36*** (0.121)	-0.276** (0.155)	-19.218*** (6.877)	60.753*** (20.265)	-0.365*** (0.149)	-0.739*** (0.3)	-21.654*** (11.092)	79.485*** (32.41)
<i>political rights (Gastil)</i>					0.002 (0.02)	-0.014 (0.043)	-1.079 (1.314)	-0.384 (4.202)
<i>sub-saharan africa</i>					0.066 (0.178)	0.214 (0.388)	3.877 (7.09)	9.741 (24.864)
<i>east asia</i>					-0.084 (0.117)	-0.462** (0.243)	-5.436 (7.716)	30.174 (26.443)
<i>oil</i>					0.048 (0.093)	-0.144 (0.202)	3.292 (7.02)	-8.614 (21.374)
<i>constant</i>	3.69*** (1.176)	3.042*** (1.503)	194.15*** (65.637)	-557.4*** (196.199)	3.74*** (1.447)	7.639*** (2.895)	222.881*** (108.703)	-746.749*** (318.29)
<i>No. of observations</i>	56	55	48	56	56	55	48	56
<i>R²</i>	0.37	0.22	0.46	0.4	0.38	0.32	0.5	0.46
<i>F-statistic</i>	5.5***	3.01***	10.04***	9.53***	2.15***	1.65*	2.42***	3.96***
<i>critical capital-labor ratio</i>	9.7	10.5	9.4	9.6	9.8	9.9	9.6	9.7

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level

Table 6: Panel Regression: Easterly-Levine (aggregate)

	Fixed effects model with time-specific fixed effects		Fixed effects model with time-specific and comprehensive region-specific fixed effects	
	<i>Import Duty</i>	<i>(X+M)/GDP</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>ideology</i>	-48.945*** (8.804)	180.963*** (25.918)	-35.799*** (11.032)	133.253*** (32.589)
<i>ideology*capital-labor ratio</i>	4.895*** (0.878)	-18.241*** (2.602)	3.511*** (1.088)	-13.489*** (3.236)
<i>capital-labor ratio</i>	-16.841*** (2.286)	55.541*** (6.579)	-13.765*** (2.917)	40.864*** (8.042)
<i>No. of countries</i>	51	54	51	54
<i>No. of time periods</i>	10	10	10	10
<i>Wald statistic(chi-square)</i>	793.31***	1112.21***	1220.6***	1801.4***
<i>Overall R²</i>	0.26	0.28	0.38	0.39
<i>critical capital-labor ratio</i>	9.99	9.92	10.2	9.88

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level

Table 7.1: Test Whether Fit is Poorer for Dictatorships

	<i>Tariff</i>	<i>Quota</i>	<i>Import</i>	<i>Tariff</i>	<i>Quota</i>	<i>Import</i>
			<i>Duty</i>			<i>Duty</i>
	<u><i>Dependent Variable: Squared</i></u>			<u><i>Dependent Variable: Absolute</i></u>		
	<u><i>Residuals</i></u>			<u><i>Deviations</i></u>		
<i>Dictatorship</i>	0.001**	0.006	7.89***	0.006**	0.014**	0.532***
<i>measure</i>	(0.0008)	(0.004)	(3.12)	(0.003)	(0.007)	(0.206)
<i>Constant</i>	0.005	0.027	9.31	0.055***	0.118***	3.05***
	(0.004)	(0.018)	(7.9)	(0.015)	(0.033)	(0.803)
<i>N</i>	67	66	65	67	66	65
<i>R</i> ²	0.04	0.03	0.01	0.1	0.08	0.1

Table 7.2: Correlation between predicted and actual values for distinct samples

	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>Democracies</i>	0.45	0.49	0.66	0.54
<i>Dictatorships</i>	0.16	0.27	0.35	0.23

Table 8: Easterly-Levine (aggregate)- Regression for fractionalized opposition

	Opposition Fractionalization < 0.5				Opposition Fractionalization >= 0.5			
	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>	<i>Tariff</i>	<i>Quota</i>	<i>Import Duty</i>	<i>(X+M)/GDP</i>
<i>ideology</i>	-0.524*** (0.194)	-1.251*** (0.427)	-14.531 (10.328)	61.754 (53.581)	-0.361*** (0.159)	-0.547** (0.319)	-10.44 (9.641)	54.908*** (25.393)
<i>ideology*capital-labor ratio</i>	0.053*** (0.02)	0.114*** (0.045)	1.545 (1.084)	-5.992 (5.574)	0.036*** (0.017)	0.054* (0.034)	1.063 (1.059)	-6.199*** (2.73)
<i>capital-labor ratio</i>	-0.167*** (0.049)	-0.334*** (0.108)	-6.246*** (2.606)	27.435*** (13.238)	-0.129*** (0.045)	-0.156** (0.091)	-5.369** (2.721)	23.705*** (7.303)
<i>constant</i>	1.816*** (0.491)	3.762*** (1.064)	70.203*** (25.479)	-238.163** (130.458)	1.423*** (0.439)	1.751** (0.884)	61.563*** (25.469)	-185.154*** (69.578)
<i>No. of observations</i>	30	29	33	40	38	38	33	49
<i>R²</i>	0.38	0.39	0.33	0.25	0.3	0.34	0.32	0.36
<i>F-statistic</i>	5.3***	5.38***	4.74***	4.05***	4.8***	1.16	4.72***	8.6***
<i>critical capital-labor ratio</i>	9.9	10.9	9.4	10.3	10	10.1	9.8	8.9

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level

Table 9: Regression for opposition fractionalization

	<i>Tariff</i>	<i>Tariff (controls)</i>
<i>ideology</i>	-0.314*** (0.138)	-0.319*** (0.15)
<i>ideology*capital-labor ratio</i>	0.036*** (0.014)	0.037*** (0.015)
<i>capital-labor ratio</i>	-0.091*** (0.033)	-0.087*** (0.035)
<i>fractionalization*ideology</i>	0.481*** (0.136)	0.455*** (0.141)
<i>fractionalization*ideology)capital-labor</i>	-0.057*** (0.017)	-0.059*** (0.017)
<i>fractionalization</i>	0.147 (0.199)	0.266 (0.209)
<i>political rights (Gastil)</i>		0.006 (0.01)
<i>sub-saharan africa</i>		0.033 (0.066)
<i>east asia</i>		-0.071 (0.061)
<i>oil</i>		0.137** (0.069)
<i>constant</i>	0.976*** (0.375)	0.876*** (0.403)
<i>No. of observations</i>	53	52
<i>R²</i>	0.56	0.61
<i>F-statistic</i>	9.71***	6.37***

Standard errors in parantheses; *** - significant at 5% level, ** - significant at 10% level * - significant at 15% level