

Taxability and Trade

Jason S. Davis, University of Michigan*

Abstract

The political economy of trade literature tends to conceive of the relationship between fiscal capacity and trade policy fairly simply: states that have limited fiscal capacity will be more likely to use tariffs to raise revenues given the lack of other means of doing so. This paper presents a model that complicates this story; what matters is not just overall levels of fiscal capacity, but the relative taxability of different domestic groups. In particular, while greater ability to tax the winners of freer trade makes freer trade more likely, greater ability to tax the losers of freer trade may actually make protectionism more likely. This follows because governments can use taxation to redistribute the revenues generated by any policy to better respond to the distributive politics game they face, provided that the revenues accrue to a party that is taxable. This generates a number of empirical implications for patterns of trade policy: for instance, we would expect trade policy to be biased towards factors, industries, and firm sizes that are easier to tax. Moreover, the model provides insight into the conditions under which compensation can be used as a tool to promote freer trade: specifically, governments need to be able to tax free trade's winners in order to implement the fiscal bargains that would make trade more politically saleable.

Introduction

Centuries of history link trade policy to issues of state fiscal capacity. In the early years of the United States, for instance, the question of “free trade” was not about whether or not tariffs should be eliminated, but whether or not tariffs should be for protecting industries or “for revenue only” (Irwin 2017 p. 69). Lacking other significant means of collecting revenues, trade tariffs quickly displaced state-imposed direct taxes (poll and land) as the primary source of revenue. Indeed, reforms implemented by Alexander Hamilton in 1790 allowed for a reduction of direct taxation by roughly 85% (Edling and Kaplanoff 2004, p. 731).

At the time, this was considered both politically efficient (it helped reduce unrest over state taxation that had led to protests in the 1780s), and even economically efficient, as the administrative costs of imposing tariffs on foreign goods, which had only a few ports of entry,

*Department of Political Science. E-mail: jasonsd@umich.edu.

were far less than for direct taxes; an estimated 4 percent versus 20 percent of gross revenue, by some estimates (Balinky 1958, p. 57). Indeed, tariffs continued to provide the majority of US revenues until 1914, when income taxation was introduced (Reamer 2016).

However, despite this long, intertwined history, the political economy of trade literature has not devoted much attention to interrogating the relationship between fiscal capacity - i.e. the ability to tax different groups - and trade policy. While it is the conventional wisdom that tariffs will be implemented in cases where state capacity is relatively low, due to tariffs' relative ease of implementation, there has been little attempt to determine if the situation might be any more complicated than that.

This paper presents a formal model that demonstrates that while this conventional wisdom does capture some of the broader patterns in the use of trade tariffs (Dincecco and Prado 2012, Besley and Persson 2013), it does not tell the whole story. Indeed, what matters is not just the overall levels of fiscal capacity of a state, but which specific groups a government is able to tax.

To see this, consider that trade tariffs are often treated as being determined by the outcome of some distributive politics game: who wins and loses, and which of these groups are likely to be politically influential due to a variety of factors, are used to predict which groups are likely to receive protection. Taxation and spending decisions are naturally treated in a similar fashion: politically influential groups may be more able to demand reductions in taxation or increases in spending programs that benefit them.

However, if both these claims are true, then what results is a game in which these two quantities are *jointly determined*. A group may, for instance, be willing to accept reductions in tariff protection in return for more favorable tax treatment, or vice versa. Moreover, the ability to tax groups varies depending on a variety of characteristics. It may be more costly to implement taxation on certain groups over others due to variation in the degree of dead-weight losses generated by taxing different quantities, differing administrative costs across various kinds of taxes, relative ease for such groups to evade taxation, or even the political optics costs to increasing taxation on certain groups. Given this, the extent to which the government can use tax policy as a substitute redistributive policy for tariffs is conditional on the magnitude of these costs.

Put differently, a government's ability to tax and spend creates the possibility that trade liberalization (or even protection) can be the outcome of a larger bargain with the parties implicated by protectionist policies. The losing parties to a policy can be compensated for their losses - and in the case of a move to freer trade, there should typically be a larger pie with which to compensate them. However, what is important for generating these bargains is not just the total fiscal capacity of the government, but whether or not value can be transferred from specific groups to others; i.e. from the winners to the losers. If the winners

from a policy are not easily taxable, this reduces the likelihood that such a policy will be politically optimal from the standpoint of governments.

Thus, this paper contributes to our understanding of trade politics in a number of ways. First, it gives a more nuanced understanding of the relationship between fiscal capacity and trade policy; an increase in fiscal capacity may even make protectionist policies more likely if it takes the form of greater ability to tax the beneficiaries of protectionism. This new model of group-specific taxability and trade has significant implications for the empirical trade policy patterns we would expect to observe: in particular, we would expect trade policy to be biased in favor of factors, industries, and firm sizes that are easier to tax.

Second, the paper provides an explanation for an “efficiency puzzle” in the domain of trade politics. Namely, if freer trade increases the “size of the pie” being bargained over by generating aggregate gains for a country, it should theoretically be possible to redistribute the surplus so that every party is better off than in a protectionist equilibrium; i.e. the new outcome should be a Pareto-improvement. This paper shows that the ability to “compensate the losers” can be conditional on who the winners and losers are; in some cases, the winners will be taxable in a way that allows their gains to be “monetized” by the government, but in other cases they may be difficult to tax in a way that limits these compensatory bargains. Thus, this paper can provide insight into empirical patterns of trade protection, and can provide insight into an outstanding theoretical question about the seemingly inefficient use of trade protection as a means of redistributing income between groups.

Overview of the Literature

As mentioned earlier, political economy scholars have generally treated trade policy as the outcome of political competition between the winners and losers of protectionist policies. As a consequence, much of the literature has focused on identifying who exactly those winners and losers are. Depending on the circumstances, such cleavages might occur along factor lines (Rogowski 1990), industry lines (Scheve and Slaughter 2001, Hiscox 2002), or even between firms of differing sizes and productivities (Osgood 2016, Kim 2017). The literature has also made clear that both importers and exporters are important political actors in the determination of trade policies (Gilligan 1997, Betz 2017).

Beyond determining who the winners and losers are from protectionism, the literature has devoted significant attention to identifying the characteristics that lead governments to value certain groups over others when determining trade policy. This includes work on lobbying (Grossman and Helpman 1994, Goldberg and Maggi 1999, Gawande and Bandyopadhyay 2000, Bombardini 2008, Gawande et al. 2012), and the impact of democratization on trade policy (Mansfield et al. 2000, Milner and Kubota 2005).

This work establishes an important starting point for the analysis of this paper. This paper

does not to seek to explain which groups are politically influential, or who benefits from particular trade policies; instead, these characteristics are treated as exogenous parameters in the model. The goal of this paper is instead to show that if we take these characteristics as given, varying the taxabilities of groups can change what we would expect the policy outcomes to be.

Another important literature emerges from the study of public finance in economics. This literature has been active in assessing the characteristics that lead to variation in taxes' deadweight losses, administration costs, and ease of evasion or avoidance (Slemrod and Yitzhaki 2002, Kumler et al. 2013, Best et. al 2015, etc.). The model of this paper also does not attempt to contribute new insight to this literature; instead, costs of taxation are specified exogenously. However, this literature (along with the earlier cited trade literature) is important for any discussion of empirical applications of the model, and it is helpful in clarifying that the costs of taxation derive not only from deadweight losses created by distortions in production and consumption decisions, but also from difficulties associated with the administration and enforcement of taxes.

From political science, the "taxation and accountability" literature is also related to this paper. This literature, broadly speaking, suggests that governments provide policy concessions to groups as part of a bargain to encourage compliance with taxation (Bates and Lien 1985, Levi 1988, North and Weingast 1989, Timmons 2005, Martin 2014). Compliance with taxation, in this account, is "quasi-voluntary", with groups being able to extract concessions by threatening to withhold payment. Recently, this approach has been applied to trade, where it has been argued that industries in developing countries have exchanged compliance for protection (Queralt 2015, 2017).

Essentially, this literature would argue that providing favorable tax policy to groups makes those groups easier to tax. This paper argues, instead, that greater ability to tax groups leads to more provision of trade policy that benefits those groups; essentially reversing the causal arrow of the taxation and accountability story.

There are several advantages to this paper's explanation. To start, it applies to situations in which taxation is not really quasi-voluntary, but enforced through threat of sanction by the government. Given the extensive efforts that groups and individuals often exert in order to avoid or evade taxation, and the collective action problem associated with it being individually rational not to pay taxes if the trade policy benefits to a group are non-excludable within that group, it is likely that such situations are quite common. For instance, even in Michigan (until recent policy changes), voluntary compliance with self-reporting of sales tax for purchases made online (e.g. through Amazon) was estimated to be about 2.5%.¹

Even if we accept that taxation is sometimes quasi-voluntary, this paper suggests that the

¹September 29, 2015. Detroit Free Press

causality could go both ways, reinforcing the link we observe between taxation and favorable trade policies. Moreover, while this paper's argument is equally consistent with the evidence that taxation of industries is correlated with protectionist policies favoring those industries in the developing world (Queralt 2017), the model also produces new empirical implications about the relationship between exogenous features of a factor, industry or firm that affect the costs of taxation (e.g. demand elasticities of products, firm sizes, capital intensity) and trade policy. While a model rooted in quasi-voluntary compliance might predict that low costs to taxing a group would not impact their ability to extract favorable trade policies - or might even predict that low costs would have a *negative* impact by reducing the leverage a group obtains by being able to credibly withhold concessions - this paper suggests that ease of taxation should track with favorable trade policies for reasons that have nothing to do with a bargain between the government and various private groups, and everything to do with the government's ability to extract resources via coercion and use them to support its own political agenda.

This paper also relates to a number of papers across subfields in political science and economics that deal with the question of inefficient policy. In the international relations literature, the most prominent example is the work on bargaining models of conflict, which notes that because war is inefficient (i.e. destroys value relative to peace), peaceful bargains should be preferred absent some factor leading to bargaining breakdown, such as a commitment problem, information problem, or indivisibility issue (Fearon 1995, Powell 2004, Powell 2006). Despite the fact that international trade has similar characteristics - protection is also inefficient - there has been little attempt to address similar questions in the international political economy literature.

In the economics literature, a number of explanations for inefficient policy more broadly have been posited, including bargaining models, commitment problems, and information asymmetries (Coate and Morris 1995, Acemoglu and Robinson 2001, Acemoglu 2003, Drazen and Limao 2008). Moreover, the theoretical result that the ability to redistribute income costlessly (i.e. perfect fiscal capacity) should lead governments to maximize national income and then use redistributive taxation is famously shown by Diamond and Mirrlees in a paper on production efficiency (Diamond and Mirrlees 1971). Their result is made in reference to a government maximizing a general social welfare function, but extending the result to a political objective function is straightforward: the main point is that a Pareto improving distribution of resources can always be achieved using production efficiency and redistributive taxation, if taxation is costless.

This paper explores the consequences for international trade of this costless taxation assumption breaking down, and more specifically, breaking down unequally across groups. The literature on this in economics generally assumes that efficient taxation is possible, and is more interested in explaining why less efficient taxes would be used instead of these readily available efficient means (Acemoglu 2003). The limited literature that takes seriously fiscal

capacity as a constraint on efficient redistribution in politics focuses on the consequences for government’s incentives to invest in public goods or fiscal capacity, but it does not explore the distributive consequences, nor does it consider cases where fiscal capacity may be unequal across groups (Acemoglu 2005, Besley and Persson 2009).

Consequently, this paper provides an explanation for inefficient trade policy that is not only absent from the existing political economy of trade literature, but also largely absent from the broader theoretical literature on inefficient policy.

This answer to a theoretical puzzle allows the paper to speak to a literature in trade politics often referred to as “embedded liberalism”, which has broadly argued that government spending can be used to compensate trade’s losers in order to make freer trade more politically saleable. This literature originated in work that argued that made the case that the post-war expansion of the welfare state could be understood as an example of this kind of bargain (Ruggie 1982). Rodrik (1998) brought early statistical evidence to bear on the compensation hypothesis, identifying a correlation between public sector size and external openness, which was interpreted as governments insuring voters against “external risk”. Later work has provided further evidence that compensation programs can be used to increase support for open trade, using data from trade adjustment assistance in the United States (Margalit 2011), active labor market programs in the OECD (Hays et al. 2005, Hays 2009), and even survey experiments (Ehrlich and Hearn 2014).

This paper identifies limits to the feasibility of such compensatory bargains. The logic of compensating the losers relies implicitly on the ability to extract such compensation from the winners. Indeed, it is not enough that governments simply have “fiscal capacity” in some broader sense of being able to raise revenues “somewhere” - redistributing income from some party other than trade’s beneficiaries would simply entail exchanging one set of trade losers for another. Thus, a necessary condition for the embedded liberalism mechanism to work is that the winners be taxable; a condition that may be violated in a number of important cases. For instance, work seeking to apply the embedded liberalism framework to the developing world has found little evidence of compensation (Rudra 2002, Wibbels and Ahlquist 2011); if open trade’s beneficiaries in the developing world are more difficult to tax (as I later argue is the case), then this is precisely what the model would predict.

Model

Set-up

The model outlined in this paper is a simple distributive politics model in which a government maximizes a weighted sum of the utilities to two groups. The weightings attached to each group represent the degree to which these groups are politically influential. The weightings are specified exogenously, and could be the result of any of a broad variety of

factors identified by the trade literature as important to group influence. By assigning these exogenously, the model can be applied generally to a broad variety of situations in which these weightings might vary.

Each group's utility function is concave, represented in explicit form by a natural logarithm. As a consequence, the government's objective function has a logarithmic Cobb-Douglas form. Both groups receive exogenous income $y_1, y_2 \in \mathbb{R}^+$ that can be conceptualized as all the income they receive that is not dependent on the trade policy in question. Each group can also receive additional income in one of two ways: (1) by receiving a favorable trade policy; (2) by receiving income taxed and redistributed to them from the other group.

Government first chooses the trade policy $\tau \in \{0, 1\}$. If $\tau = 1$, the government has chosen a protectionist policy, in which case Group 1 (whom we will set as the pro-protectionist group) gets additional income $v_1 \in \mathbb{R}^+$. If $\tau = 0$, the government has chosen free trade, in which case Group 2 (whom we will set as the pro-trade group) gets additional income $v_2 \in \mathbb{R}^+$. The government then chooses tax rates $t_1, t_2 \in [0, 1]$, which redistribute income from one group to the other.

However, some percentage of the income is lost in the process of transferring it from one group to the other due to various costs from taxation. As a consequence, only θ_1 proportion of the income transferred from group 1 will be received by group 2, and only θ_2 proportion of the income transferred from group 2 will be received by group 1. θ_1, θ_2 thus represent the different "taxabilities" of the different groups, by representing costs to taxation as a "leaky bucket".² Thus we have the following objective function for the government:

$$G(t_1, t_2, \tau) = \alpha \ln[(1-t_1)(y_1 + \tau v_1) + \theta_2 t_2 (y_2 + (1-\tau)v_2)] + \ln[(1-t_2)(y_2 + (1-\tau)v_2) + \theta_1 t_1 (y_1 + \tau v_1)]$$

Where $\alpha \in [0, 1]$ is the weighting placed on Group 1, with Group 2's weighting normalized to 1 for simplicity. For reminder, $t_1, t_2 \in [0, 1]$ are the tax rates, $\tau \in \{0, 1\}$ is the choice of trade policy, $v_1, v_2 \in \mathbb{R}^+$ are the values to the different trade policies, and $\theta_1, \theta_2 \in [0, 1]$ are the "taxabilities" of the different groups. Government chooses t_1, t_2, τ to maximize this objective function.

Analysis

We can now begin to analyze the model. We want to demonstrate that τ^* , i.e. the optimal trade policy for Government, is monotonically increasing in θ_1 . This would demonstrate that by increasing the taxability of Group 1 (i.e. the protectionist group), we increase the chances that a protectionist policy will be implemented.

²Note that by calling these "taxabilities", we are implicitly assuming that there is no efficiency loss in the subsidization process, since θ_1, θ_2 represent the total value lost in the transfer on both taxing and spending sides. A later section of the paper will discuss a possible application to "spendabilities".

Because the space of τ is discrete, we cannot find the relevant comparative static (how τ varies with θ_1) by simply finding $\frac{\partial \tau^*}{\partial \theta_1}$ via the implicit function theorem, given that this derivative will not exist. Instead we can rely on monotone comparative statics, as outlined by Milgrom and Shannon (1994).³ Monotone comparative statics shows that a sufficient condition for establishing a monotonic relationship between a choice variable and a parameter is a mathematical representation of complementarity between the two known as “increasing differences”.⁴ For this paper, this condition can be represented as follows,

$$G(\theta'_1, \tau = 1) - G(\theta_1, \tau = 1) \geq G(\theta'_1, \tau = 0) - G(\theta_1, \tau = 0)$$

for $\theta'_1 > \theta_1$. Intuitively, this condition suggests that the incremental returns to increases in θ_1 are higher when $\tau = 1$ than when $\tau = 0$; hence the “differences” are “increasing” as τ increases. This reflects complementarity in the sense that increases in θ_1 are more impactful conditional on higher τ .

Thus, we need to compare the cases where $\tau = 0$ with $\tau = 1$, i.e. what happens to Government’s objective function when they choose each of the two possible trade policies.

$$\begin{aligned} G(t_1, t_2 | \tau = 0) &= \alpha \ln[(1 - t_1)(y_1) + \theta_2 t_2 (y_2 + v_2)] + \ln[(1 - t_2)(y_2 + v_2) + \theta_1 t_1 (y_1)] \\ G(t_1, t_2 | \tau = 1) &= \alpha \ln[(1 - t_1)(y_1 + v_1) + \theta_2 t_2 y_2] + \ln[(1 - t_2)(y_2) + \theta_1 t_1 (y_1 + v_1)] \end{aligned}$$

Conveniently, once τ is taken into account, G is differentiable in θ_1 . So we take derivatives and obtain:

$$\frac{\partial G(\tau = 0)}{\partial \theta_1} = \frac{t_1 y_1}{(1 - t_2)(y_2 + v_2) + \theta_1 t_1 y_1} \quad (1)$$

$$\frac{\partial G(\tau = 1)}{\partial \theta_1} = \frac{t_1 (y_1 + v_1)}{(1 - t_2)y_2 + \theta_1 t_1 (y_1 + v_1)} \quad (2)$$

Now consider that in either case (whether $\tau = 0$ or $\tau = 1$), t_1 or t_2 will be at a corner solution of zero, given that taxation destroys value for any $\theta_1, \theta_2 \neq 1$. In other words, it would not make sense for government to transfer income in *both* directions, since they could simply transfer the net amount from one party to another and save the costs from taxation.

If $t_1 = 0$ in both cases, these derivatives are both equal to zero. Indeed, it makes sense that θ_1 will have no effect on tariff policy if Government will refuse to tax Group 1 in either case, since then taxation of Group 1 is not being employed at all. Also, if $t_1 = 0$ only when $\tau = 0$, then clearly (2) > (1), since (2) is positive but (1) is equal to zero. It is also immediately clear that there is no situation in which $t_1 = 0$ when $\tau = 1$ but $t_1 \neq 0$ when $\tau = 0$, because Government’s objective function is concave in each group’s income, and that would describe a situation where Government chooses to extract money from Group 1 only when that group

³Also see Ashworth and Bueno de Mesquita 2006 for a discussion of its applications to models of politics.

⁴In fact, a slightly weaker condition known as the single-crossing condition is sufficient, though this is used less frequently.

starts off with less income.

If $t_1 \neq 0$ in both cases, implying $t_2 = 0$ in both cases, then we can compare:

$$\frac{\partial G(\tau = 0)}{\partial \theta_1} = \frac{t_1 y_1}{y_2 + \theta_1 t_1 y_1 + v_2} \quad (3)$$

$$\frac{\partial G(\tau = 1)}{\partial \theta_1} = \frac{t_1 (y_1 + v_1)}{y_2 + \theta_1 t_1 y_1 + \theta_1 t_1 v_1} \quad (4)$$

We want to compare the values of these two derivatives. So, we can assess when (4.4) > (4.3) as follows:

$$\begin{aligned} \frac{t_1 (y_1 + v_1)}{y_2 + \theta_1 t_1 y_1 + \theta_1 t_1 v_1} &> \frac{t_1 y_1}{y_2 + \theta_1 t_1 y_1 + v_2} \\ \Leftrightarrow (y_1 + v_1)(y_2 + \theta_1 t_1 y_1 + v_2) &> y_1(y_2 + \theta_1 t_1 y_1 + \theta_1 t_1 v_1) \\ \Leftrightarrow y_1 v_2 + v_1 y_2 + v_1 \theta_1 t_1 y_1 + v_1 v_2 &> y_1 \theta_1 t_1 v_1 \\ \Leftrightarrow y_1 v_2 + v_1 y_2 + v_1 v_2 &> 0 \end{aligned}$$

Which clearly must be the case, since $v_1, y_2, v_2 \in \mathbb{R}^+$. Thus we have demonstrated that:

$$\frac{\partial G(\tau = 1)}{\partial \theta_1} > \frac{\partial G(\tau = 0)}{\partial \theta_1}$$

Which is a statement of increasing differences. Thus, by monotone comparative statics, we have that τ^* is (weakly) monotonically increasing in θ_1 . In words, we have found that Government is more likely to impose protectionist measures when the pro-protectionist group is easier to tax. Since the game is largely symmetric across groups, we could simply repeat the analysis to obtain the complementary conclusion that Government is more likely to propose freer trade when the pro-trade group is easier to tax.

Applications

The model suggests that in addition to all the other factors that influence which trade policies are likely to be implemented by governments - e.g. who wins and loses from particular trade policies, the factors underlying group influence, etc. - the relative taxability of groups should also impact what trade policies we should expect to observe. In particular, we should expect trade policies to be biased towards whichever side of a trade-related political cleavage is easier to tax. With this in mind, we can consider some of the empirical implications we might expect from this model.

Factor Cleavages

Political economists have often argued that political cleavages over trade may occur along factor lines, especially if we are considering the longer term patterns of trade policy (Rogowski 1990, Hiscox 2002). This follows from the economic predictions of Heckscher-Ohlin

(HO). This paper would thus lead us to ask: which is more taxable, capital or labor? Land or labor? Skilled or unskilled labor?

The answers to these questions may depend on a number of factors, such as capital mobility, per-capita income (especially if there are fixed costs to taxation), or even the legal institutions of a country in question. As such, this is an area worth of a more sustained systematic empirical inquiry than is within the scope of this paper. Nonetheless, we can speculate about the degree to which certain stylized facts seem to fit the story described by this model.

For instance, trade protection is generally more extensive in the developing world than the developed world (Moutos 2001). Given that poorer countries are usually relatively abundant in unskilled labor, an HO model would lead us to expect that freer trade in developing countries would broadly benefit unskilled labor relative to skilled labor. Naively, we might initially expect this to make trade liberalization an easier sell in the developing world, given that in developed countries much of the opposition to globalization has been structured around issues such as increased inequality, or the degree to which the wealthiest capture the gains, while we might expect the poorest to capture most of the gains of open trade in the developing world.

However, in many developing countries, the informal sector makes up a disproportionate portion of the economy, especially amongst unskilled workers. As such, the model suggests that we should expect trade policy to be biased against such workers. This could help to explain why developing countries are broadly more protectionist than developed countries.

Conversely, land may be one of the easiest factors to tax, given that it is immovable (unlike often highly mobile capital) and, as far as assets go, fairly difficult to hide. Commensurate with what this model would predict, we also see that agriculture often receives much higher levels of protection than other commodities, in what is often described as a puzzle by political economists (Thies and Porche 2007). This paper may help to explain this regularity.

Industry Cleavages

Especially in the short term, however, political economists have argued that cleavages might instead occur along industry lines, as predicted by Ricardo-Viner (Scheve and Slaughter 2001, Hiscox 2002). It is also certainly the case that industries vary in the degree to which they are taxable. Oil and many other natural resource industries, for instance, are easily observable, highly immobile, and capital intensive in a way that makes them especially easy to tax. Contrastingly, much of the service industry, and especially the freelance industry, is much more difficult to tax given that it can be diffuse and intangible. Thus, the model would predict that trade policy would be biased towards industries like oil and possibly biased against certain subareas of the service sector.

Firm Cleavages

Trade-related cleavages might also occur along firm lines, given that a move to more open trade tends to lead to market consolidation around a smaller number of larger, highly-productive firms (Melitz 2003). This can lead to political divisions around trade agreements between these larger firms, who are also much more likely to be exporters, and smaller firms who may only sell their products in domestic markets, and who may be more likely to go out of business with an expansion of the size of the market (Osgood 2016, Kim 2017).

Whether larger or smaller firms are more easily taxable is not immediately obvious. On the one hand, smaller firms might be more difficult to tax, as they might have an easier time flying under the radar of tax auditors who may not see the value in investing significant fixed costs to track and assess the tax compliance of relatively “small fish”. On the other hand, larger firms may have more resources to invest in complicated strategies of tax avoidance, relocating to tax havens, etc. and might be better able to move their assets abroad to lower tax jurisdictions. This would lead us to expect that larger firms would be more difficult to tax.

Evidence presented by Hanlon, Mills, and Slemrod (2005) appears to suggest that larger firms engage in more tax avoidance. If this is the case, the model would predict that trade policy should be biased against larger firms in favor of small businesses.

Capital Mobility

One particular source of taxability - asset mobility - has been the subject of significant discussion in the political science literature (Garrett 1995, Oatley 1999, Clark 2002, Clark et al. 2017). Given that this literature broadly argues that higher asset mobility should provide such asset holders with the ability to extract greater concessions from the government due to their better exit options, it is worth discussing why this paper might come to different conclusions.

Clark, Golder, and Golder (2017) consider asset mobility explicitly within the Exit, Voice, and Loyalty (EVL) framework proposed by Hirschman (1970). While they focus on the importance of exit options, equally important within this framework is the value the government places on “loyalty”, often described as the “dependence” of government. This paper essentially argues that this component of the EVL framework is determined in part by taxabilities; if a government cannot tax you, then they have less of a stake in your success.

What then should we predict about the impact of increased asset mobility for a group on trade policy favoring that group? We might expect the effect to be ambiguous: on the one hand, exit options provide a group leverage to extract concessions, but on the other hand the government loses a reason to care about whether that group exits or not. Likely to be important in this case is α , i.e. the weighting the government places on a group for reasons

outside of their taxability. If a group is especially politically influential for independent reasons - e.g. if they are an important part of a government's winning coalition (Bueno de Mesquita et al. 2005) - then the ability to tax their gains to redistribute to others may not be as important a consideration for the government when deciding on trade policy.

An Extension: “Spendability”

While this paper has focused on taxability of different groups - which is likely the area which exhibits the highest degree of variation in the world, and thus allows for the most interesting empirical implications - it is worth noting that given that tax costs are simply modeled as a “leaky bucket” in the process of transferring income from one group to another group, these costs could just as easily be interpreted as limits on the ability of a government to spend revenues in a way that targets a particular group.

A historical example provides an interesting illustration of how this might work. In the United States, during the 1820-1830s, the United States adopted a series of tariffs to protect manufacturers in northeast states; tariffs rose on dutiable imports from 25 percent in 1820 to about 62 percent in 1830, which is the highest level in US history (Irwin 2017 p. 154). These tariffs were bitterly opposed by southern states who complained about the indirect effects that such tariffs had on the prices of exported staple crops that their economies largely depended on. The Midwest, in contrast, was mostly indifferent on the question of tariffs, but held the balance of power in the US Senate.

At a time in the United States where taxation and spending programs were heavily limited, one needed two out of three of the North, South, and Midwest to agree to any policy for it to have a chance of passing. How might one then construct a bargain in favor of any particular trade policy?

The strategy of the Northerners was to link import tariffs - which in effect, were an indirect tax on the South - to investments in “internal improvements” (e.g. roads, railways, etc.) in the Midwest so as to buy the Midwest's support for import duties. One important reason why this particular coalition evolved- i.e. between the North and the Midwest - is because the government lacked policy options with which to buy off the South directly, since the South had easy access to seaports, and thus was not geographically positioned to benefit from federal spending on such projects (Irwin 2017, p. 159). Similarly, there was no easy way to tax the benefits of freer trade to the South and redistribute it to the North and Midwest, given that trade tariffs were essentially the only revenue collection instrument being regularly used during that time period. Thus, in this case, varying taxabilities and spendabilities across regions led to a particular bargain being implemented in favor of protection, while a world with different taxabilities and spendabilities might very well have led to a different outcome.

Conclusion

In this paper, I have identified how the typical story about fiscal capacity and trade policy - that lower fiscal capacity leads to greater reliance on trade tariffs due to lack of other means of raising revenues - provides us with useful insight into the broader patterns of trade protection, but does not tell the entire story. Instead, a model that looks at the relative taxability of different factors, industries, or firms can provide a good deal of new insight into the particular trade policies we would expect to be implemented under different circumstances. Moreover, this paper's model provides insight into why inefficient trade protection might emerge despite the fact that it destroys value; namely, because the beneficiaries of aggregate-income improving open trade policies may not be taxable in a way that would allow their gains to be used by governments to buy off the groups that lose from freer trade.

References

- Acemoglu, D. (2003). Why Not a Political Coase Theorem? Social Conflict, Commitment, and Politics. *Journal of Comparative Economics*, 31(4), 620–652.
- Acemoglu, D. (2005, October). Politics and Economics in Weak and Strong States. *Journal of Monetary Economics*, 52(7), 1199–1226.
- Acemoglu, D., & Robinson, J. (2001). Inefficient Redistribution. *American Political Science Review*, 95(3), 649–661.
- Ashworth, S., & Mesquita, E. B. d. (2006). Monotone Comparative Statics for Models of Politics. *American Journal of Political Science*, 50(1), 214–231.
- Balinky, A. (1958). *Albert Gallatin: Fiscal Theories and Policies*. Rutgers University Press.
- Bates, R. H., & Donald Lien, D.-H. (1985, March). A Note on Taxation, Development, and Representative Government , A Note on Taxation, Development, and Representative Government. *Politics & Society*, 14(1), 53–70.
- Besley, T., & Persson, T. (2009, September). The Origins of State Capacity: Property Rights, Taxation, and Politics. *American Economic Review*, 99(4), 1218–1244.
- Besley, T., & Persson, T. (2013, June). Taxation and Development. In A. J. Auerbach, R. Chetty, M. Feldstein, & E. Saez (Eds.), *Handbook of Public Economics* (Vol. 5). Elsevier.
- Best, M. C., Brockmeyer, A., Kleven, H. J., Spinnewijn, J., & Waseem, M. (2015, December). Production versus Revenue Efficiency with Limited Tax Capacity: Theory and Evidence from Pakistan. *Journal of Political Economy*, 123(6), 1311–1355.
- Betz, T. (2017). Trading Interests: Domestic Institutions, International Negotiations, and the Politics of Trade. *The Journal of Politics*.

- Bombardini, M. (2008). Firm Heterogeneity and Lobby Participation. *Journal of International Economics*, 75(2), 329–48.
- Bueno de Mesquita, B., Smith, A., Morrow, J. D., & Siverson, R. M. (2005). *The Logic of Political Survival*. MIT Press.
- Clark, W. R. (2002). Partisan and Electoral Motivations and the Choice of Monetary Institutions Under Fully Mobile Capital. *International Organization*, 56(4), 725–749.
- Clark, W. R., Golder, M., & Golder, S. N. (2017). The British Academy Brian Barry Prize Essay: An Exit, Voice and Loyalty Model of Politics. *British Journal of Political Science*, 47(04), 719–748.
- Coate, S., & Morris, S. (1995). On the Form of Transfers to Special Interests. *Journal of Political Economy*, 103(6), 1210–1235.
- Diamond, P., & Mirrlees, J. (1971). Optimal Taxation and Public Production: I—Production Efficiency. *American Economic Review*, 61(1), 8–27.
- Dincecco, M., & Prado, M. (2012, September). Warfare, Fiscal Capacity, and Performance. *Journal of Economic Growth*, 17(3), 171–203.
- Drazen, A., & Limao, N. (2008). A Bargaining Theory of Inefficient Redistribution Policies. *International Economic Review*, 49(2), 621–657.
- Edling, M. M., & Kaplanoff, M. D. (2004). Alexander Hamilton’s Fiscal Reform: Transforming the Structure of Taxation in the Early Republic. *The William and Mary Quarterly*, 61(4), 713–744.
- Ehrlich, S. D., & Hearn, E. (2014). Does Compensating the Losers Increase Support for Trade? An Experimental Test of the Embedded Liberalism Thesis. *Foreign Policy Analysis*, 10(2), 149–64.
- Fearon, J. D. (1995). Rationalist Explanations for War. *International Organization*, 49, 03.
- Garrett, G. (1995). Capital Mobility, Trade, and the Domestic Politics of Economic Policy. *International Organization*, 49(4), 657–687.
- Gawande, K., & Bandyopadhyay, U. (2000). Is Protection for Sale? Evidence on the Grossman-Helpman Theory of Endogenous Protection. *The Review of Economics and Statistics*, 82(1), 139–52.
- Gawande, K., Krishna, P., & Olarreaga, M. (2012). Lobbying Competition Over Trade Policy. *International Economic Review*, 53(1), 115–32.
- Gilligan, M. J. (1997). *Empowering Exporters: Reciprocity, Delegation, and Collective Action in American Trade Policy*. University of Michigan Press.

- Goldberg, P., & Maggi, G. (1999). Protection for Sale: An Empirical Investigation. *American Economic Review*, 89(5), 1135–55.
- Grossman, G. M., & Helpman, E. (1994). Protection for Sale. *The American Economic Review*, 84(4), 833–850.
- Hanlon, M., Mills, L. F., & Slemrod, J. B. (2005, June). *An Empirical Examination of Corporate Tax Noncompliance* (SSRN Scholarly Paper No. ID 891226). Rochester, NY: Social Science Research Network.
- Hays, J. C. (2009). *Globalization and the New Politics of Embedded Liberalism*. Oxford University Press. (Google-Books-ID: Ez741AvJikEC)
- Hays, J. C., Ehrlich, S. D., & Peinhardt, C. (2005). Government Spending and Public Support for Trade in the OECD: An Empirical Test of the Embedded Liberalism Thesis. *International Organization*, 59, 02.
- Hirschman, A. O. (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Harvard University Press.
- Hiscox, M. J. (2002). *International Trade and Political Conflict: Commerce, Coalitions, and Mobility*. Princeton University Press.
- Irwin, D. (2017). *Clashing Over Commerce: A History of US Trade Policy*. University of Chicago Press.
- Kim, I. S. (2017). Political Cleavages within Industry: Firm-Level Lobbying for Trade Liberalization. *American Political Science Review*, 111(1), 1–20.
- Kumler, T., Verhoogen, E., & Frías, J. A. (2013, August). *Enlisting Employees in Improving Payroll-Tax Compliance: Evidence from Mexico* (Working Paper No. 19385). National Bureau of Economic Research.
- Levi, M. (1988). *Of Rule and Revenue*. University of California Press.
- Mansfield, E. D., Milner, H. V., & Rosendorff, B. P. (2000, June). Free to Trade: Democracies, Autocracies, and International Trade. *American Political Science Review*, 94(2), 305–321.
- Margalit, Y. (2011). Costly Jobs: Trade-Related Layoffs, Government Compensation, and Voting in U.S. Elections. *American Political Science Review*, 105, 01.
- Martin, L. (2014). *Taxation, Loss Aversion, and Accountability: Theory and Experimental Evidence for Taxation's Effect on Citizen Behavior*.
- Melitz, M. J. (2003). The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity. *Econometrica*, 71(6), 1695–1725.

- Milgrom, P., & Shannon, C. (1994). Monotone Comparative Statics. *Econometrica*, 62(1), 157–180.
- Milner, H. V., & Kubota, K. (2005). Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries. *International Organization*, 59(1), 107–43.
- Moutos, T. (2001, March). Why Do Poor Democracies Collect a Lot of Tariff Revenue? *Economics & Politics*, 13(1), 95–112.
- North, D. C., & Weingast, B. R. (1989, December). Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England. *The Journal of Economic History*, 49(4), 803–832.
- Oatley, T. (1999). How Constraining is Capital Mobility? The Partisan Hypothesis in an Open Economy. *American Journal of Political Science*, 43(4), 1003–1027.
- Osgood, I. (2016). Differentiated Products, Divided Industries: Firm Preferences over Trade Liberalization. *Economics & Politics*, 28(2), 161–80.
- Powell, R. (2004). The Inefficient Use of Power: Costly Conflict with Complete Information. *American Political Science Review*, 98, 02.
- Powell, R. (2006). War as a Commitment Problem. *International Organization*, 60, 01.
- Queralt, D. (2015, June). From Mercantilism to Free Trade: A History of Fiscal Capacity Building. *Quarterly Journal of Political Science*, 10(2), 221–273.
- Queralt, D. (2017, September). Protection Not for Sale, But for Tax Compliance. *International Studies Quarterly*, 61(3), 631–641.
- Reamer, A. (2016). Before the U.S. Tariff Commission: Congressional Efforts to Obtain Statistics and Analysis for Tariff-setting, 1789–1916. In P. R. Bardos (Ed.), *A Centennial History of the United States International Trade Commission*. USITC.
- Rodrik, D. (1998). Why Do More Open Economies Have Bigger Governments? *Journal of Political Economy*, 106(5), 997–1032.
- Rogowski, R. (1990). *Commerce and Coalitions: How Trade Affects Domestic Political Alignments*. Princeton, N.J.: Princeton University Press.
- Rudra, N. (2002). Globalization and the Decline of the Welfare State in Less-Developed Countries. *International Organization*, 56(2), 411–45.
- Ruggie, J. G. (1982). International Regimes, Transactions, and Change: Embedded Liberalism in the Postwar Economic Order. *International Organization*, 36, 02.
- Scheve, K. F., & Slaughter, M. J. (2001). What Determines Individual Trade-Policy Preferences? *Journal of International Economics*, 54(2), 267–292.

Slemrod, J., & Yitzhaki, S. (2002, January). Tax Avoidance, Evasion, and Administration. In A. J. Auerbach & M. Feldstein (Eds.), *Handbook of Public Economics* (Vol. 3, pp. 1423–1470). Elsevier.

Thies, C. G., & Porche, S. (2007). The Political Economy of Agricultural Protection. *The Journal of Politics*, 69(1), 116–127.

Timmons, J. F. (2005, July). The Fiscal Contract: States, Taxes, and Public Services. *World Politics*, 57(4), 530–567.

Wibbels, E., & Ahlquist, J. S. (2011). Development, Trade, and Social Insurance. *International Studies Quarterly*, 55(1), 125–49.