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POLITICAL STASIS OR PROTECTIONIST RUT? POLICY MECHANISMS FOR TRADE REFORM IN A DEMOCRACY

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POLITICAL STASIS OR PROTECTIONIST RUT? POLICY MECHANISMS FOR TRADE REFORM IN A DEMOCRACY

Comments Welcome

Abstract

This paper analyzes the dynamics of trade policy reform under democracy. In an overlapping generations model, heterogeneous agents may acquire skills when young, thereby determining the skill composition of their cohort. Current and anticipated trade policies influence education decisions, and thus the identity of the median voter. We show that there may exist two political steady states: one protectionist and one liberal. Transition from the former to the latter can be achieved by government announcements, temporary educational subsidies, or (exogenous) tariff liberalization by trading partners, but not, in general, by transfer payments to adversely affected workers. We find additionally that reform is politically feasible only if the proposed liberalization is sufficiently large, suggesting that radical reform may be necessary for escaping a "protectionist rut."

JEL Code: D72, E60, F13, F16.

Keywords: dynamic political economy, trade policy, skill acquisition, politically stable policy paths, referenda.

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1 Introduction

Trade liberalization is an inherently dynamic political process, the path to reform characterized by difficult and often unpopular labor market adjustments that may give rise to political foot dragging, or even backsliding. In the presence of populist voter pressure, proposed liberalization programs that commence with great fanfare and optimism may easily (and frequently do) succumb to public backlash. In democratic political environments – which are necessarily subject to constant legislative reevaluation – generational differences, evolving expectations, and different workers' abilities to adapt to changing market conditions surely are paramount in determining the ultimate success or failure of liberalization efforts.

It is particularly surprising, then, that most theoretical accounts of endogenous trade policy limit themselves to static models.[1] Our paper takes a different approach, highlighting the potential importance of voters' future expectations and intergenerational differences in a dynamic political economy model while maintaining a parsimonious analytical structure customary to the trade literature. We develop a two period overlapping generations (OLG) model with endogenous skill acquisition in which agents vote every period on a referendum to adjust the current trade policy or to maintain the status quo. When deciding whether to acquire skills, heterogenous agents within each generational cohort take into account current and expected trade policies, since domestic relative prices determine wages and thus the anticipated return to acquiring skills. The model exhibits a feedback mechanism in which trade policy determines the skill composition of the population - and hence the identity of the median voter - who in turn votes on trade policy.

In the referendum, voters choose between two economic states of the world, a relatively protectionist regime or its more liberal counterpart. Given the population's skill composition at the time of the vote and the expected trade regime in the future, we find

[1] An important empirical exception is a recent paper by Magee, Davidson, and Matusz (2005), who examine the relationship between labor market characteristics and measures of voters' trade preferences. Their paper convincingly articulates an intuitive connection between trade adjustment costs and U.S. congressional campaign contributions, but stops short of developing a formal model.

the potential for multiple *political steady states*, which are defined as economic equilibria under which the median voter would elect to maintain the status quo trade policy. The multiplicity of equilibria obtains because the existing policy regime affects not only the skill acquisition choices of the young generation, but also the identity of the median voter. The more protectionist the existing policy, the greater the unskilled proportion of the older generation (which unambiguously opposes reform), and thus the lower the relative skill level of the median voter among her younger (pivotal) cohort. Intuitively, status quo trade policy enjoys the power of hysteresis through the past skill acquisition decisions of the older generation.[2]

When the model generates multiple political steady states, voters may get stuck in a "protectionist rut" even though the country as a whole would be better off under the more liberal regime, itself a politically sustainable equilibrium. Given that there are potential Pareto gains from freer trade, transition from the relatively protectionist regime to a more liberal policy should be feasible. We show that transition can be achieved by credible policy announcements as well as temporary educational subsidies that tilt the balance towards the more liberal policy path. Traditional trade adjustment assistance through temporary transfer payments, on the other hand, is counter-productive since it adversely affects workers' skill acquisition decisions. Furthermore, we show that the political feasibility of transition increases in the magnitude of the tariff liberalization, and also in the presence of "reciprocal" reforms by trading partners. Radical policy changes, and multilaterally negotiated liberalization steps, thus may be more likely to be approved than small or unilateral reforms.

Our approach and results — though novel to the trade literature — are motivated in part by recent work in macroeconomics. In particular, our approach is similar to that in Hassler, Rodríguez Mora, Storesletten, and Zilibotti (2003) who analyze domestic redistributive policies, and relates to quantitative models by Bassetto (1999), Saint Paul (2001), Krusell and Ríos-Rull (1996), and Krusell, Quadrini, and Ríos-Rull (1996). These authors find, as

[2]This finding is an interesting complement to Fernandez and Rodrik (1991), who demonstrated the potential for "status quo bias" in the presence of voter uncertainty about their future gains or losses from proposed reform. Our model generates the same result under perfect foresight through political interaction across generations.

we do, the potential for multiple equilibria, and the Hassler, Rodríguez Mora, Storesletten, and Zilibotti (2003) model in particular shares the feature that the identity of the current constituency supporting a proposed policy depends on the current policy framework. Ortega (2004) uses a similar approach to analyze the nexus between immigration policy and redistribution, yet skill acquisition is entirely stochastic in his model. Earlier papers that feature a feedback loop between public policy and individual behavior include Glomm and Ravikumar (1995), Saint Paul and Verdier (1997), and Benabou (2000). Our model differs from this earlier work in a number of dimensions; perhaps most notably, intergenerational political frictions in voting are a key element in our model, whereas previous studies assume that the young do not vote, so that the median voter does not have a stake in the future economy.

Though inspired by innovations in dynamic political economy, the present paper relates to a wide body of the trade literature. Our model is reminiscent of the two-period model in Staiger and Tabellini (1987) who analyze the time consistency of trade policy. Maggi and Rodríquez-Clare (1998) and Maggi and Rodríguez-Clare (2006) consider the political economy effects of prior investments – in their case by forward looking firms rather than short lived workers as in our model – on endogenous trade policy. Also similar to our work, McLaren (2002) analyzes the possibility of welfare reducing endogenous policy lock-in in a multi-country setting with preferential trade liberalization. Most recently, Krishna and Mitra (2006) develop a two country median voter model of endogenous trade liberalization; their setting is static, however, and so does not give rise to multiple political equilibria in a unilateral context as ours does. Related in their emphasis on the interaction between worker heterogeneity and trade costs are the careful analyses by Yeaple (2005) and Ohnsorge and Trefler (2004), though both of these papers consider a static framework in which trade policy is exogenous.

In addition, there are important contributions to the trade literature that feature an OLG setup but stop short of endogenizing trade policy. Findlay and Kierzkowski (1983) present an OLG model in continuous time where agents decide on human capital acquisition. Borsook (1987) introduces heterogenous agents in such a framework and Falvey, Greenaway,

and Silva (2007) allow for skill acquisition later in life to analyze the role of age in trade adjustment. Though not a trade paper per se, Eicher (1996) touches on a similar set of issues in his elegant study of the interaction between skill acquisition decisions and endogenous technological innovation in a full OLG framework. Matsuyama (1992) uses a similar setup where agents, whose comparative advantage differs across sectors, decide up-front which sector to enter. Interestingly, his closing sentence advocates future work to analyze the "dynamic formation of commercial policy."

Instead of using a full OLG model, numerous trade studies consider a finite sequence of time periods where heterogenous agents can make decisions. Davidson, Matusz, and Nelson (2005) show that the relative timing of decisions on trade liberalization and compensation can lead to different policy outcomes. Bougheas and Riezman (2005) analyze how the distribution of human capital determines the respective trade policies of two countries. Willmann (2004) shows how the attempt to compensate the losers from liberalization can undermine the gains from trade due to strategic underinvestment in human capital. In a similar spirit, Long, Riezman, and Soubeyran (2007) analyze how trade liberalization affects the acquistion of sector specific human capital.

Dynamic models have also been used to study the labor market aspects of trade policy. Davidson and Matusz (2004) present an OLG model that features a search process to enter the higher value sector, whereas Davidson, Martin, and Matusz (1999) employ a continious time model with infinitely lived agents, and Davidson and Matusz (2006) focus on the transition between steady states. In a similar spirit, Cameron, Chaudhuri, and McLaren (2002), Artuc, Chaudhuri, and McLaren (2003), and Artuc (2006) use dynamic stochastic models of labor movement to study intersectoral adjustment costs facing workers subsequent to trade policy changes. This work lies at the intersection between the trade literature and labor economics, however, and is methodologically distant from the model developed here.

The paper proceeds as follows. Section 2 describes the model and establishes the conditions under which multiple political steady states exist. Section 3 then describes the potential for transition between steady states, focussing first on the role of expectations and

then on active policy prescriptions for inducing reform. Section 4 concludes.

2 A Model of Political Stasis

The model is designed to capture a dynamic environment in which both current and future trade policy influence individuals' skill acquisition decisions and voting behavior. Our approach highlights the importance of current policy in determining both the *existing* skill composition of workers – and thus the identity (not just the policy preference) of the median voter – and the intra- and inter-generational political friction borne of different abilities to adjust between unskilled and skilled work. The model allows formal evaluation of the endogeneity of voters' preferences and choices with current and expected economic conditions, representing how voters populations may evolve in response to changing economic conditions.

Equilibrium in this model has two components: economic and political. We begin in Section 2.1 by defining an economic equilibrium as the skill composition and production levels that would result from an exogenous time path of tariffs; an *economic steady state* is then just the economic equilibrium that would obtain under a constant exogenous tariff level. Section 2.2 then endogenizes the political process to evaluate the existence, properties, and potential multiplicity of Markov perfect political equilibria and *political steady states*. As in Krishna and Mitra (2006) we first develop the model without inclusion of tariff revenue to simplify the analytical exposition. Appendix B demonstrates the robustness of the results to (lump sum) redistribution of tariff revenue.[3]

2.1 The Model Economy

The model consists of a small open economy that may produce, consume, and trade two goods: a skill-based good, S, which requires skilled labor to produce, and a basic good, U, produced using unskilled labor. Let good S be the economy's natural export good.

[3]Redistribution through non-uniform tariff revenue rebates is analytically equivalent to the tax and transfer scheme discussed in Section 3.

Designating U as numeraire, the domestic relative price of good S then is given by $p \equiv \frac{p^w}{\tau}$, where p^w represents the exogenous world relative price and τ is defined as one plus the ad-valorem tariff on the basic good. Both goods are produced under perfect competition with constant returns to scale technologies. There is no uncertainty in the model and borrowing and lending are ruled out.[4]

The economy's population consists of a continuum of agents with *ex-ante* heterogeneous natural abilities and rational expectations with perfect foresight. Agents live for two periods; thus at any point in time, two generations, the 'young' and the 'old', comprise the total population. Every generation is assumed to be the same size, with mass normalized to one. Individuals of each generation are indexed by $a \in [0, 1]$ according to ability level. We assume that within each generation, the distribution of ability levels is uniform over the unit interval; i.e. $a \sim U[0, 1]$. Agent $a = 0$ is the least able of her generation, and agent $a = 1$ the most able.

Every agent is endowed with one unit of labor in each period of life. At birth, each individual chooses either to remain unskilled for her lifetime, or to acquire skills at a constant fixed education cost $c \in [0, 1]$ units of labor. If an agent elects to remain unskilled, she (inelastically) supplies one unit of unskilled labor in each period of her life. If instead she chooses to earn an education, she supplies the $(1 - c)$ units of unskilled labor that remain after paying for education when young, and subsequently $(1 + a)$ efficiency units of skilled labor when old. Comparing the sectoral mobility of both age groups, note that agents are assumed to be free to choose between sectors when young, while they are sectorally immobile when old.[5]

In terms of production technology, we assume an extreme form of factor specificity in the production functions for both goods: the basic good is produced only from unskilled

[4]Given the structure of the model, agents are unable to make binding future commitments to each other, across or within generations. In assuming the voters cannot commit to future political positions or voting behaviors we follow Hassler et al (2003), among others.

[5]Falvey, Greenaway, and Silva (2007) who allow agents to earn an education at any point along a continuous time dimension show that sectoral mobility does decrease in age.

labor and the skill-based good solely from skilled labor.[6] Assuming constant returns to scale and choosing units appropriately, the unskilled wage corresponds to the price of the basic good (normalized to one), and the wage for one efficiency unit of skilled labor corresponds to the price of the skill-based good, denoted by p. Note that this extreme form of factor specificity comes into play only after agents have chosen their factor supply.[7]

An agent will acquire skills only if doing so will maximize her lifetime indirect utility. Preferences are identical across individuals and functionally separable across time. Let each agent's lifetime utility function be given by:

$$U = u(c_u^y, c_s^y) + \beta u(c_u^o, c_s^o), \tag{2.1}$$

where $\beta > 0$ represents the intertemporal discount factor, $c_s^y(c_u^y)$ denotes the individual's consumption of good S (U) when she is young, and $c_s^o(c_u^o)$ her consumption of good S (U) when old. We assume intratemporal utility is a function of current consumption, given by $u(c_u, c_s) \equiv c_s^\alpha c_u^{1-\alpha}$, so that the corresponding within-period indirect utility function is $v(p, I) \equiv Kp^{-\alpha}I$, where $K \equiv \alpha^\alpha(1-\alpha)^{1-\alpha} > 0$, I denotes current nominal income, and $\alpha \in (0, 1)$.

By choice of units, one unit of unskilled labor produces exactly one unit of the basic good, so that the nominal wage to unskilled labor is normalized to one for all agents. From the assumption that one unit of skilled labor by agent a produces $(1 + a)$ units of good S, perfect competition implies that the nominal *skilled* wage to agent a at time t is $(1 + a)p_t$. Thus, as a function of current and (perfectly) anticipated prices, p_t and p_{t+1}, a given agent a will acquire skills only if:

$$v(p_t, 1-c) + \beta v(p_{t+1}, (1+a)p_{t+1}) \geq v(p_t, 1) + \beta v(p_{t+1}, 1). \tag{2.2}$$

From 2.2 and the functional form of the sub-utility function in 2.1 we can define the

[6] Unskilled workers cannot produce skill-based goods, and no established skilled (second generation) worker would revert to unskilled good production as long as the skill premium is positive, which is implied in autarky by the Cobb-Douglas structure of preferences assumed momentarily, and under trade by the assumption that S is the natural export good.

[7] As in Matsuyama (1992) it simplifies the analysis by reducing the dimensionality of the price vector and relieves us of resorting to the Stolper–Samuelson result.

threshold agent, $\hat{a}_t$ under a diversified equilibrium, as the member of the young generation at time t who is just indifferent between remaining unskilled and getting an education, given the discount rate, the cost of education, the preference parameter α, and current and anticipated tariffs:

$$\hat{a}_t(\tau_t, \tau_{t+1}) \equiv \max\left\{0, \frac{\beta + c\left(\frac{\tau_t}{\tau_{t+1}}\right)^{\alpha}}{\beta p^w}\tau_{t+1} - 1\right\}. \tag{2.3}$$

Note that the corner solution in which all agents acquire skills, $\hat{a} = 0$, does not imply a specialized economy (as long as $c < 1$), since all workers are assumed to be unskilled while young. The assumption that the country has comparative advantage in production of the skill-based good ensures that $\hat{a} < 1$.

Based on the critical value in (2.3), we can summarize the educational decisions of any agent as follows:

Proposition 2.1 *An agent of generation t with ability level $a \in [0, 1]$ remains unskilled for life if $a \leq \hat{a}(\tau_t, \tau_{t+1})$, and acquires skills otherwise.*

Because each generation of agents is mapped to the unit interval with a uniform distribution, $\hat{a}$ also equals the proportion of unskilled workers in each generation. For notational convenience, we define an economic equilibrium in terms of the equilibrium proportion of each generation that acquires skills: $\theta_t \equiv 1 - \hat{a}_t$. Output of each good at time t then may be written as a function of the skill composition of the old (generation $t-1$) and the young (generation t). Since the parameters (p^w, β, c, α) are assumed to be fixed and exogenous, we suppress these arguments in definitions hereafter.

Definition 2.1 Economic Equilibrium. *As a function of an exogenous tariff sequence, an economic equilibrium is characterized by the currently young and older generations' skill*

composition and current levels of production over time in each sector so that $\forall t$*:*

$$\theta_t(\tau_t, \tau_{t+1}) = 2 - \frac{\beta + c\left(\frac{\tau_t}{\tau_{t+1}}\right)^{\alpha}}{\beta p^w}\tau_{t+1} \tag{2.4}$$

$$\theta_{t-1}(\tau_{t-1}, \tau_t) = 2 - \frac{\beta + c\left(\frac{\tau_{t-1}}{\tau_t}\right)^{\alpha}}{\beta p^w}\tau_t \tag{2.5}$$

$$q_t^u(\theta_{t-1}, \theta_t) = 2 - \theta_{t-1} - c\theta_t, \tag{2.6}$$

$$q_t^s(\theta_{t-1}) = \int_{\hat{a}_{t-1}}^{1} (1+a)da = 2\theta_{t-1} - \frac{\theta_{t-1}^2}{2}. \tag{2.7}$$

Since the model assumes a small open economy,[8] the definition of an *economic steady state* is trivial. Equilibrium is determined uniquely by the last period, current, and next-period tariffs; thus, if the tariff is fixed (and this is understood by voters), an economic steady state is reached. Formally:

Definition 2.2 Economic Steady State. *The steady state economic equilibrium under a constant, exogenous, tariff level,* τ *is characterized by a constant skill composition across generations and a constant level of production over time in each sector according to:*

$$\theta(\tau) = 2 - \frac{\beta + c}{\beta p^w}\tau, \tag{2.8}$$

$$q_u(\theta) = 2 - (1+c)\theta, \tag{2.9}$$

$$q_s(\theta) = 2\theta - \frac{\theta^2}{2}. \tag{2.10}$$

2.2 The Political Process

We model the political process as a direct democracy over trade policy.[9] At the beginning of each period, every agent in the population – young and old – votes on current trade policy, which subsequently determines the wages and prices for that period. Agents have complete information and perfect foresight when they make their voting decisions. We adopt a binary

[8] The derivation of the autarkic steady state and autarkic steady state price is offered in the appendix.

[9] Other forms of political competition would of course change the analysis considerably, but we argue that the qualitative underpinning of our findings – that there exists a feedback mechanism between economic policy outcomes and endogenous policy decisions that can lead to multiple equilibria and political stasis – would obtain for a broad class of political economy models.

referendum framework;[10] agents can vote either to maintain the status quo tariff policy, τ^o, or to switch to some alternate regime, τ'. The two possible tariff regimes, denoted τ_L and τ_P, are for now taken as given, assumed to be fixed by a third party agenda setter whose objectives are the focus of Section 3. Without loss of generality, let $\tau_L < \tau_P$ and think of the former as the liberal and the latter as the protectionist tariff. We define the *reform step* as $\Delta \equiv \tau^o - \tau'$, so that $\Delta > 0$ represents a trade liberalization from τ_P to τ_L, while $\Delta < 0$ would imply a protectionist shift from τ_L to τ_P. We assume that there is no bureaucratic or time cost of changing tariff regimes.

Trade policy is determined by majority vote. In the case of a tie, we assume that the status quo is maintained. If half or more of the population (mass ≥ 1; recalling that the mass of the total population is 2) votes in favor of the status quo tariff policy the tariff regime remains unchanged and the existing tariff regime is deemed *politically stable*. If instead the majority votes for reform, the tariff switches to the proposed alternative regime immediately. As in any majoritarian voting model, the median voter– hereafter with characteristics denoted by superscript ^{M}– is decisive.

We define a political equilibrium to be any economic equilibrium in which agents' expected time path of tariffs would be maintained endogenously under the existing political process. As in Hassler, Rodríguez Mora, Storesletten, and Zilibotti (2003), we restrict attention to Markov perfect equilibria, requiring that voters' behavior depends only on payoff relevant state variables.[11] In the context of this model, the state variables include the fixed parameters, p^w, β, c, and α, and the existing skill composition of the older generation,

[10] The assumption of a binary referendum framework is less restrictive than it may first appear to be. As demonstrated later in this section, agents in our model have extreme policy preferences– every worker (with the exception of one (zero mass) "indifferent voter") strictly prefers complete protection (autarky) or the free trade (and indeed, import subsidies if possible). Thus, if the median voter was permitted to choose her most preferred tariff (in essence, deciding the structure of the referendum), she would choose one trade policy extreme or the other rather than some intermediate tariff. Since interior tariffs would never be chosen by a median voter, the binary referendum structure we adopt imposes little loss of generality. This issue is discussed further in Section 3.5

[11] By requiring Markov perfect voting strategies, we effectively rule out the potential for stochastic beliefs that can generate sun-spot equilibria. We discuss the potential role of changing beliefs in Section 3.1.

which will determine the identity of the median voter (demonstrated below). Recalling that the skill composition of the older generation at time t is denoted θ_{t-1}, we then have the following:

Definition 2.3 Political Equilibrium. *A Markov perfect political equilibrium is defined by a policy rule, $\tau_t = T(\theta_{t-1})$, where $T : [0,1] \rightarrow \{\tau_P, \tau_L\}$ is a time-invariant mapping from the current skill composition of the older generation to the current voting outcome and $\theta_{t-1} = \theta(\tau_{t-1})$, where $\theta : \{\tau_P, \tau_L\} \rightarrow [0,1]$ is a time invariant mapping from the status quo (last period) tariff to the current skill composition of the older generation such that $\forall t$:*

1. $T(\theta_{t-1}) = \arg\max_{\tau_t \in \{\tau_P, \tau_L\}} V_t^M(\tau_t, \tau_{t+1}; a^M, p^w, \beta, c, \alpha)$ *s.t.* $\tau_{t+1} = T(\theta(\tau_t))$ *and*
2. $\theta_t = \theta(\tau_t) = 2 - \frac{\beta + c\left(\frac{\tau_t}{\tau_{t+1}}\right)^{\alpha}}{\beta p^w}\tau_{t+1}$, *s.t.* $\tau_{t+1} = T(\theta(\tau_t))$.

The first condition requires that the median voter at time t chooses the current tariff $\tau_t \in \{\tau_P, \tau_L\}$ to maximize her lifetime indirect utility, $V_t^M(\cdot)$, with the rational expectation that the next period's tariff will depend on the implied skill composition of the currently young cohort according to the same policy mapping, T. The second condition requires that the skill composition of each cohort is determined in (economic) equilibrium as in (2.4), again subject to the rational expectation that $\tau_{t+1} = T(\theta(\tau_t))$.

We define a *political steady state* to be any economic steady state in which the status quo policy (hereafter denoted by $\tau^o \equiv \tau_{t-1}$) would be maintained endogenously under the existing political process. Thus, a political steady state defined under the referendum structure given by the tariff pair (τ_L, τ_P) is an economic steady state given by (2.8) - (2.10) under *either* initial tariff regime, $\tau^o \in \{\tau_L, \tau_P\}$, in which the median voter would elect to maintain the status quo tariff policy over the competitive equilibrium that would arise under the proposed alternative. Formally:

Definition 2.4 Political Steady State. *A political steady state is reached when $\tau_t \equiv T(\theta(\tau_{t-1})) = \tau_{t-1}$. A political steady state is summarized by the (constant) skill composition of the population under the steady state tariff, $\bar{\tau}$:*

$$\theta(\bar{\tau}) = 2 - \frac{\beta + c}{\beta p^w}\bar{\tau}. \tag{2.11}$$

Our framework provides a straightforward environment for evaluating political equilibria. We begin by arranging both generations of voters over the uniform population interval $[0, 2]$ in weakly ascending order of each individual's preference for trade openness; the most protectionist voters are indexed closest to zero, the most liberal are indexed closest to 2. We can then exploit the structure of the model to characterize the identities of two key voters among the population at any given time: the median voter, whose vote is decisive in the referendum, and the indifferent voter, who separates the population between those who prefer the more protectionist regime, and those who would prefer the more liberal tariff policy. We consider the trade policy preferences of each generation in turn, allowing us to map individuals to the population interval by weakly increasing preference for trade openness.

Older Voters. It is immediate that members of the older generation will be polarized in the trade policy debate. Because older workers are intersectorally immobile, the older unskilled (import-competing) workers have an unambiguous preference for the highest possible tariff (autarky), while all of the older skilled workers prefer the smallest tariff possible. (For semantic convenience we will refer to this as free trade, keeping in mind that it could be a trade subsidy in the absence of a non-negativity constraint on the tariff.) Restating, we have that:

Proposition 2.2 *Among the older generation, political support for the liberal tariff regime is non-decreasing in ability level: the unskilled (lower ability) older agents strictly prefer the protectionist regime, while the skilled (higher ability) older agents strictly prefer the more liberal tariff policy.*

To confirm that the most preferred trade policy by any older worker is necessarily a corner solution, simply note that the indirect utility of older unskilled (skilled) workers is strictly decreasing (increasing) in the local relative price according to:

$$V^{u,o} = v(p, 1) = Kp^{-\alpha}1, \tag{2.12}$$

$$V^{s,o} = v(p, (1 + a)p) = Kp^{1-\alpha}(1 + a). \tag{2.13}$$

Starting from an economic equilibrium at time t in which the skill composition of older workers is given by θ_{t-1}, fraction $(1-\theta_{t-1})$ of the older generation unambiguously favors autarky and thus can be "lined up" on the left-most end of the $[0,2]$ population interval. Likewise, proportion θ_{t-1} of the older generation is unambiguously pro free trade and therefore can be stacked at the top end of the population interval. Accordingly, the younger generation spans the population interval from $[1-\theta_{t-1}, 2-\theta_{t-1}]$. It is immediate that the median voter must be a member of the young generation; by definition, the median voter is the individual at the center of the population interval (namely agent $j=1$) and since $\theta_{t-1} \leq 1$ by definition, the young generation necessarily spans the median of the overall population.

Young Voters. Assessing the trade policy preferences of the pivotal younger generation is somewhat more involved than for the older cohort because, unlike their older counterparts, the young can adjust their educational decisions in response to the current realization of tariff policy. It is still the case that every agent's most preferred tariff will be characterized by a corner solution so that the young generation, like the old, can be divided into those who unambiguously prefer protectionism and those wholeheartedly in favor of free trade. But from there the story is complicated by the endogeneity of the skill acquisition decision. Intuitively, the young agents of each natural ability level can be characterized as either lifetime net producers or net consumers of the basic good, depending on the current and anticipated tariff levels. Members of the former group will favor protectionism (the lower the relative price of the skill-based good, the better) while the lifetime net suppliers of skill-based goods may or may not prefer free trade, depending on the cost of education relative to higher expected wages from freer trade in the second period of life.

A simple observation provides substantial leverage in evaluating both the structure of trade policy preferences among the young generation and the characteristics of political equilibria. Notice that for any fixed future tariff, every young voter would strictly prefer protectionism in the current period.[12] (Recall that all workers are assumed to provide

[12] Under the extreme parametric assumption that $c=1$ such that agents cannot earn wages as unskilled workers when undergoing skill-acquisition process, young future-skilled workers would be indifferent over

unskilled labor in the first period of life regardless of whether or not they undergo training to become skilled workers in the future.) Thus, even a pro-reform young voter would strictly prefer "protection today and free trade tomorrow" to "free trade today and free trade tomorrow." This implies that the *only* reason that a young voter would vote for liberalization in the current period is to influence the voting outcome in the next period.

This universal preference for high tariffs while young (again, holding future tariff policy fixed) allows us to rule out the possibility of a protectionist shift from τ_L to τ_P in political equilibrium, which implies in turn that we can rule out the possibility of temporary deviations from *either* status quo policy.[13] If the median voter expects protection in the future, she would never vote for the liberal regime in the current period; we therefore can rule out the possibility of temporary liberalization in political equilibrium. A similar argument rules out the possibility of temporary protection: if starting from a liberal regime, a young voter at time t expected that she could deviate to protection, then her predecessor at $t-1$ must have anticipated this behavior and voted for protection as well, contradicting the initial assumption a liberal status quo at time t.

Since temporary deviations from the status quo cannot occur in equilibrium, we can reduce young voters' policy preferences to a choice between permanent maintenance of the status quo versus a permanent and immediate shift to the proposed alternate regime. To characterize how trade policy preferences depend on young voters' skill acquisition decisions, we categorize the young generation into three groups: those who would upgrade their skills under either policy regime (the *high ability* agents), those who would educate themselves only under the more liberal policy regime (the *middle ability* agents), and those who would remain unskilled under either regime (the *low ability* agents). Using $\hat{a}_P \equiv \hat{a}(\tau_P, \tau_P)$ ($\hat{a}_L \equiv \hat{a}(\tau_L, \tau_L)$) to denote the ability of the threshold agent under a current and future protectionist (liberal) regime according to (2.3), and recalling that $\hat{a}$ is increasing in τ (the greater the level of import protection, the higher the ability of the threshold agent and the

first-period trade policy (holding second period trade policy fixed).

[13] That is, we can rule out the possibility of political equilibria that include tariff sequences $\tau_{t-1} \to \tau_t = \tau_L \to \tau_P$. The temporary deviation time paths: $\tau_{t-1} \to \tau_t \to \tau_{t+1} = \tau_L \to \tau_P \to \tau_L$ or $\tau_P \to \tau_L \to \tau_P$, are thereby ruled out.

lower the skill composition of the population) so that $\hat{a}_P \geq \hat{a}_L$,[14] the three types of agents are sorted on the generational unit interval as summarized in the following proposition. Figure 1 illustrates.

Proposition 2.3 *For any pair of tariff alternatives, $\{\tau_L, \tau_P\}$, there are three types of of young agents:*

i) **low ability** *agents with ability $a \leq \hat{a}_L$, who would remain unskilled under either constant (current and future) tariff regime, τ_L or τ_P;*

ii) **middle ability** *agents with ability $a \in (\hat{a}_L, \hat{a}_P]$, who would acquire skills under the liberal regime but not under the protectionist regime; and*

iii) **high ability** *agents with $a > \hat{a}_P$, who would acquire skills under either (current and future) tariff regime, τ_L or τ_P.*

The lowest ability members of the young generation are the easiest to evaluate, so we start there. Since these least able workers will remain unskilled under either tariff policy, the low ability agents unambiguously favor protectionism. Thus, we can stack fraction $\hat{a}_L$ of the young generation alongside their older counterparts on the left hand side of the population interval.

The middle ability agents, those with ability levels $a \in (\hat{a}_L, \hat{a}_P]$, will educate only under the expectation of the more liberal tariff regime. The proportion of the middle ability group that supports the more liberal tariff regime (if any) depends on the tradeoff between first period unskilled wages and education cost and second period income. This friction between current and future real earnings does not imply, however, that individually optimal tariffs are interior; quite the opposite, the members of the middle ability group prefer either autarky or free trade depending on prices and parameters (including education cost and the discount factor) and their individual specific ability level. A middle ability

[14] The inequality is weak only in the corner scenario in which all agents would choose to acquire skills under both tariff regimes; i.e. $\hat{a}_P = \hat{a}_L = 0$.

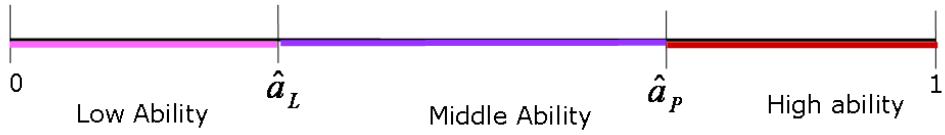

Figure 1: Young Generation Ability Types

agent will vote in favor of the more liberal regime if:

$$\begin{aligned} v(p_P,1)+\beta v(p_P,1) &\leq v(p_L,1-c)+\beta v(p_L,(1+a)p_L) \\ \iff a &\geq \frac{\tau_P^{\alpha}\tau_L^{-\alpha}(1+\beta)-(1-c)}{\beta p^w}\tau_L - 1. \end{aligned} \tag{2.14}$$

This expression demonstrates that the higher ability agents within the group would be the first to support freer trade. This is intuitive; the higher an agent's ability, the higher her skilled wage and hence the greater her expected gains from liberalization.

Interestingly, the highest ability agents of the young generation will not necessarily favor free trade. This ambiguity in trade policy preferences is again driven by friction between unskilled earnings in the first stage of life and skilled earnings in the second period of life. Like the rest of the population, each high ability agent's most preferred trade policy is characterized by a corner solution. A high ability agent $a \in (\hat{a}_P, 1]$ will support the more

liberal regime (τ_L) if:

$$\begin{aligned} v(p_P, 1-c) + \beta v(p_P, (1+a)p_P) &\leq v(p_L, 1-c) + \beta v(p_L, (1+a)p_L) \\ \iff a &\geq \frac{(\tau_P^{\alpha} - \tau_L^{\alpha})}{(\tau_L^{\alpha-1} - \tau_P^{\alpha-1})} \frac{1-c}{\beta p^w} - 1. \end{aligned} \tag{2.15}$$

Thus, we again find that the highest ability agents among the group will be the first in line to support liberalization. The expressions in (2.14) and (2.15) coincide at the border between the high and middle ability groups (where $a = \hat{a}_P$) so that if (2.14) or (2.15) holds with equality for some $a' \in (\hat{a}_L, 1]$, then (2.14) ((2.15)) holds with strict equality for all agents $a \in (a', a^P]$ $(a > a' \cap (\hat{a}_P, 1])$ and is violated for all $a < a'$.

We summarize our findings as follows:

Proposition 2.4 *Among the young generation, the political support for the liberal tariff regime is non-decreasing in ability level;*

i) Low ability agents with $a \in [0, \hat{a}_L)$ strictly prefer the protectionist regime;

ii) of the middle ability agents with $a \in [\hat{a}_L, \hat{a}_P)$, those with individual ability less (greater) than $\tilde{a}_m \equiv \frac{\tau_P^{\alpha} \tau_L^{-\alpha}(1+\beta)-(1-c)}{\beta p^w} \tau_L - 1$ prefer the high (low) tariff,

iii) of the high ability agents with $a \in [\hat{a}_P, 1]$, those with individual ability less (greater) than $\tilde{a}_h \equiv \frac{(\tau_P^{\alpha} - \tau_L^{\alpha})}{(\tau_L^{\alpha-1} - \tau_P^{\alpha-1})} \frac{1-c}{\beta p^w} - 1$ prefer the high (low) tariff.

This proposition implies that the young voters can be indexed over the population interval in increasing ability type. For any initial skill composition of the older generation, θ_{t-1}, then, the young generation can be arranged ascending in ability type over the interval $[1-\theta_{t-1}, 2-\theta_{t-1}]$ of the population support $[0, 2]$. Based on this ordering we can identify and compare, first, the indifferent agent who separates the protectionists from the free-traders and, second, the median voter.

The Indifferent Voter. We define the indifferent voter to be the (zero mass) individual who separates the population between the protectionists and the free traders. It is clear that the indifferent voter is neither a member of the young low ability type nor of the

older generation, since all of these individuals strictly prefer autarky or free trade. The indifferent voter therefore must be a member of the young generation in either the middle or high ability groups. Using $\tilde{a}$ to label the ability level of this delineating individual, we note that if the indifferent voter is a middle ability type so that $\tilde{a} \in (\hat{a}_L, \hat{a}_P]$, then she is the agent for whom:

$$\tilde{a}_m = \frac{\tau_P^{\alpha}\tau_L^{-\alpha}(1+\beta)-(1-c)}{\beta p^w}\tau_L - 1. \tag{2.16}$$

Alternatively, if the indifferent agent is a member of the high ability group, her identity is given by:

$$\tilde{a}_h = \frac{(\tau_P^{\alpha}-\tau_L^{\alpha})}{(\tau_L^{\alpha-1}-\tau_P^{\alpha-1})}\frac{1-c}{\beta p^w} - 1. \tag{2.17}$$

For any quadruple of parameter values, (β, c, α, p^w) and pair of tariff alternatives, (τ_L, τ_P), then, the system of equations (2.16)-(2.17) pins down the indifferent voter:

Proposition 2.5 *The indifferent agent is a young voter of middle or high ability. If* $\tilde{a}_m \in [\hat{a}_L, \hat{a}_P)$*, she is a middle ability agent and if* $\tilde{a}_h \in [\hat{a}_P, 1]$*, she is high ability.*

Notice that because the indifferent voter is young, her identity is independent of the status quo tariff policy or the skill composition of the older generation.

The Median Voter. Since fraction $1 - \theta_{1-t} \leq 1$ of the older generation is protectionist and the young voters are mapped to the population interval increasing in ability type, the identity of the median voter is immediate:

Proposition 2.6 *The median voter at time t is the member of the young generation with ability level* $a_t^M \equiv a^M(\tau_{t-1}, \tau_t) = \theta_{t-1}$*. Furthermore, the median voters is of lower ability under protectionism than under the liberal regime:* $a^M(\tau_P, \tau_P) < a^M(\tau_L, \tau_L)$*.*

The identity of the median voter therefore depends on both the status quo and realized contemporary tariff regimes through the skill composition of the older generation. As one might expect, the ability level of the median voter is decreasing the measure of older

unskilled workers $(1-\theta_{t-1})$; the greater the vested interest in a high tariff among the older generation, the more difficult it will be to implement tariff liberalization, since only a small proportion of the young vote is needed to block a proposed reform. Conversely, the greater the skill composition of the older workers, the higher the ability of the median voter and the better the chance for the liberal regime. Figure 2 summarizes.

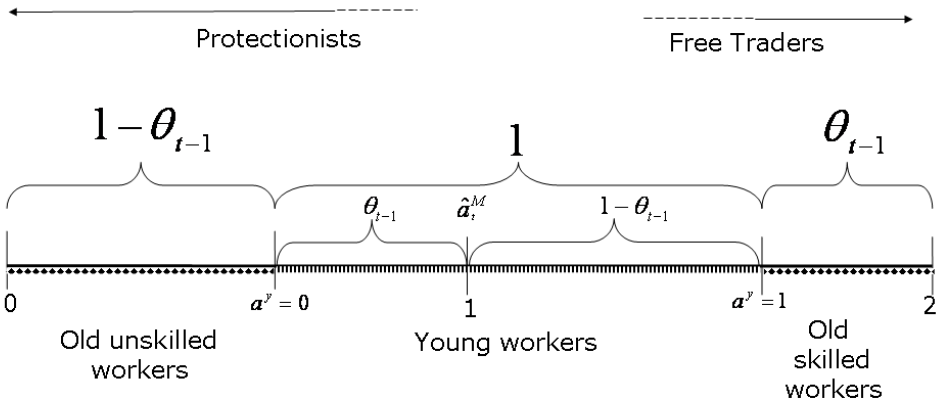

Figure 2: The Population Interval by Trade Policy Preference

2.3 Political Equilibria

We evaluate the existence of political equilibria by comparing the relative position of the median and indifferent voters on the population interval. If the the indifferent voter lies to the left of the median voter, then the median voter will favor free trade and thus vote in the liberal regime; if instead the indifferent voter lies to the right of the median voter, the protectionist regime will succeed in the referendum. The key is to recognize that under rational expectations and individually optimal skill acquisition decisions, the identity of

the median voter depends on both the status quo and *realized* tariff regimes according to Proposition 2.6. In contrast, the identity of the indifferent voter is independent of the status quo tariff, pinned down on the population interval for any pair of tariff alternatives by $\tilde{a}(\tau_L, \tau_P)$.

For any pair of possible tariff regimes, τ_L and τ_P, the equilibrium skill composition of the older generation can take three possible values: $\theta(\tau_P, \tau_P)$, $\theta(\tau_L, \tau_L)$, or $\theta(\tau_P, \tau_L)$, depending on the status quo and current tariff policy.[15] Following Proposition 2.6, there are then three possible median voters identified on the population interval: the young agents with ability $a^M(\tau_P, \tau_P)$, $a^M(\tau_P, \tau_L)$, and $a^M(\tau_L, \tau_L)$. From (2.4), we verify that $a^M(\tau_P, \tau_P) < a^M(\tau_P, \tau_L) < a^M(\tau_L, \tau_L)$; intuitively, the ability level of the median voter will be lowest when the older generation makes its skill acquisition decisions under the expectation of lifetime protectionist trade policy, and highest when older workers anticipate a lifetime of freer trade. For any set of parameter values and tariff alternatives, the position of the the indifferent voter among these potential median voters determines the set of political equilibrium possibilities. There are three important cases to consider, which we characterize as follows:

Proposition 2.7 *Depending on the relative position of the indifferent and median voters over the young generation interval, there are three possibilities:*

i) $a^M(\tau_L, \tau_L) < \tilde{a}$*: the steady state with* $\tau_t = \tau_P \forall t$ *is the unique politically stable equilibrium.*

ii) $\tilde{a} < a^M(\tau_P, \tau_P)$*: the steady state with* $\tau_t = \tau_L \forall t$ *is the unique politically stable equilibrium.*

iii) $a^M(\tau_P, \tau_P) \leq \tilde{a} \leq a^M(\tau_L, \tau_L)$*: both steady states,* $\tau_t = \tau_P \forall t$ *and* $\tau_t = \tau_L \forall t$*, are politically stable equilibria.*

[15] Recall that $\theta(\tau_L, \tau_P)$ can be eliminated immediately from the discussion of political equilibria, pursuant to the discussion on page 15, which rules out the possibility of a protectionist shift from τ_L to τ_P in any political equilibrium.

The first two are simple but relatively uninteresting scenarios in which the unique political equilibrium is characterized by a political steady state under either τ_L or τ_P. First, if the indifferent voter lies to the right of all three potential median voter ability levels so that *every* potential median would voter favor the protectionist regime, the unique political equilibrium is characterized by the political steady state under τ_P according to (2.11). The second possibility is the opposite extreme in which the median voter lies to the left of all three potential median voters such that political steady state under τ_L the unique political equilibrium. These possibilities are depicted in Panels A and B in Figure 3.

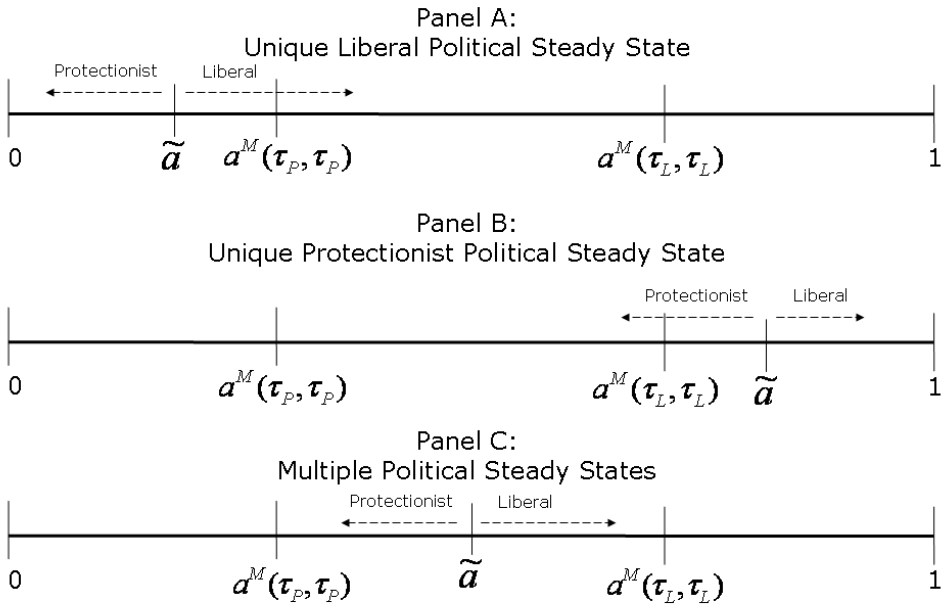

Figure 3: Political Steady States

The focus of this paper is of course the intermediate possibility in which the indifferent voter lies between the median voter that would obtain under either steady state tariff policy (i.e. $\tilde{a}(\tau_L, \tau_P) \in [a^M(\tau_P, \tau_P), a^M(\tau_L, \tau_L)]$ as in Panel C of Figure 3) so that there exist multiple political steady states; starting from a protectionist status quo the median voter would vote to maintain protection, while starting from the liberal status quo policy, the median voter would vote to maintain the lower tariff.

The case of multiple political steady states consists of two possible scenarios– in the first, $a^M(\tau_P, \tau_P) < a^M(\tau_P, \tau_L) < \tilde{a}(\tau_L, \tau_P) < a^M(\tau_L, \tau_L)$; in this instance, the two political steady states are the only forms of political equilibria.[16] The remaining case in which $a^M(\tau_P, \tau_P) < \tilde{a}(\tau_L, \tau_P) < a^M(\tau_P, \tau_L) < a^M(\tau_L, \tau_L)$, permits a third, belief-driven, possibility in which the time path of trade policy is characterized by a single transition from the protectionist regime to freer trade; starting from a protectionist status quo, voters can rationally expect reform to occur in the next period because the induced median voter in the next period, $a^M(\tau_P, \tau_L)$, would indeed favor the liberal regime. It should be emphasized, however, that this potential for "organic" reform in is *not* consistent with Markov perfect political equilibrium without some exogenous (and payoff-relevant) spark to induce a shift in beliefs the period before liberalization occurs.[17] To see this, consider a candidate political equilibrium time path of tariffs characterized by a (one time) transition from the protectionist regime to the liberal tariff at time T. In a Markov perfect equilibrium, the $T-1$ generation's beliefs about next period tariffs must be identical to the beliefs of generation $T-2$ since the payoff-relevant state variables are identical at the time of each generation's birth (before T). Thus, the *only* Markov perfect equilibrium possibilities are political steady states, as specified in Proposition 2.7.

2.4 Existence of Multiple Political Steady States

The conditions under which multiple political steady states can obtain depends on parameter values and the choice of tariff alternatives τ_L and τ_P. A few simple observations characterize the set of possibilities. Figure 4 illustrates.

Notice first that the fraction of skilled workers under a protectionist steady state, $\theta(\tau_P, \tau_P)$, must be less than the fraction of skilled workers under the relatively liberal steady state, $\theta(\tau_L, \tau_L)$, because $\tau_L < \tau_P$ by assumption and θ is strictly decreasing in the

[16] The median voter that would obtain if the older generation had voted for protection when young but expected liberalization in the second stage of life, $a^M(\tau_P, \tau_L)$, would favor protection– thus generating a contradiction.

[17] The potential government role in spurring belief-induced reform is discussed further in Section 3.1.

(steady state) tariff according to (2.8); thus, it must be true that $a^M(\tau_P, \tau_P) = \theta(\tau_P, \tau_P) < a^M(\tau_L, \tau_L) = \theta(\tau_L, \tau_L)$, ruling out the shaded region in Figure 4. Second, note that if less than half of the population is skilled under even the more liberal tariff regime, so that $a^M(\tau_P, \tau_P) < a^M(\tau_L, \tau_L) < \frac{1}{2}$, then the median voter under *either* initial tariff regime must be a member of the low ability group so that τ_P can be the only political steady state in region IV of Figure 4. Conversely, if more than half of the population would be skilled under even the more protectionist regime, so that $\frac{1}{2} < a^M(\tau_P, \tau_P) < a^M(\tau_L, \tau_L)$ as in region I of Figure 4, the indifferent voter under either initial tariff regime must necessarily be a member of the high ability group. This does not, imply, however, that there are necessarily multiple political steady states or even that the more liberal regime is a steady state, since even high ability voters may be protectionists (for example, if β is very small). Finally, if $a^M(\tau_P, \tau_P) < \frac{1}{2} < a^M(\tau_L, \tau_L)$ there are two possibilities, both of which may (but need not) give rise the multiple equilibria. First if $a^M(\tau_P, \tau_P) < 1 - a^M(\tau_L, \tau_L)$ as in region III, the median voter starting from τ_P (τ_L) will be a member of the low skill (medium skill) group so that τ_P will definitely be one steady state, but τ_L may or may not be politically stable as well. Alternatively, if $a^M(\tau_P, \tau_P) > 1 - \hat{a}^M(\tau_L, \tau_L)$ as in region II, the median voter starting from τ_P (τ_L) will be a member of the middle skill (high skill) group so that τ_L, τ_P, or both may be politically stable.[18]

The question that arises, then, is if the economy is in a "bad" equilibrium from national welfare maximization standpoint – a protectionist rut characterized by the political steady state under τ_P – whether and how it can transition to the more liberal steady state under τ_L. The answer is the focus of the next section, which explores the possibility of different mechanisms for transitioning between steady states.

3 Transition Mechanisms

In asking how a protectionist political steady state can be be escaped, we effectively assume the existence of a third party agenda setter whose objective is national welfare maximization

[18] We have confirmed that each of the regions depicted in Figure 4 is non-empty for some reasonable set of parameters.

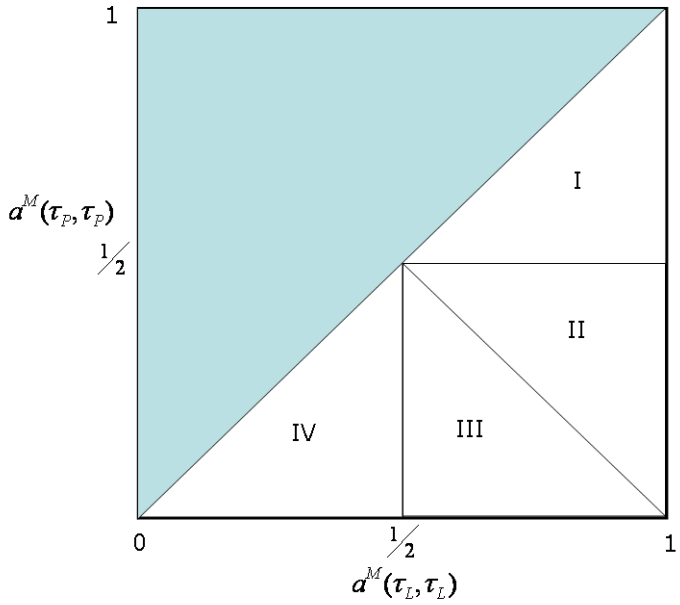

Figure 4: Potential Multiple Equilibria

– i.e. trade liberalization. It is understood that the cause of transition out of steady state must lie outside of the political process modeled so far, as the median voter under the protectionist regime – once she is in place – has no interest in such a change. We argue that our conceptual framework with a third party agenda setter is a reasonable approximation to the political structure observed in many democracies, particularly in the determination of trade policy. It is often the case that a few political elites — frequently un-elected — define the structure of political platforms or the design of ballot referenda to be put forward to the voting public. Indeed, this agenda setting extends beyond the populist vote to the halls of representative democracy. In the United States, for instance, fast track negotiating authority grants the President (who ostensibly represents the welfare objectives of the country as a whole) the right to design the structure of proposed trade agreements, each of which is subsequently sent to Congress (composed of heterogeneous district and state representatives) only for the final up or down referendum.

3.1 Announcements and Organic Political Change

Political stability hinges on agents' expectations over future trade policy. In particular, if the economy is caught in the protectionist steady state, the high tariff regime is perpetuated by agents' self-fulfilling beliefs that the same regime will still be in place next period. And it is this very belief that leads to skill acquisition decisions and a subsequent skill composition which in turn bring about a median voter next period who decides to keep in place this regime. One possibility to break away from this vicious circle is to alter agents' expectations over future trade policy. If young workers anticipate freer trade in the future, they will upgrade their skills accordingly. This anticipatory skill upgrading will in turn increase the skill composition of the older generation in the next period and thus the future constituency in favor of liberalization.

Notice that if the potential future constituency supporting free trade is sufficiently large, an "organic" political shift from a protectionist steady state to a liberal steady state is possible in political equilibrium, contingent on an exogenously induced shift in agents' beliefs. To see this, suppose that $\tilde{a}(\tau_L, \tau_P) \in [a^M(\tau_P, \tau_P), a^M(\tau_L, \tau_L)]$ so that both steady states are political equilibria. Then, if starting from a protectionist steady state at time $t-1$, enough members of the then-young generation would upgrade their skills under the expectation of more liberal trade at time t so that $\theta_{t-1} = \theta(\tau_P, \tau_L) = a^M(\tau_P, \tau_L) > \tilde{a}(\tau_L, \tau_P)$, the expectation of freer trade at time t is rational so that such an "organic" equilibrium transition from the protectionist regime to the liberal steady state marks a third form of political equilibrium in addition two the two steady states, as stated in the following proposition:

Proposition 3.1 *If $a^M(\tau_P, \tau_P) \leq \tilde{a}(\tau_L, \tau_P) \leq a^M(\tau_P, \tau_L)$ and $\tau_t = \tau_P$ for all $t \leq T$, then an exogenous change in beliefs of the young in period T from expecting protection to expecting the liberal regime in period $T+1$ leads to a transition from the protectionist steady state to the liberal steady state from period $T+1$ onward.*

At the same time, however, the assumption of Markov perfection implies that agents' beliefs must be intertemporally stable; that is, agents cannot simply wake up one day with new beliefs about the future. And so the question becomes how expectations can be altered

to bring about reform. Forces that can bring about a change in anticipated future policy could be new actors from either outside or inside the country itself. Inside actors could be elder statesmen or political pundits weighing in on trade policy or politicians' announcements of anticipated future trade deals. Outside actors could be foreign governments pushing for multilateral trade talks or applying political pressure for reform cast as "inevitable". Even the popular press could bring about changes in beliefs – and thus reform – without changing the parameters underlying the model simply by suggesting that change is on the horizon.[19]

In practice, the credibility of announcements will play an important role in shaping expectations about the future, even if organic political reform is possible. We would expect that an outside actor seeking to induce a shift in expectations would most likely need to rely on a commitment device, such as an international treaty unless she possesses a form of inherent credibility.[20] See Staiger and Tabellini (1987) for more complete discussion of mechanisms for enhancing government credibility.

3.2 External Terms of Trade Changes

The political support for trade reform depends in large part on the skill composition of the population, which in turn is determined - apart from trade policy - by the terms of trade, so far taken as given. A favorable shift in the country's terms of trade, by increasing the relative price of the export good, makes skill acquisition more profitable and therefore leads to a higher proportion of the population acquiring skills. By lowering the critical ability level, it changes the identity of the median voter: her ability level is higher the more favorable the terms of trade, as there are fewer unskilled individuals among the old who oppose liberalization. At the same time, a change in the terms of trade has no first order

[19] Markov perfection requires that beliefs are based on payoff-relevant state variables, so such a change in beliefs must be predicated on some "real" change in the state of the world. A vanishingly small lump sum tax $\epsilon \to 0$ would serve such purpose of changing state variables to free the belief structure without meaningful secondary effects.

[20] While a senior representative from Vermont would be unlikely to convince voters of any impending change, even a few casual words from a former Federal Reserve Chairman may convey the necessary gravitas to immediately shift voters' beliefs.

effect on the identity of the indifferent agent among the young. Thus:

Proposition 3.2 *An exogenous improvement in the terms of trade increases the political support for trade liberalization.*

Among the many forces that could shift a country's terms of trade, we are especially interested in trade policy decisions taken by trading partners. Suppose a large trading partner liberalizes trade, for example by lowering the import tariff on the skill-intensive good that the country under consideration exports to its partner. This unilateral liberalization on part of the partner country will result in a favorable shift in the home country's terms of trade. As outlined above the change in the terms of trade shifts the window of median voters to the right. And as the median voters are of higher ability and more pro-trade, the liberalized regime tends to become politically stable (if it was not), the transition equilibrium becomes feasible, and the protectionist regime loses political stability.

This positive correlation between unilateral trade policy decisions by large trading partners opens up the possibility of multiple equilibria in a non-cooperative international trade policy game. The reason is that trade liberalization on part of the other country makes domestic liberalization politically feasible, and vice versa.[21] Such a multiplicity of equilibria in the international context comes in addition to the inherent multiplicity of equilibria that our model exhibits in a purely unilateral context. Indeed, the latter is among the key novelties of our model, as we demonstrate the potential for multiple equilibria even for small countries without any change in the terms of trade.[22]

3.3 Trade Adjustment Assistance: Temporary Education Subsidies

Another mechanism, apart from changing beliefs, to affect the skill composition and thereby the decision on trade policy lies in altering directly the economic calculations that determine the skill acquisition decision. The obvious way to influence this decision in the desired way is to subsidize the acquisition of skills. This can be achieved by enacting a subsidy to

[21] This mechanism has been pioneered by Krishna and Mitra (2005) and Krishna and Mitra (2006).

[22] We are grateful to Devashish Mitra for emphasizing this point.

education that reduces the cost of acquiring skill and is financed by a poll tax. By tilting the balance in favor of skill acquisition, such a subsidy will improve the skill composition of the cohort and — if sufficiently substantial — bring about a median voter who favors trade liberalization. Note that once we have moved towards the new free-trade steady state, the subsidy could be abolished if,as in the case of multiple political steady states, the new liberal steady state is politically stable even without the subsidy.

Formally, let $s \in [0, c]$ denote the (gross) subsidy paid to every young agent who decides to acquire skills, which reduces the cost of doing so from c to $c - s$. This subsidy must be funded and a balanced budget on part of the government implies that the poll tax required to do so amounts to $t = \frac{s}{2}\hat{\theta}_t$. Taking this into account, equation (2.2) that governs the skill acquisition decision has to be modified as follows:

$$v(p_t, 1 - (c - s) - t) + \beta v(p_{t+1}, (1 + a)p_{t+1} - t) \geq v(p_t, 1 - t) + \beta v(p_{t+1}, 1 - t), \qquad (3.1)$$

where it has been assumed that the agent expects the policy to be in place for the two periods of her lifetime.[23] This results in the following modified critical ability level:

$$\hat{a}_t(\tau_t, \tau_{t+1}) \equiv \frac{\beta + (c - s)\left(\frac{\tau_t}{\tau_{t+1}}\right)^{\alpha}}{\beta p^w}\tau_{t+1} - 1. \qquad (3.2)$$

Clearly, the education subsidy decreases the critical ability level and thus increases the proportion of the cohort that decides to acquire skills. Note that the poll tax itself does not directly influence the education decision as it has to be paid whether one acquires skills or not.

Similar to the analysis in the baseline case, the skill acquisition decision determines the identity of the median voter among the young, via the skill composition of the old generation. In particular, the identity of the median voter in steady state is given by:

$$a_t^M(\tau_{t-1}, \tau_t) \equiv \hat{\theta}_{t-1}(\tau_{t-1}, \tau_t) = 2 - \frac{\beta + (c - s)\left(\frac{\tau_{t-1}}{\tau_t}\right)^{\alpha}}{\beta p^w}\tau_t \qquad (3.3)$$

As before the ability level of the median voter is decreasing in the steady state tariff level because a higher tariff leads to more support for protection among the old. At the same

[23] Note that this assumption can be relaxed. Assuming the subsidy to be in place for one period would only alter the value of the tax ,which has no effect on the skill acquisition decision.

time, the education subsidy reduces the support for protection by increasing the number of skilled older workers. Correspondingly, the median voter's ability level is increasing in the education subsidy.

We now draw attention to how the education subsidy affects the identity of the indifferent voter. As before, we have to distinguish two cases: the case where the indifferent voter acquires skills under both regimes and the case where she decides to acquire skills only when the tariff is low.[24] In the first case, the identity of the indifferent voter takes the form:

$$\tilde{a}_m = \frac{\tau_L^\alpha(1-c+s-(1+\beta)t_0) - \tau_P^\alpha(1-c+s-(1+\beta)t_1)}{\beta(\tau_P^\alpha p_1 - \tau_L^\alpha p_0)} - 1. \tag{3.4}$$

In the second, it is:

$$\tilde{a}_h = \frac{\tau_L^\alpha(1+\beta)(1-t_0) - \tau_P^\alpha(1-c+s-(1+\beta)t_1)}{\beta p_1} - 1. \tag{3.5}$$

How does the education subsidy affect these identities? Differentiating with respect to the subsidy s and taking into account the government's budget constraint, it is straightforward to show that $\tilde{a}_2'(s) < \tilde{a}_1'(s) < 0$. We thus have:

Proposition 3.3 *A poll-tax funded education subsidy $s > 0$ has the political effects*

$$\partial\tilde{a}_m/\partial s < \partial\tilde{a}_h/\partial s < 0 < \partial a^M/\partial s$$

and thus increases (decreases) the political viability of the liberal (protectionist) steady state regime.

We see that whereas the ability levels and hence the identities of the respective median voter under each steady state increase with the education subsidy, the reverse happens to the indifferent voter. This increase in the ability level is more pronounced in the second case, as the indifferent voter acquires skills no matter what in the first case so that we have only second order effects. This opens up the possibility that the ability level of the indifferent voter falls below the identity of the median voter in the protectionist steady

[24] Note that the case where the indifferent voter never acquires skills (i.e. is of low ability) still cannot arise; indeed, the education subsidy tends to increase every agent's incentive to acquire skills.

state. When this happens, the protectionist regime becomes politically unstable implying the the education subsidy will cause a transition from the protectionist to the more liberal regime with the ensuing welfare benefits overall. Figure 5 illustrates:

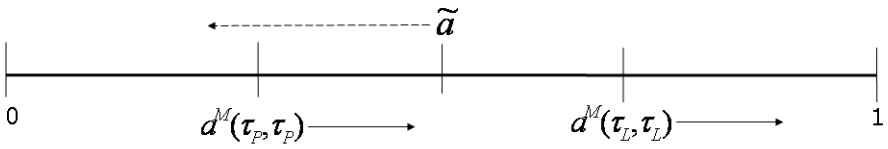

Figure 5: The Effect of Education Subsidies

It is important to note the less desirable side-effect of education subsidy on the (net of transfers) wage gap between skilled and unskilled workers: because all workers are taxed to pay for the education subsidy, the lowest ability workers who will remain unskilled even in the presence of a subsidy are taxed at the expense of their higher ability contemporaries. The tariff liberalizing benefit of blanket educational subsidies thus should be weighed against the concomitant increase in income inequality between low and high ability agents. But as pointed out above, once transition has occurred the education subsidy can as well be abolished provided that the indifferent voter has a lower ability level than the median in the liberalized steady state without the education subsidy. The implied increase in income inequality therefore would be temporary also.

Taking a moment to relate the just derived results to the analysis in the earlier subsection on announcements and beliefs, note that the identity of the median voter in a transitional period, $a^M(\tau_P, \tau_L)$ also moves to the right according to the general equation (3.3) above. Even if the indifferent agent does not lie to the left of the median voter under protectionism, she could find herself to the left of the transitional median voter, $a^M(\tau_P, \tau_L)$. This indicates that a combination of education subsidies and announcements can be successful even if the education subsidy is not sufficient to render the protectionist steady state politically unstable on its own. And again, the subsidy can be abolished in this scenario once transition has been achieved.

3.4 Trade Adjustment Assistance: Transfers

Among the most commonly found policy supplements to trade reform in developed countries are compensation schemes that partially offset the losses faced by workers who are adversely affected from trade liberalization. Unlike the transition mechanisms discussed thus far, which appear to be suitable means to achieve freer trade, transfer programs designed to compensate the losers from trade liberalization turn out to be counter-productive. This result is particularly striking given that unemployment compensation or wage "top ups" are a prominent component of most countries' existing trade adjustment assistance (TAA) programs.

In order to compensate workers in import competing sectors, TAA transfer programs must tax the winners from trade reform. In our context, this implies that transfers depress the skill premium since the economy is assumed to hold comparative advantage in the skill-based good. Similar to the educational subsidies analyzed above, this changes the economic profitability of skill acquisition, but now in the opposite direction. Skill acquisition becomes less attractive under such a policy and this makes trade liberalization even harder to achieve politically, even though the trade adjustment component makes it appear more palatable at first sight.

Formally, suppose the unskilled old receive a subsidy s per person as soon as trade

liberalization is enacted.[25] To balance the budget the government needs to raise taxes and it does so by introducing a poll tax of t to be paid by the skilled.[26] Modifying the model accordingly, we can derive the new critical ability level for skill acquisition:

$$\hat{a}_t(\tau_t, \tau_{t+1}) \equiv \frac{\beta(1+s+t) + c\left(\frac{\tau_t}{\tau_{t+1}}\right)^{\alpha}}{\beta p^w}\tau_{t+1} - 1. \tag{3.6}$$

Clearly, the subsidy s and the tax t have to satisfy the government budget constraint, $\hat{a}_{t-1}(\tau_{t-1}, \tau_t)s = (1 - \hat{a}_{t-1}(\tau_{t-1}, \tau_t))t$, where we note that the cut-off ability level reflects the skill composition of the older generation. Substituting the budget constraint and totally differentiating, we obtain the following effects on the transitional critical ability level:

$$\frac{\partial \hat{a}(\tau_P, \tau_L)}{\partial t} = \frac{1}{\hat{a}(\tau_P, \tau_P)p_{t+1}} > 0; \tag{3.7}$$

and similarly, the steady state critical ability level under the liberalized regime:

$$\frac{\partial \hat{a}(\tau_L, \tau_L)}{\partial t} = \frac{1 + t/(\hat{a}(\tau_L, \tau_L)^2 p_{t+1})}{\hat{a}(\tau_L, \tau_L)p_{t+1}} > 0; \tag{3.8}$$

whereas the critical ability level under steady state protectionism remains unchanged as no compensation ever takes place. Accordingly, the median voter under the liberal steady state is now of a lower ability type, as — less pronounced — is her transitional counterpart, whereas the median voter under the protectionist steady state is of the same type as without transfers. In other words, the respective median voters tend to move left, contrary to our results for the education subsidy.

We turn now to the indifferent agent. If she is a member of the medium ability group, she is characterized by

$$\tilde{a}_m = \frac{\tau_P^{\alpha}\tau_L^{-\alpha}(1+\beta) - (1-c)}{\beta p^w}\tau_L - 1 + \frac{t}{p^w}\tau_L. \tag{3.9}$$

Alternatively, if she belongs to the high ability group, she is of ability level

$$\tilde{a}_h = \frac{(\tau_P^{\alpha} - \tau_L^{\alpha})}{(\tau_L^{\alpha-1} - \tau_P^{\alpha-1})}\frac{1-c}{\beta p^w} - 1 + \frac{t\tau_L^{\alpha}}{\tau_L^{\alpha-1} - \tau_P^{\alpha-1}}. \tag{3.10}$$

[25] The unskilled young cannot expect such a payment as they still have the option to acquire skills.

[26] Note that the skilled with relatively low ability actually lose from trade liberalization. However, trade adjustment programs typically do not make this distinction, basing compensation on employment status rather than overall worker welfare.

It is clear that both possible indifferent agents move to the right, i.e. are now of a higher ability type.

Given that the median voters under the transitional equilibrium and especially under the liberal steady state move left, and the indifferent agents move right, we conclude that the political feasibility of trade liberalization diminishes:

Proposition 3.4 *Trade adjustment assistance to the unskilled workers in the older generation, financed by a poll-tax t, has the political effects*

$$\partial a^M(\tau_L, \tau_L)/\partial t < \partial a^M(\tau_P, \tau_L)/\partial t < 0 < \partial \tilde{a}_m/\partial t < \partial \tilde{a}_h/\partial t$$

and thus decreases (increases) the political viability of the liberal (protectionist) steady state regime.

Transfer augmented trade liberalization might not be politically stable at all, even if without transfers liberalization would have been, or it might not be reachable by a shift in beliefs only. That is, we have the perverse effect that transfers, though seemingly appealing, actually render trade liberalization more difficult or even impossible to achieve.

3.5 Radical Reform

This section explores a different thought experiment, asking whether there are preconditions on the structure of a liberalization referendum necessary for reform to be possible – or conversely, if starting from a liberal policy regime, there exist some forms of protectionist proposals that necessarily would induce the economy to revert to protectionism. As discussed earlier, we are effectively asking how a third party agenda setter (not the median voter) could influence the extant and future political steady state by altering the structure of referendum proposals.

From the analysis in Section 2.2 it is clear that the existence of any political steady state depends not only on the status quo tariff, but also on the alternative regime, since the identity of the indifferent voter (and hence implicitly the trade preferences of the median voter) depend on the pair of tariff alternatives; i.e. $\tilde{a} \equiv \tilde{a}(\tau_L, \tau_P)$. The policy question is

then: starting from a given regime, which proposed tariff alternatives (if any) would ensure that the status quo is maintained as the unique political steady state, which would lead to an unambiguous regime shift by making the status quo politically unstable, and which referendum alternatives would admit the already much discussed possibility of multiple equilibria? We assume that the referendum must be structured as a choice between the status quo and some alternative regime,[27] and we refer to a proposed tariff alternative as "reform" if it decreases the tariff and as "entrenchment" otherwise.

Perhaps surprisingly, we find that the best way to block reform (apart from offering entrenching tariff proposals) is to propose a relatively minor tariff liberalization. Starting from a protectionist steady state, a tariff liberalization referendum is sure to fail for a sufficiently small reform step, since (tautologically) $\lim_{\tau' \to \tau_P} a^M(\tau_P, \tau') = a^M(\tau_P, \tau_P)$. That is, the median voter who would obtain if voters rationally expected a shift from the protectionist regime to the alternative regime is vanishingly close to the status quo protectionist median voter, as the reform step converges to zero.

Proposition 3.5 *There exists a sufficiently small critical reform step size Δ such that the status quo tariff τ_P is politically stable against any alterntive tariff $\tau' < \tau_P$ if $\tau_P - \tau' < \Delta$.*

One way to see the point is in Figure 4. Suppose for example that $a^M(\tau_P, \tau_P) \leq \frac{1}{2}$, and that, for some initial tariff alternative, $\tau' < \tau_P$, $\theta(\tau', \tau') = a^M(\tau', \tau',) \geq \frac{1}{2}$ so that the initial tariff proposal may admit multiple political steady states under Region II or III. Decreasing the reform step by decreasing Δ then causes $a^M(\tau', \tau')$ to move left, toward $a^M(\tau_P, \tau_P)$, eventually pushing the economy into Region IV where the only political steady state is the protectionist regime.

Figure 6 offers an alternative demonstration using a numerical example to evaluate

[27] Alternative assumptions both would be inconsistent with the nature of referenda (almost always a choice about whether or not to adopt a policy change), but also would yield uninteresting results. (The agenda setter could ensure a political shift simply by making the two prosed regimes different from the status quo (and vanishingly similar), and could maintain the status quo simply by offering the degenerate "choice" between the status quo and itself.)

the range of tariff liberalization proposals that admit multiple steady states.[28] Given an initial benchmark protectionist regime, τ_P, and set of parameter values (α, β, c, p^w), we can derive the identities of both the median and the indifferent voters among the young generation as a function of the proposed tariff alternative, τ.[29] Focussing on the case of tariff reform, we assume that $\tau \leq \tau_P$.[30] For values of the tariff alternative at which $\tilde{a}(\tau_P, \tau) > a^M(\tau, \tau)$ (the median voter under the proposed liberal regime would favor protectionism), the unique political steady state will be the protectionist regime. Alternatively, proposed tariff alternatives under which $\tilde{a}(\tau_P, \tau) < a^M(\tau, \tau)$, support two political steady states – both the proposed alternative and the protectionist status quo.

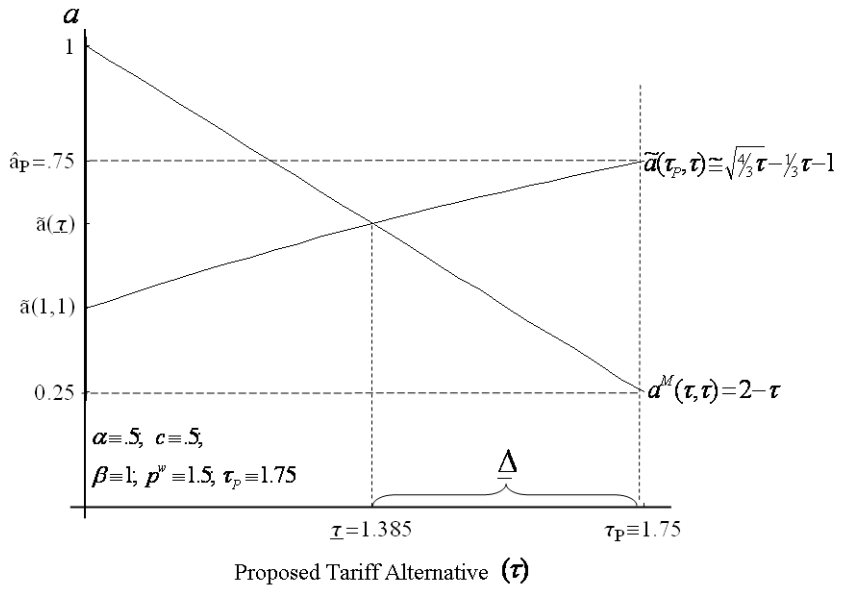

Figure 6: Minimum Reform Step

[28] We thank Devashish Mitra for suggesting this form of graphical representation.

[29] For the purposes of demonstration and ease of calculation, we set $\alpha \equiv .5, c \equiv .5, \beta \equiv 1, p^w \equiv 1.5$, and $\tau_P = 1.75$.

[30] We note that the alternative case of tariff entrenchment is simply the inverse of the scenario discussed herein.

It is immediate that there exists a range of tariff reform proposals, $\tau \in (\underline{\tau}, \tau_P)$ that are too modest to admit even the possibility of reform, since they are not themselves politically stable. Conversely, more radical tariff reform proposals – those with a reform step greater than $\underline{\Delta}$ – are politically stable and therefore permit the potential for reform through the policy channels identified in earlier subsections. Intuitively, since voters' preferences are unambiguously protectionist or pro free trade, no voter would strictly prefer a small reform to radical reform; there are no moderate voters (except the zero-mass indifferent voter), only two extremist voter blocks. Reducing the magnitude of the reform step therefore serves only to decrease the potential consistency of skilled workers who would favor liberalization.

Our finding that radical reform may be necessary to generate the political support for tariff reform parallels the similar finding by Krishna and Mitra (2006) whose intuition applies equally in this context: because voters' political allegiances depend on their (net lifetime) sectoral orientation, and are monotonically increasing in the relative price of the good in which they have comparative advantage, a *big* shift in the proportion of the population employed in the export oriented (skill-based) sector is necessary to generate political support for reform. But while in their model, shifting workers' sectoral orientation requires exogenous changes in terms of trade, this section demonstrates that (potential) political support for tariff reform can be generated by sufficiently radical liberalization proposals.

4 Conclusion

This paper evaluates the dynamic political economy aspects of tariff reform in the presence of populist politics. The model is designed in such a way to capture (*i*) a dynamic environment, specifically the potential influence of current policy on the identity (not just the policy preferences) of the median voter, (*ii*) the political frictions both within and across generations borne of different abilities to adjust to changing economic conditions, and (*iii*) the endogeneity of voters' preferences and choices with current and expected economic conditions. Populations can and do evolve in response to economic conditions, even in the presence of myopic preferences; this paper constructs a simple model to evaluate how and

why these changes can (and sometimes do not) occur.

We find that multiple political steady states may exist within an economy, and thus, that voters can potentially get stuck in a protectionist rut despite that aggregate welfare would be higher under a more liberal tariff regime. A series of thought experiments and comparative statics exercises demonstrate that the multiplicity of political equilibria can be broken through a number of third party induced changes. We discuss several potential mechanisms for escaping the protectionist rut: announcements of future policy commitments (for instance, preferential trade agreement talks) that change young voters' beliefs about the future; terms of trade improvements triggered by trading partners' unilateral tariff reforms; temporary education subsidies that reduce the cost of skill acquisition and thus increase the political constituency in favor of open markets; and structuring referenda to put forward substantial reform packages rather than minor policy changes. We also find, perhaps provocatively, that transfer payments to negatively impacted workers in the import-competing sectors will reduce the potential for reform unless they are carefully constructed in such a way that they do not influence young workers' skill acquisition decisions.

There are a number of promising extensions to be pursued in subsequent research. From a theoretical perspective, it would be interesting to move away from the restricted set of Markov perfect equilibria to explore the further the role of beliefs and sun-spot equilibria. Empirically, cross country panel studies could explore the potential influence of variations in educational access, cost, and education, differential voter turnout across generations, and welfare programs on the success of trade reform and public ratification of regional integration agreements. Finally, one could envision formal policy analysis of the optimal structure of the trade adjustment assistance (TAA) programs focussed on generational differences that would offer transfer payments to "buy out" old unskilled workers, while offering only education subsidies to younger, less able, workers.

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A1 Autarkic Equilibrium

The autarkic equilibrium price, p^a, and skill composition of the older generation, $\theta(p^a)$, are given implicitly by the pair of equations:

$$p^a(\theta) = \frac{\alpha}{1-\alpha}\frac{2-\theta(1+c)}{2\theta-\frac{\theta^2}{2}}; \tag{A1.1}$$

$$\theta(p^a) = \min\left\{1, \max\left[0, 2-\frac{\beta+c}{\beta p^a}\right]\right\}. \tag{A1.2}$$

Where the first expression is derived from the market clearing condition,[31] and the second equation pins down the equilibrium skill composition according to (2.8) and under the

[31] i.e. $q^s(p^a) = d^s(p^a) \Rightarrow q^s(\theta(p^a)) = \frac{\alpha}{p^a}\left[p^a q^s(\theta(p^a)) + q^u(\theta(p^a))\right] \Rightarrow p^a = \frac{\alpha}{1-\alpha}\frac{q^s(\theta(p^a))}{q^u(\theta(p^a))}$.

boundary conditions that by definition $0 \leq \theta \leq 1$. Solving yields the parametric form of the (interior) autarkic price:

$$p^a = \frac{\alpha\beta c + \sqrt{((1-\alpha)c + \beta(1+\alpha(1+c)))^2 - 2\alpha\beta((1-\alpha)c + \beta(1+\alpha(1+2c)))}}{2(1-\alpha)\beta}. \quad \text{(A1.3)}$$

Notice that the Cobb-Douglas preference structure (with $\alpha \in (0,1)$) ensures that the economy will be diversified in autarky. Thus, we know that $\theta(p^a) > 0$ so that the lower boundary condition on θ will not bind. It is possible, however, to reach a corner solution in which $\theta(p^a) = 1$; even if every agent is skilled in the second period of life, the young generation will produce a positive quantity of the unskilled good as long as $c < 1$. The corner solution at $\theta(p^a) = 1$ will obtain if $\frac{\alpha}{1-\alpha} \geq \frac{3}{2}\frac{\beta+c}{\beta(1-c)}$; that is, every worker will upgrade her skills under autarky for sufficiently high values of α (strong preference for the skill-based good) or β (a low discount rate). Conversely, the boundary condition is certain *not* to bind in the limit as $c \to 1$.

A2 Tariff Revenue

This appendix investigates how the paper's results are affected by the collection and redistribution of tariff revenue. As is customary in the literature, we assume that in each period tariff revenue is distributed uniformly among the members of the population. Denoting the aggregate tariff revenue at time t by R_t, this implies that each agent alive at time t receives a demogrant of $r_t = R_t/2$.

It is clear that uniform redistribution of tariff revenue will not affect individuals' skill acquisition decisions. To see this, note that equation (2.2) has to be augmented with the inclusion of tariff revenue as follows:

$$v(p_t, 1-c+r_t) + \beta v(p_{t+1}, (1+a)p_{t+1} + r_{t+1}) \geq v(p_t, 1+r_t) + \beta v(p_{t+1}, 1+r_{t+1}). \quad \text{(A2.1)}$$

Evaluating the inequality, the tariff revenue payments cancel immediately, since the marginal utility of income is constant under Cobb-Douglas preferences. Thus, we have that every agents' skill acquisition decision– and hence the identity of the median voter– is independent of the (uniform) tariff revenue rebate, r_t.

The tariff revenue rebate clearly does carry important implications for individuals' preferences over trade policy, as the payment generally will vary with the tariff. We can solve the modified model to generate the following expression for the per capita tariff rebate as a function of the ad-valorem tariff and skill composition of the population:

$$r_t = \frac{1}{2}(\tau_t - 1)\frac{\alpha c\theta_t + (2(1-\alpha)\frac{p^w}{\tau_t} + \alpha)\theta_{t-1} - \frac{1}{2}(1-\alpha)\theta_{t-1}^2\frac{p^w}{\tau_t} - 2\alpha}{1-(1-\alpha)(\tau_t - 1)} \tag{A2.2}$$

Tautologically, tariff revenue is zero under a free trade regime ($\tau = 1$). Likewise, as the tariff approaches the prohibitive level, tariff revenue must again fall back to zero. But within the intermediate range of positive, non-prohibitive tariffs, revenue is a positive and concave function of the tariff: starting from free trade, revenue at first increases with the tariff until the revenue maximizing tariff is reached, and then revenue falls with the tariff approaching the prohibitive level.

Returning to our main analysis, a choice between any two tariff regimes entails a change in tariff revenue that can be positive, negative, or possibly zero. This revenue effect will in general change the identity of the indifferent voter, although it does not affect the identities of the respective median voters as noted earlier.

Consider, for illustration, a case in which tariff revenue is lower for τ_L than for τ_P.[32] The loss in tariff revenue that accompanies liberalization (or the forgone increase in revenue from maintained liberalism) – which we did not consider in the main text – makes τ_L somewhat less attractive relative to τ_P and therefore increases the ability level of the indifferent voter relative to the case in which tariff revenue is discarded. This rightward shift in $\tilde{a}$ may jeopardize the political stability of the liberal regime while strengthening the stability of the more protectionist tariff. And indeed, if both tariff regimes constituted political steady states when ignoring tariff revenue, it is possible that uniform redistribution of the collected tariff receipts could completely undercut the political stability of the liberal regime so that the τ_P would constitute the unique political steady state.

In sum, while the redistribution of tariff revenue in general will influence the identity of the indifferent voter within the population and thus the potential multiplicity of political

[32] Normative economics would suggest that this case is the more relevant, in which liberalization brings a concomitant loss in tariff revenue. Note that the opposite case is simply the mirror image.

steady states given any set of exogenous parameter values, it does not change the qualitative conclusions of the main text.

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