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A Theory of International Boycotts

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A Theory of International Boycotts

Abstract

Calls to boycott a foreign country aim to push a share of domestic consumers to cut their consumption of goods imported from the targeted country. How do boycotts differ from sanctions? Should boycotters target all of the country's products, or should they focus on a restricted set of sectors? I answer these questions in a canonical Ricardian model. The model allows me to determine the optimal targeted boycott strategies and trace out the Pareto frontier of the domestic boycotters' and foreign country's welfare.

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A Theory of International Boycotts

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1 Introduction

In the sphere of international trade and geopolitical relations, international boycotts have emerged as a tool of market influence, akin in some respects to government-imposed sanctions and tariffs. While sanctions and tariffs are top-down approaches, often used by governments to exert political or economic pressure, boycotts represent a direct form of market influence, reflecting the collective choices of individual consumers in the global marketplace.

International boycotts, as a form of consumer activism, raise several questions: How do international boycotts impact firms and a nation? Are there differences between the effects of boycotts and those of government-imposed sanctions or tariffs? What efficiency and equity considerations are at stake in consumer-led market interventions?

Historically, boycotts have been used to address social and political concerns, underscoring the relevance of these issues. Economists, however, have not given extensive attention to this form of market influence. This paper aims to study the economics of international boycotts in a neoclassical Ricardian framework à la Dornbusch et al. (1977). To my knowledge, this is the first treatment of consumer boycotts from the perspective of neoclassical economics.

In my model, home and foreign country firms produce and export a continuous set of differentiated goods ranked in decreasing order of relative productivity or comparative advantage for the home country. An exogenous share of domestic consumers choose not to consume a set of foreign-produced goods. These boycotters are faced with a strategic dilemma: namely, whether to pursue a full boycott targeting all of the country's products or a more focused boycott tactically aimed at specific companies or industries. A full boycott might hurt the foreign country's welfare but risks being costly to the domestic boycotters, while a targeted boycott offers precision at the expense of broader impact. The equilibrium in this model is determined by the relative productivity curve and the balance of trade, which pin down the relationship between the relative wage at home and a cutoff that delimits the patterns of trade for regular domestic and foreign nonboycotters (below which the home country exports and above which it imports), while the set of boycotted goods are produced domestically for the consumption of home country boycotters.

Through the lens of this model, I identify the most effective ways to implement targeted boycotts and the optimal set of boycotted goods for a given level of tolerated welfare in the foreign country. Should domestic boycotters target goods that the foreign country is the best at producing? Should they rather target goods near the trade barrier? When are targeted boycotts more effective?

I find that, under a full boycott, by some home country consumers, the foreign country's consumers lose relative to the case without boycott while domestic consumers win through better terms of trade for the home country's regular consumers. An increase in the share of boycotters reallocates expenditure toward domestic goods and shifts the trade balance in favor of the home country (i.e., shifts the balanced trade curve leftward). The equilibrium relative wage of domestic workers increases, and the trade equilibrium cutoff decreases (i.e., the set of home country exported goods shrinks). The home country gains not only because its import prices fall but also because it can further specialize in the production of goods in which it has comparative advantage. Further, full boycotts are qualitatively and quantitatively different from sanctions. Sanctions make the foreign country's exports more expensive and shift the relative productivity curve, while boycotts keep the relative productivity curve unchanged. Since tariffs are rebated to domestic households, this reallocation shifts the balanced trade curve slightly to the left. These two forces on net lead to an increase in the relative wage of home consumers and a decrease in the range of goods imported from the foreign country (in contrast to the increase in that range in the case of boycotts). In addition, I find that boycotts are increasingly effective in reducing the foreign country's welfare as there are no decreasing returns to scale.

I find that, for any given level of tolerated utility in the foreign country, the optimal targeted boycott set covers goods for which domestic productivity relative to foreign productivity falls below a certain cutoff. The marginal change in the boycotters' welfare for a given decrease in the foreign country's welfare captures the slope of the Pareto frontier. An increase in the boycott cutoff yields a marginal decrease in the foreign country's welfare. Home boycotters lose from consuming more expensive domestic goods but gain from receiving higher relative wages. The loss from consuming more expensive domestic products is proportional to the elasticity of the expenditure share on boycotted goods that is shifted to domestic goods with respect to the relative wage. Targeted boycotts are therefore more effective when this elasticity is smaller. I find that as the share of boycotters rises, targeted boycotts become increasingly effective.

I examine other dimensions of boycotts and capture them within my framework. Even though most of my analysis considers Cobb–Douglas preferences, my results generalize to the case with CES preferences. With heterogeneous price elasticities of substitution, it would be optimal to boycott goods close to $\overline{j}$ in relative productivity and substitutable with other goods since consumers find it easier to switch to alternative products with a higher elasticity of substitution relative to that of other goods if they decide to boycott. Political salience or animus toward a specific firm can be another motivation for boycotts of firms irrespective of the country where they operate. I can capture these motives in my framework and show that they spill over to other firms and affect the trade equilibrium. If home boycotters shun more goods that the home country imports, then their boycott improves the terms of trade for the home country, while it harms the terms of trade if they shun more goods that the home country exports. Finally, I study strategic retaliation by the foreign country and show that it gives rise to a prisoner's dilemma game akin to a trade war. Utilitarian governments, however, will choose not to boycott. Therefore, it is difficult to motivate boycotts purely from internal equity arguments, and motivations such as those that I present in Section 2 are needed to rationalize the boycotts observed in practice.

1.1 Literature Review

A burgeoning literature is devoted to considering the effects of economic sanctions. Albrizio et al. (2022) study the possible repercussions of Russian sanctions for Europe, highlighting potentially significant drawbacks. Itskhoki and Mukhin (2022) further expand on this topic by analyzing how various types of sanctions influence exchange rates. Clayton et al. (2023) provide a framework to analyze various geoeconomic issues.

Turning to broader global contexts, Dizaji and van Bergeijk (2013) employ a vector autoregressive analysis to assess the impacts of sanctions during the 2007–2011 period. Bianchi presented three studies on sanctions in 2023: Bianchi and Sosa-Padilla (2023c) focuses on the effects of sanctions on international debt, Bianchi and Sosa-Padilla (2023b) shows how sanctions might weaken the US dollar, and Bianchi and

Sosa-Padilla (2023a) offers a summary of these works. Etkes and Zimring (2015) examine the welfare and productivity effects of the Gaza Strip blockade from 2007 to 2010. Hatipoglu and Peksen (2018) study how sanctions can undermine the stability of banking systems.

Morgan et al. (2014) contribute a comprehensive dataset of all sanctions from 1945 to 2005. Neuenkirch and Neumeier (2015) investigate the impacts of UN and US sanctions on various countries during the 1976–2012 period, finding that the damage can last a decade and can amount to up to 25% of GDP per capita and 5% of GDP growth. Oechslin (2014) critiques the effectiveness of sanctions in spurring political change, suggesting limitations in their utility. Splinter and Klomp (2022) provide an analysis of different types of sanctions on GDP growth, while Becko (2022) examines the terms-of-trade effects of sanctions. Finally, Wang et al. (2019) study 23 countries over the 1996–2015 period, finding that sanctions significantly affect exchange rate volatility, adding another layer of complexity to the economic consequences of sanctions.

The literature on consumer boycotts, in contrast, features few canonical economic analyses and rather consists of case studies examining consumer motivations and some outcomes of boycotts. Friedman's (1991; 1995) works lay the groundwork by defining boycotts and conducting qualitative analyses of price-rise boycotts in the 20th century.

A significant portion of the literature on boycotts focuses on consumer motivation. Abdul-Talib and Adnan (2017) study the willingness to boycott. Abosag and Farah (2014), Al-Hyari et al. (2012), and Muhamad et al. (2019) delve into religious motivations for boycotts. Albrecht et al. (2013) propose a unified model for understanding these motivations. Hong and Hwang (2020) estimate the strength of various motivations, John and Klein (2003) offer a theoretical analysis of these motivations, and Klein et al. (2004) identify factors contributing to boycott engagement. Shin and Yoon (2018) and Tyran and Engelmann (2005) provide both theoretical and empirical analyses of boycott motivations, while Makarem and Jae (2016) explores the causes of boycotts through Twitter sentiment analysis.

Boycott outcomes are another area of focus. Chavis and Leslie (2009) examine

the boycott of French wine because of France's opposition to the Iraq war, estimating significant sales losses. Delacote (2009) theorizes on the ineffectiveness of boycotts, while Hendel et al. (2017) study the Israeli cottage cheese boycott of 2011, noting a 30% loss of demand and changes in prices and elasticities post-boycott. Hong et al. (2011) and Luo and Zhou (2020) analyze Chinese boycotts of French and Japanese cars, respectively, noting substantial negative effects on sales. Mirza et al. (2020) assess the Pakistani boycott of French products in 2015, finding little impact on product judgment, brand image, and loyalty. Davidson et al. (1995) and Pruitt and Friedman (1986) discuss the significant market reactions and value drops in target firms following the announcement of boycotts. Sun et al. (2021) provide a differing perspective on the Chinese boycott of Japanese cars in 2012, highlighting a variance in switching and cancellation rates and an impact on advertising effectiveness.

2 Facts on Consumer Boycotts

Boycotts are not novel: the word itself derives from the eponymous Captain Charles Boycott, an English estate manager who in 1880 was the target of a campaign by the local Irish community during the "Irish land war". Hines (1997) cites the Megarian Decree as an example of an early boycott by Athens. Friedman (1995) shows us that grassroots and organized consumer boycotts are not a recent phenomenon. In his work, he documents numerous examples of consumer boycotts, starting from the 1902 meat boycott, which was reported to have caused a drop in meat price of 30%, to the coffee boycott of 1976, where consumers and retailers worked together to achieve a reduction in the wholesale price of coffee, which was achieved in 6 months. However, because of the limited data existing at the time of his research, Friedman (1995) draws only qualitative conclusions on the topic of boycotts.

Even though international boycotts of a country rather than specific firms that can operate both domestically and internationally are my main topic of interest here, I do document that boycotts can impact prices and real economic activity. Section 5.2

studies specific firm boycotts, and concrete evidence on the effectiveness of boycotts can be found in Pruitt and Friedman (1986) and Davidson et al. (1995). The former studies the effects of consumer boycotts on the stock prices of 21 corporate firms in response to the boycotts they suffered at varying times during the 1970s. The latter examines a larger sample (59 firms), covering the mid-1970s to 1991, to study the effects of boycotts on the firms' behavior and stock price. Both find that stock prices react negatively to announcements and starts of boycotts, while the end of a boycott has no significant impact. Overall, Pruitt and Friedman (1986) quantify the losses in market value of the targeted firms at on average more than $120 million over the two-month post-announcement period.

As internet access proliferated in the 2000s, so did boycott initiatives. However, as Koku (2012) explains, most internet-originated boycotts have little to no impact. However, some consumer boycotts did manage to grow in size and achieve their results—a prime example being the boycott of Nike following the accusations of poor working conditions in its supply chain (Fung et al., 2001). In 2000, the boycott caused its revenues to fall by 16% and its share price to drop by 57%, prompting Nike to commit to independent social audits across its supply chain.

In the 2000s, "surrogate" boycotts intensified. Such boycotts are motivated not by misconduct of the targeted firm but by geopolitical or ideological tensions: a firm is treated as a surrogate of its host country. By their nature, these boycotts affect mostly imported goods. Usually, they are a spontaneous initiative of offended citizens. Examples of how geopolitical conflicts can spur consumer-led boycotts include the resurgent calls for boycotts of firms in and doing business with Israel during the Israel–Gaza war and, again, the US boycott of French wine following France's opposition to the Iraq war. For this latter case, researchers have estimated an overall sales decrease of $112 million (13% of previous sales) and a peak of 26% during the first 2 weeks of the boycott (Ashenfelter et al., 2007; Chavis and Leslie, 2009; Pandya and Venkatesan, 2016). Other prominent examples that have drawn scholarly attention are the boycotts of American products during the Iraq war, which had a significant negative impact on sales prod-

ucts usually associated with the US in Arab countries (Clerides et al., 2015), and the Arab League's religious boycotts of Danish products in 2005 and French products in 2015. Regarding the latter cases, Ammitzbøll and Vidino (2007) report that the 2005 boycott had no negative consequences for the Danish economy, and Mirza et al. (2020), focusing on the effects of the 2015 boycott on brand image and product judgment for the targeted firms, concludes that the events did no harm to Pakistani consumers' view of the quality of French products.

In some cases, government branches have been shown to be supportive of consumer boycotts. Bohman and Pårup (2022) argue that there is evidence of state involvement in almost one-third of all Chinese consumer boycotts. Most boycotts are connected to political events: Hong et al. (2011) analyze the boycott of the French automotive sector after French president Nicolas Sarkozy expressed support for Tibet in 2008, which caused the market share of French automobile brands in China to fall 25–33%.[1]

Heilmann (2016), Luo and Zhou (2020), and Sun et al. (2021) study the boycott following the Senkaku Islands dispute and conclude that it caused a sales decrease of over 50%. Chinese boycotts sometimes target individual firms, usually after statements opposing the national government: for example, Bohman and Pårup (2022) extensively describe the H&M boycott, and Shi and Wei (2023) discuss the boycott of Cathay Pacific Airways. In such cases, the boycotts have a high success rate: Bohman and Pårup (2022) show that more than 50% of the targeted firms issued a public apology to the Chinese government and the population.

3 Model

I construct my theoretical framework based on the Dornbusch et al. (1977) model of international trade and study the role of consumer boycotts.

[1]Figure A0 in Appendix F illustrates the change in French exports to China during this boycott.

3.1 Environment

Two countries, namely, Home (H) and Foreign (F), engage in trade over a continuum of goods indexed by $j \in [0, 1]$.

Production: The model's production side is characterized by a single input, labor l, with a production function that exhibits a constant marginal product of labor for each good j. This marginal product is country specific, with $z_H(j)$ for Home and $z_F(j)$ for Foreign. Home's productivity in producing good j relative to Foreign's is given by $Z(j) = \frac{z_H(j)}{z_F(j)}$. Goods j are ordered such that the relative productivity of Home is decreasing. Total labor endowments are denoted by l_H and l_F for Home and Foreign, respectively, and labor moves freely across the production of different goods j within a country. Markets are perfectly competitive, and labor is the sole determinant of production costs, leading to equilibrium wages w_H and w_F in the Home and Foreign countries, respectively.

I distinguish regular consumers at Home or in the Foreign country, who do not participate in the boycott, and domestic boycotters, who boycott goods from the Foreign country.

Regular Consumers: Regular consumers in both countries derive utility from a diverse set of goods irrespective of provenance, and their preferences are represented by a Cobb–Douglas utility function, expressed as:

$$U(\mathbf{q}) = \int_0^1 s(j) \log(q^i(j)) dj \tag{1}$$

where $q^i(j)$ denotes the quantity of good j consumed by a regular consumer in country i and $s(j)$ signifies the expenditure share on good j, which sums to 1 across all goods. I denote as $S(j) = \int_o^j s(j')dj'$ the fraction of income spent on goods with index value below j, with $S(1) = 1$. The budget constraint of regular consumers in country $i \in$

$\{H, F\}$ is:

$$\int_0^1 p(j)q^i(j)dj = w_i l_i \tag{2}$$

where $p(j)$ is the equilibrium world price of good j.

Consumer Boycotters: An exogenous share λ of domestic consumers derive utility from the same Cobb–Douglas utility function but choose a set of Foreign goods to boycott $\mathcal{J}_B$:

$$U^B(\mathbf{q}_H^B, \mathbf{q}_F^B) = \int_0^1 s(j) \log(q_H^B(j) + q_F^B(j)\mathbf{1}\{j \notin \mathcal{J}_B\})dj \tag{3}$$

The boycotters' budget constraint is:

$$\int_0^1 p_H(j)q_H^B(j)dj + \int_{\complement\mathcal{J}_B} p(j)q_F^B(j)dj = w_H l_H \tag{4}$$

where $q_H^B(j)$ (respectively, $q_F^B(j)$) is the quantity of good j produced by Home (respectively, Foreign) and consumed by a boycotter, $p_H(j)$ is the Home price for goods bought at Home and $\complement\mathcal{J}_B$ is the set of nonboycotted goods. By boycotting a set of Foreign goods that would not have been produced at Home otherwise because of Home's lack of comparative advantage, consumer boycotters can create demand for these to be produced domestically, albeit at a less competitive price $p_H(j)$. A full boycott of Foreign goods corresponds to $\mathcal{J}_B = [0, 1]$.

3.2 Full Boycott Equilibrium

In this section, I study the properties of a full boycott equilibrium, where domestic boycotters refrain from including any Foreign-produced goods in their consumption.

The model predicts trade patterns based on comparative advantage driven by relative productivity levels $Z(j)$. A key object of the model is the relative wage of Home vs. Foreign workers $\omega = w_H/w_F$. As in the standard Dornbusch et al. (1977) model,

there exists an indifference good $\bar{j}$, such that goods with an index below this cutoff are produced by Home and goods with an index above it are produced by Foreign (to serve both Foreign and regular domestic customers).

The equilibrium allocation of labor to each good, the determination of the range of goods traded, and the resultant welfare implications for each country can be derived from the model's conditions. In particular, I compare the equilibrium with the one resulting from sanctions.

Proposition 1. *A larger full boycott ($\lambda \uparrow$) increases the relative wage of Home workers $\omega \uparrow$ and increases the set of Foreign-produced goods $\bar{j} \downarrow$. Domestic regular consumers' welfare increases, while the welfare of the Foreign country decreases. Specifically, the marginal welfare changes are:*

$$\frac{dU^F}{d\lambda} = -S(\bar{j})\frac{d\omega}{\omega d\lambda} \leq 0 \tag{5}$$

$$\frac{dU^H}{d\lambda} = (1 - S(\bar{j}))\frac{d\omega}{\omega d\lambda} \geq 0 \tag{6}$$

where the marginal equilibrium wage change is:

$$\frac{d\omega}{d\lambda} = \frac{\omega}{1-\lambda}\left(1 - \frac{\frac{s(\bar{j})\omega}{S(\bar{j})(1-S(\bar{j}))}}{\frac{s(\bar{j})\omega}{S(\bar{j})(1-S(\bar{j}))} - Z'(\bar{j})}\right) \tag{7}$$

and domestic consumer boycotters obtain autarky welfare.

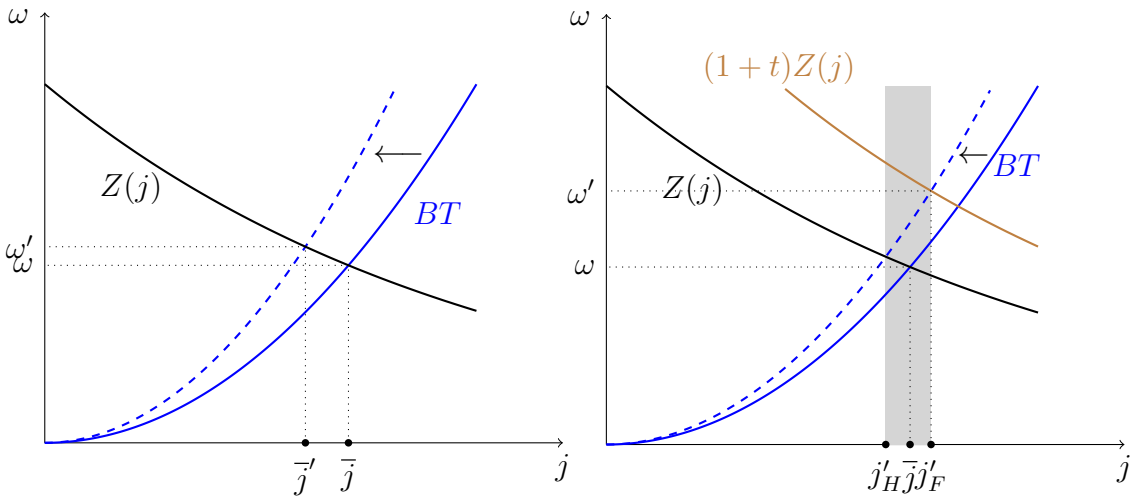
Proof. See Appendix A. □

This proposition states that, under a full boycott, Foreign consumers lose while domestic consumers win through better terms of trade for Home regular consumers than in the case without boycott. An increase in the share of boycotters λ reallocates expenditure toward domestic goods and shifts the balanced trade (BT) curve defined by (8) to the left (see Figure 1).

$$\omega = \frac{1}{1-\lambda} \cdot \frac{S(j)}{1-S(j)} \cdot \frac{l_F}{l_H} \tag{8}$$

The equilibrium relative wage of domestic workers increases, and the trade equilibrium cutoff decreases. Home gains not only because its import prices go down but also because it can further specialize in the production of goods in which it is particularly advantaged.

The effects of full boycotts are qualitatively and quantitatively different from those of sanctions. We can think of sanctions in the model with only regular domestic and Foreign customers (no boycotters) as a tariff t on Foreign exports q_F such that the domestic price of Foreign goods is $p_H(j) = p(j)(1 + t \cdot q_F)$ and revenues are rebated lump-sum to domestic consumers.[2] Figure 1 illustrates the full boycott equilibrium and the sanctions equilibrium in my model. First, in the right-hand panel, sanctions make



Full Boycott Equilibrium Sanctions Equilibrium

Figure 1: Difference between an increase in boycotter share (left) and an increase in import sanctions (right). An increase in the boycotter share λ shifts the BT curve to the left, and the equilibrium trade cutoff $\bar{j}$ (relative wage of Home workers ω) decreases (increases). An increase in import tariffs t, on the other hand, shifts the relative productivity curve for imports to the right, and the transfers of collected tariffs lead to a slight leftward shift of the BT curve. Home exports goods $[0, j'_H]$, and Foreign exports $[j'_F, 1]$. The equilibrium relative wage of Home workers is higher; however, there is no trade in the shaded region.

Foreign exports more expensive and shift the relative productivity curve (for Foreign

[2]In general, I can consider sanctions as nonlinear tariffs $t(q_F)$ capturing a mixture of taxes and quotas and show that equilibrium can be implemented with a linear tax under complete information. Here, I present the case with linear tariffs for ease of exposition.

exports) according to $\omega = (1+t)Z(j)$, while boycotts keep the relative productivity curve unchanged. Since tariffs are rebated to domestic households, this shifts the balanced trade curve slightly to the left. These two forces on net lead to an increase in the relative wage of Home consumers and a decrease in the range of goods imported from Foreign for sanctions (in contrast to the increase in that range in the case of boycotts). The sanctions equilibrium features a set of nontraded goods $[j'_H, j'_F]$, while the full boycott equilibrium features only a shift from the trade cutoff and relative wage from $\left(\bar{j}, \omega\right)$ to $\left(\bar{j}', \omega'\right)$.[3]

The correct intuition for consumer boycotts is, however, the economics of transfers when tastes differ geographically. The boycotters' income that would have been allocated to Foreign exports $\lambda w_H l_H S(\bar{j})$ can be interpreted as a unilateral transfer from Foreign to Home. Now, since these transfers would be consumed on domestic goods because of the difference in tastes between boycotters and Foreign consumers, this shifts to the left the BT curve (and only the BT curve). Next, I analytically derive the comparative statics of the welfare of Foreign and Home regular consumers. For log utility, the marginal welfare change is convex in the share of boycotters λ.[4] This implies that boycotts are increasingly effective in reducing Foreign's welfare, as returns to scale are not decreasing. The welfare loss is between $\left[0; \frac{S(\bar{j})}{1-\lambda}\right]$ and is larger when the relative productivity differences $|Z'(\bar{j})|$ at the trade cutoff are high and closer to zero when they are low. Intuitively, these relative productivity differences $|Z'(\bar{j})|$ capture the loss in comparative advantage that the Foreign country has to face by having to expand production in goods in which it is less productive. The situation is reversed for domestic regular consumers, as they gain from better terms of trade. Consumer boycotters, however, lose from their boycott (relative to their outcomes under free trade) and receive their autarky utility. This utility is the worst that boycotters receive if

[3]Boycotts can be interpreted as an infinite tariff/ban on specific goods and (importantly) for only some consumers. Such tariffs are not found in practice probably because tariffs are observable while individual consumer boycotts are not. In addition, as we see in Section 3.3, the whole purpose of the analysis below is to find the optimal set of boycotted goods by tracing out the Pareto frontier.

[4]These comparative statistics take these functional forms only in the case of the Cobb–Douglas utility function that I consider. In Section 5.1, I show how these results should be adapted for price elasticities of substitution different from 1.

they decide to boycott a subset of Foreign goods. The loss for Foreign consumers stems from their inability to obtain goods previously imported from the Home country that Foreign workers are less productive at making. Even if, in a multicountry model, the Foreign country could switch to the second-best producer of those goods, it would still be worse off from the boycott. The gain for domestic regular consumers stems from the fact that trade is balanced. In a multicountry model, if trade were imbalanced and boycotters had to switch to the rest of the world rather than Home producers, then Home consumers would not be better off from the boycott.

I next investigate the optimal boycott campaign for a group of consumers λ who choose a subset of goods to boycott to maximize Foreign's pain subject to a participation constraint and trace out the Pareto frontier.

3.3 Targeted Boycott Equilibrium

I now consider the problem of consumer boycotters choosing a subset $\mathcal{J}_B$ of boycotted goods to minimize Foreign's utility U^F subject to achieving a certain level of utility for themselves. This problem is equivalent by duality to the problem of boycotters maximizing their utility subject to Foreign's having utility lower than a certain level.[5]

$$U^B = \max_{\{\mathcal{J}_B, \mathbf{q}_H^B, \mathbf{q}_F^B\}} \int_0^1 s(j) \log(q_H^B(j) + q_F^B(j)\mathbf{1}\{j \notin \mathcal{J}_B\})dj \tag{9}$$

$$\text{s.th } U^F \leq v^F \tag{10}$$

Lemma 2. *Let $\mathcal{J}_B$ be the optimal targeted set of boycotted goods given v^F:*

1. *There exists no set of positive measure between $\mathcal{J}_B$ and the trade cutoff $\overline{j}$, and $\mathcal{J}_B$ is a convex set.*
2. *There exists $j_B \in [\overline{j}; 1]$ so that $\mathcal{J}_B = [\overline{j}, j_B]$ (almost everywhere) boycotts goods up to j_B.*

Proof. See Appendix B. □

[5] In addition, there exists an endogenous Lagrangian μ such that this problem is equivalent to a planner maximizing $U^B - \mu U^F$.

The proof of this lemma highlights what matters for the optimal set of boycotted goods. Domestic income from boycotted goods is proportional to the expenditure share on the set of boycotted goods, which I can loosely refer to as $S(\mathcal{J}_B)$. With CES preferences, this expenditure share is the only determinant of the trade cutoff and Foreign wage because of the balanced trade equation, which equalizes domestic income with expenditure on Home-produced goods.

$$w_H l_H = \underbrace{(1-\lambda)S(\bar{j})w_H l_H}_{\text{regular domestic consumers}} + \underbrace{\lambda S(\mathcal{J}_B)w_H l_H}_{\text{domestic consumer boycotters}} + \underbrace{S(\bar{j})w_F l_F}_{\text{Foreign consumers}} \tag{11}$$

Any set of positive measure X between $\bar{j}$ and $\mathcal{J}_B$ or separating $\mathcal{J}_B$ can be transferred to the right of $\mathcal{J}_B$ to obtain a new set of boycotted goods with the same expenditure share and the same relative wage and trade cutoff as $\mathcal{J}_B$. Now, because the obtained set features boycotted goods of lower index j than $\mathcal{J}_B$, which are cheaper to produce for Home, welfare for Home boycotters would be higher under this alternative set of boycotted goods, while Foreign's welfare would stay the same. Thus, for any given utility v^F for Foreign, the optimal targeted boycotted set includes the goods closest to the trade cutoff. The following proposition characterizes the optimal set and welfare explicitly.

Proposition 3. *For any level of Foreign welfare tolerated v^F, the optimal targeted boycott is $\mathcal{J}_B = [0, j_B]$ for a cutoff $j_B \geq \bar{j}$ below which Foreign goods are boycotted. In addition, a reduction in $v^F \downarrow$ comes with an increase in the optimal boycott cutoff ($j_B \uparrow$), increases the relative wage of Home workers $\omega \uparrow$ and increases the set of Foreign-produced goods $\bar{j} \downarrow$. In particular, the marginal welfare changes are:*

$$\frac{dv^F}{dj_B} = -S(\bar{j})\frac{d\omega}{\omega dj_B} \leq 0 \tag{12}$$

and the marginal change in the Home boycotters' welfare relative to the change in For-

eign's welfare is

$$\frac{dU^B}{-dv^F} = \frac{1}{S(\bar{j})} \cdot \left(1 - S(j_B) + S(j_B) \cdot \log \left(\underbrace{\frac{Z(j_B)}{\omega}}_{<1} \right) \varepsilon_{S(j_B),\omega} \right) \tag{13}$$

where the elasticity is:

$$\varepsilon_{S(j_B),\omega} \equiv \frac{d \log S(j_B)}{d \log \omega} = \frac{1 - S(\bar{j}) - \lambda(S(j_B) - S(\bar{j}))}{\lambda S(j_B)} \left(1 - \frac{\frac{(1-\lambda S(j_B))s(\bar{j})\omega}{1-S(\bar{j})-\lambda(S(j_B)-S(\bar{j}))}}{\frac{(1-\lambda S(j_B))s(\bar{j})\omega}{1-S(\bar{j})-\lambda(S(j_B)-S(\bar{j}))} - Z'(\bar{j})} \right)^{-1} \tag{14}$$

Proof. See Appendix C. □

This proposition states that for any given level of tolerated Foreign utility, the optimal targeted boycott has a cutoff below which domestic boycotters boycott all goods. Figure 2 illustrates the targeted boycott equilibrium. An increase in the boycott cutoff j_B shifts the BT curve to the left and leads to a decrease in the trade cutoff from $\bar{j}$ to $\bar{j}'$ and to an increase in the relative wage of Home workers. The full boycott equilibrium corresponds to the optimal targeted boycott equilibrium that gives the lowest utility to Foreign with $j_B = 1$. The marginal change in the boycotters' welfare for a given decrease in Foreign's welfare captures the slope of the Pareto frontier. An increase in the boycott cutoff j_B yields a marginal decrease in Foreign's welfare. Home boycotters lose from consuming more expensive domestic goods but gain from higher relative wages. The loss from consuming more expensive domestic products is proportional to the elasticity of the expenditure share on boycotted goods that is shifted to domestic goods to the relative wage $\varepsilon_{S(j_B),\omega}$. Targeted boycotts are therefore more effective when this elasticity is smaller. Equation (14) shows that this is the case when λ is higher.

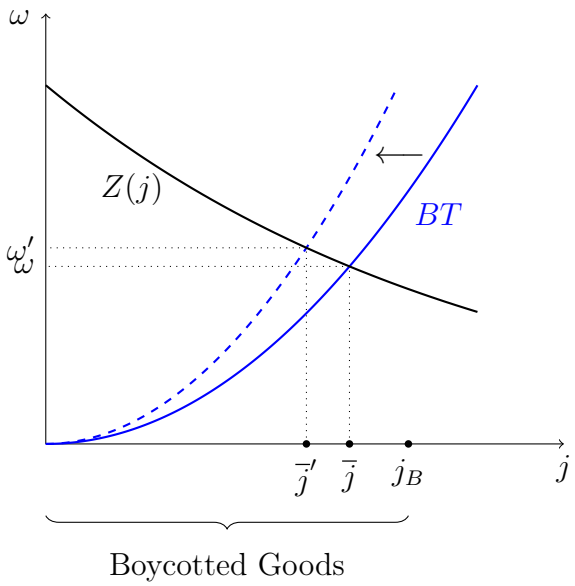


Figure 2: Optimal targeted boycott equilibrium. For any Foreign utility v^F, there exists a cutoff $j_B(v^F) \geq \bar{j}$ such that goods of lower index value are boycotted. A full boycott corresponds to $j_B = 1$.

4 Numerical Example

I do a numerical example of a symmetric situation between Home and Foreign. I normalize Home wages $w_H = 1$ without loss of generality. I set the following parameters: $l_H = l_F = 1$, and $s(j) = 1$ for all j, implying a uniform distribution over the interval $[0, 1]$ with c.d.f. $S(j) = \int_0^j s(j')dj' = j$. For the production functions, I follow Eaton and Kortum (2002). In their specification, $Z(j)$ arises from a random process of allocating technologies to countries, according to a Fréchet distribution. T is an index of a country's overall technology level. I normalize $z_F(j) = 1$ for all j without loss of generality and set $z_H(j) = \left(\frac{T_H}{T_F}\right)^{\frac{1}{\mu}} \left(\frac{j}{1-j}\right)^{-\frac{1}{\mu}}$, with $T_H = T_F = 1$, $\mu = 1$, and $\lambda = 0.25$.

I proceed to compute the Pareto frontier and an example of the difference between Home boycotters' and Foreign's utility for each boycott cutoff level. Figure 3 illustrates these graphs. From the left panel, we see that there is a tradeoff between imposing a welfare loss on Foreign and preserving domestic boycotters' welfare, with a boycott rate of 25% able to impose a loss in consumption-equivalent welfare on Foreign of up to 6.9%. The right panel of Figure 3 plots the utility difference as a function of the

boycott cutoff. As in Proposition 3 and as explained in Equation (13), an increase in the boycott cutoff increases the gap between Home boycotters' and Foreign's welfare by increasing the relative wage of Home workers. This is the dominant effect when j_B is close to the trade cutoff $\bar{j}$. Then, as j_B approaches one, the welfare gap between the Home boycotters and Foreign decreases because Home boycotters lose more from more expensive goods produced at Home.

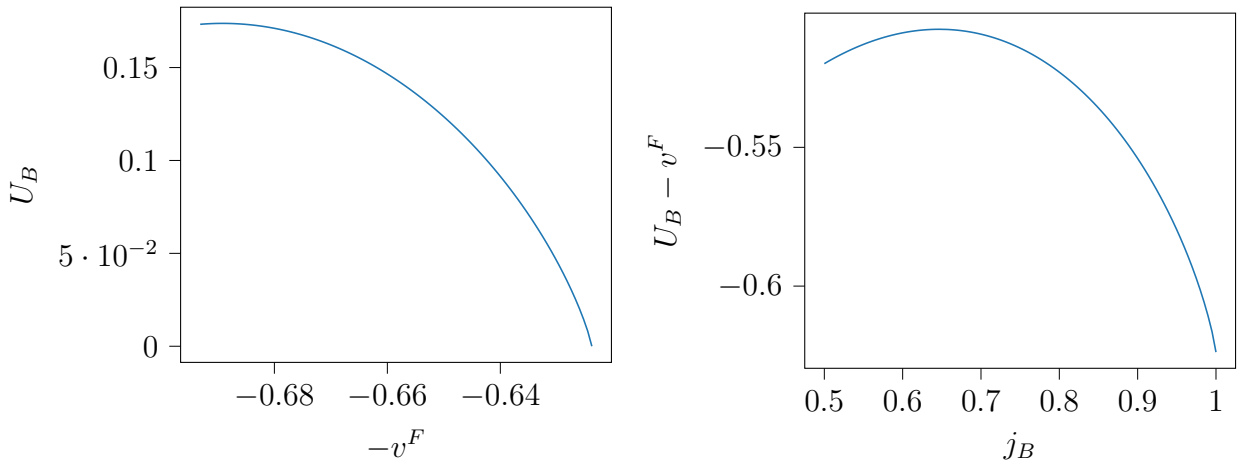


Figure 3: Pareto frontier (left) and utility difference between home boycotters and Foreign consumers as a function of boycott cutoff (right). From free trade to a full boycott, Foreign can lose up to 6.9% consumption-equivalent welfare with a 25% rate of boycott.

Next, I plot the welfare of Home boycotters and of Foreign as a function of the boycott cutoff. Figure 4 illustrates these graphs, which allow us to draw implications about the effectiveness of targeted boycotts. The left-hand panel shows that the utility of Foreign consumers is linearly decreasing in the boycott cutoff. This reflects the fact that the boycott cutoff affects Foreign's welfare only through the effect on the relative wage ω and trade cutoff $\bar{j}$. The right-hand panel, on the other hand, shows that while $\frac{dU_B}{dj_B}|_{0.5} = 0$, U_B is concave and decreasing in j_B, indicating that the boycott becomes increasingly costly to Home boycotters and therefore less effective when it is less targeted (high j_B). Finally, I plot the trade cutoff and relative wages as a function of the boycott cutoff. Figure 5 illustrates these graphs. In the trade equilibrium with boycott, goods with index values below 1/2 are produced domestically and those with

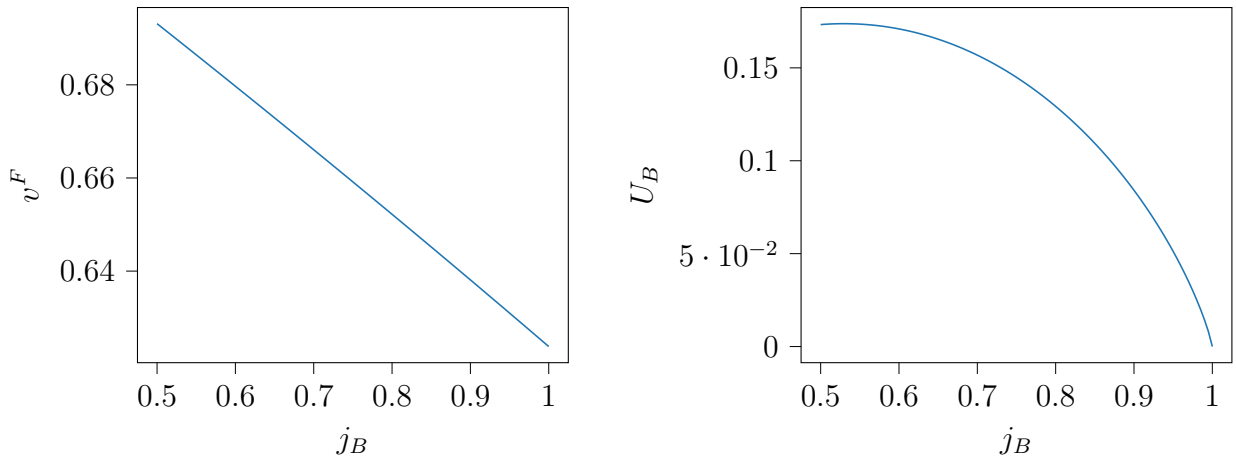


Figure 4: Foreign's welfare (left) and domestic boycotters' welfare (right) as a function of the boycott cutoff. The utility of Home boycotters is concave and decreasing in j_B, indicating that the boycott becomes increasingly costly to Home boycotters and therefore less effective when it is less targeted.

values above 1/2 are produced overseas. The trade cutoff, which determines the patterns of trade for domestic regular consumers and Foreign consumers, falls to 0.46 in a full boycott. Home's relative wage, on the other hand, increases from 1 to 1.15, which corresponds to a 15% decline in Foreign wages in the case of a full boycott by 25% of consumers.

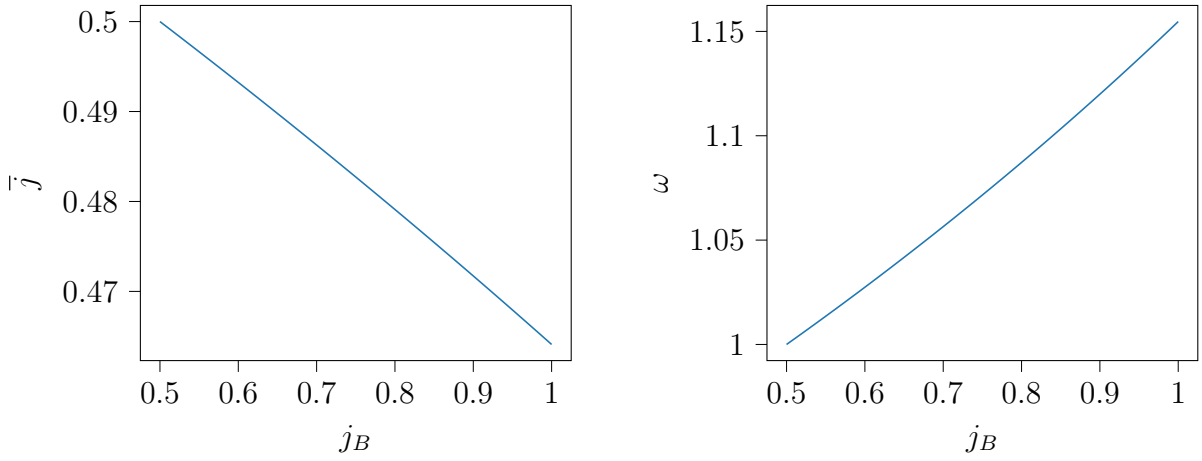


Figure 5: Trade cutoff (left) and relative wage (right) as a function of the boycott cutoff. There is a decline of up to 15% in Foreign wages in the case of a full boycott by 25% of Home consumers.

5 Other Dimensions of Boycotts

5.1 Substitution Elasticities

Our baseline model is one in which the elasticity of substitution is equal to 1. Here, I consider different possible elasticities of substitution that can be captured in my framework by CES preferences:

$$U(\mathbf{q}) = \left(\int_0^1 s(j)^{\frac{1}{\sigma}} q^i(j)^{\frac{\sigma-1}{\sigma}} dj \right)^{\frac{\sigma}{\sigma-1}} \tag{15}$$

In this setting, whenever preferences are not Cobb–Douglas ($\sigma \neq 1$), the expenditure share on each good j depends not only on the exogenous $s(j)$ but on the endogenous price of good j and the price index P faced by regular consumers and boycotters. In Appendix D, I show that Propositions 1 and 3 and Lemma 2 generalize to these preferences, though the comparative statistics of welfare take more complex forms. The case with heterogeneous elasticities of substitution across goods j is not analytically tractable. However, since consumers find it easier to switch to alternative products with a higher elasticity of substitution relative to that of other goods, I conjecture that, if they decide to boycott, it is optimal to boycott goods close to $\overline{j}$ in relative productivity and substitutable with other goods.

5.2 Political Salience and Specific Firm Boycotts

As documented in Section 2, consumer groups can target a specific group of firms that can operate both domestically or at home because of the firms' political salience or because of animus toward the firms' actions. I can capture these motivations in my framework with the following preferences and choices for boycotters[6]:

$$U^B = \max_{\{\mathbf{q}^B\}} \int_0^1 s(j)(1 - d(j)) \log(q^B(j)) dj \tag{16}$$

[6]This setting corresponds to a situation where home boycotters have different expenditure shares equal to $s'(j) = s(j)(1 - d(j))$ that, importantly, do not necessarily add up to 1 so the preferences are not Cobb–Douglas.

where the damage $d(j) \in [0;1]$ captures the political salience of or animus toward firms producing good j and $q^B(j)$ is the boycotters' consumption of good j irrespective of its country of production. In this setting, boycotters reduce their expenditure share on goods with high $d(j)$. In Appendix E, I show that if the damage to goods that Home imports is higher than the average damage, then the boycott improves the terms of trade for Home, while it harms the terms of trade if the damage to goods that Home exports is higher than the average damage.

5.3 Buycotts and Strategic Retaliation

Buycotts are a response to boycotts whereby consumers buy the products of a boycotted company or country. Retaliation occurs when a boycotted country boycotts the exports of the home country in return. This situation leads to strategic considerations where the share of boycotters endogenously depends on the response of the foreign country. I model this in my full boycott setting with a share λ^F of Foreign boycotting all Home goods (respectively, λ^H for Home boycotters). The balanced trade condition in my full trade equilibrium then becomes

$$\omega = \frac{1-\lambda^F}{1-\lambda^H} \cdot \frac{S(\bar{j})}{1-S(\bar{j})} \cdot \frac{l_F}{l_H} \tag{17}$$

We see that if each country chooses its share of boycotters optimally, then a prisoner's dilemma game, reminiscent of the situation in a trade war, emerges, where an increase in the boycotter share tilts the terms of trade in one's favor. [7]

For instance, for my specification in Section 4, I show that the welfare of a representative Foreign nonboycotter is $\ln\left(\frac{1}{\omega}+1\right)$. If the Foreign government cares only about the utility of its representative nonboycotter, the best response to a boycott λ^H is to increase λ^F arbitrarily close to 1. However, if both governments are utilitarian, the only Nash equilibrium is one where no country boycotts $\lambda^H = \lambda^F = 0$, as the welfare loss from boycotters going into autarky outweighs the terms-of-trade gains for non-

[7] Opp (2010) studies tariff wars in a similar Ricardian model with a continuum of goods.

boycotters. Therefore, it is difficult to justify boycotts on the basis of purely internal equity arguments, and motivations such as those documented in Section 2 are needed to rationalize observed boycotts.

6 Conclusion

I provide a framework to study the economics of international boycotts. Boycotts differ from government-imposed sanctions and tariffs as they affect only the trade balance, while tariffs mostly operate by shifting the comparative advantage between nations. I characterize Pareto-optimal targeted boycotts and show that the optimal boycotted set for the home country includes goods close to the trade equilibrium cutoff but not goods that are more expensive for the home country to produce. The framework allows me to capture several factors related to boycotts such as price elasticity differences, the case of firm-specific boycotts and strategic games between the home and foreign countries.

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Appendix

A Proof of Proposition 1

Regular consumers buy from H if

$$p_H(j) = \frac{w_H}{z_H(j)} \leq \frac{w_F}{z_F(j)} = p_F(j) \tag{18}$$

or if

$$\omega = \frac{w_H}{w_F} \leq \frac{z_H(j)}{z_F(j)} = Z(j) \tag{19}$$

Home has a comparative advantage in goods where $Z(j) \geq \omega$, and Foreign has a comparative advantage otherwise. Therefore, the patterns of trade for regular consumers are defined by

$$Z(\bar{j}) = \omega \tag{20}$$

Given the Cobb–Douglas utility function, consumers allocate a fixed expenditure of their income to each good irrespective of price. Therefore, the first-order conditions for regular (domestic and Foreign) consumers and for domestic boycotters are, respectively:

$$p(j)q^i(j) = s(j)w_i l_i \quad \forall j \in [0,1] \text{ and } i \in \{H, F\} \tag{21}$$

$$p_H(j)q_H^B(j) = s(j)w_H l_H \quad \forall j \in [0,1] \tag{22}$$

Equalizing national labor income in H, with the total expenditure on goods produced

by H, we have[8]:

$$w_H l_H = \underbrace{(1-\lambda)\int_0^{\bar{j}} p(j)q^H(j)dj}_{\text{regular domestic consumers}} + \underbrace{\lambda\int_0^1 p_H(j)q_H^B(j)dj}_{\text{domestic consumer boycotters}} + \underbrace{\int_0^{\bar{j}} p(j)q^F(j)dj}_{\text{Foreign consumers}} \tag{23}$$

Adding the expenditure in (21) and (58), we obtain:

$$w_H l_H = (1-\lambda)S(\bar{j})w_H l_H + \lambda w_H l_H + S(\bar{j})w_F l_F \tag{24}$$

Simplifying yields:

$$\omega = \frac{1}{1-\lambda}\cdot\frac{S(\bar{j})}{1-S(\bar{j})}\cdot\frac{l_F}{l_H} \tag{25}$$

From here, we see that an increase in the share of boycotters λ reallocates expenditure toward domestic goods and shifts the balanced trade curve defined by (25) to the left. The equilibrium relative wage of domestic workers increases, and the trade equilibrium cutoff decreases.

Using the demand functions and equilibrium prices, we can now integrate to find the total utility for the representative consumer in the Foreign country:

$$U^F = \int_0^1 s(j)\log\left(\frac{s(j)w_F l_F}{p(j)}\right)dj \tag{26}$$

where the price function is given by:

$$p(j) = \begin{cases} \frac{w_H}{z_H(j)} & \text{if } j \leq \bar{j} \\ \frac{w_F}{z_F(j)} & \text{if } j > \bar{j} \end{cases} \tag{27}$$

[8]Another way to determine the second equilibrium condition is to equalize Home exports with imports. I consider the expenditure accounting to transparently show how boycotts impact the trade equilibrium.

i.e, the Foreign real wage is

$$\frac{w_F}{p(j)} = \begin{cases} \frac{z_H(j)}{\omega} & \text{if } j \leq \bar{j} \\ z_F(j) & \text{if } j > \bar{j} \end{cases} \tag{28}$$

and welfare is

$$U^F = \int_0^{\bar{j}} s(j) \log\left(\frac{z_H(j)}{\omega}\right) dj + \int_{\bar{j}}^1 s(j) \log\left(z_F(j)\right) dj + \int_0^1 s(j) \log\left(s(j) l_F\right) dj \tag{29}$$

Then,

$$\frac{dU^F}{d\lambda} = -S(\bar{j}) \frac{d\omega}{\omega d\lambda} + s(\bar{j}) \log\left(\underbrace{\frac{z_H(\bar{j})}{\omega \cdot z_F(\bar{j})}}_{=1}\right) \frac{d\bar{j}}{d\lambda} \tag{30}$$

where the right-most term is zero by the definition of the equilibrium relative wage of domestic workers. To characterize $d\omega/d\lambda$ further, apply the implicit function theorem to (8) to obtain:

$$\frac{d\omega}{d\lambda} = \frac{\omega}{1-\lambda}\left(1 - \frac{\frac{s\omega}{S(1-S)}}{\frac{s\omega}{S(1-S)} - Z'(\bar{j})}\right) \tag{31}$$

and therefore,

$$\frac{dU^F}{d\lambda} = -\frac{S}{1-\lambda}\left(1 - \frac{\frac{s\omega}{S(1-S)}}{\frac{s\omega}{S(1-S)} - Z'(\bar{j})}\right) \tag{32}$$

Analogously, the marginal welfare change of Home nonboycotters is

$$\frac{dU^H}{d\lambda} = (1-S)\frac{d\omega}{\omega d\lambda} \geq 0 \tag{33}$$

and the welfare of each Home boycotter is the autarky welfare irrespective of λ:

$$U^B = \int_0^1 s(j) \log\left(z_H(j) s(j) l_H\right) dj \tag{34}$$

B Proof of Lemma 2

Consider the set of Foreign boycotted goods$\mathcal{J}_B$. Then, domestic income is:

$$w_H l_H = \underbrace{(1-\lambda)\int_0^{\bar{j}} p(j)q^H(j)dj}_{\text{regular domestic consumers}} + \underbrace{\lambda\int_{\mathcal{J}_\mathcal{B}} p_H(j)q_H^B(j)dj}_{\text{domestic consumer boycotters}} + \underbrace{\int_0^{\bar{j}} p(j)q^F(j)dj}_{\text{Foreign consumers}} \tag{35}$$

Summing the expenditures as previously, we obtain

$$w_H l_H = (1-\lambda)S(\bar{j})w_H l_H + \lambda\left(\int_{\mathcal{J}_\mathcal{B}} s(j)dj\right) w_H l_H + S(\bar{j})w_F l_F \tag{36}$$

Denote the expenditure share in the set of boycotted goods $S(\mathcal{J}_B) \equiv \int_{\mathcal{J}_\mathcal{B}} s(j)dj$ for ease of notation. Simplifying the equation above yields

$$\omega = \frac{S(\bar{j})}{1-\lambda S(\mathcal{J}_B) - (1-\lambda)S(\bar{j})} \cdot \frac{l_F}{l_H} \tag{37}$$

Using the demand functions and equilibrium prices, we can integrate to find the total utility for the representative consumer in the Foreign country:

$$U^F = \int_0^1 s(j)\log\left(\frac{s(j)w_F l_F}{p(j)}\right)dj \tag{38}$$

where the price function is given by

$$p(j) = \begin{cases} \frac{w_H}{z_H(j)} & \text{if } j \leq \bar{j} \\ \frac{w_F}{z_F(j)} & \text{if } j > \bar{j} \end{cases} \tag{39}$$

i.e, the Foreign real wage is

$$\frac{w_F}{p(j)} = \begin{cases} \frac{z_H(j)}{\omega} & \text{if } j \leq \bar{j} \\ z_F(j) & \text{if } j > \bar{j} \end{cases} \tag{40}$$

and welfare is

$$U^F = \int_0^{\bar{j}} s(j) \log\left(\frac{z_H(j)}{\omega}\right) dj + \int_{\bar{j}}^1 s(j) \log\left(z_F(j)\right) dj + \int_0^1 s(j) \log\left(s(j) l_F\right) dj \quad (41)$$

Observe here that Foreign's welfare depends only on $\mathcal{J}_B$ insofar as it affects the relative wage ω and the trade cutoff $\bar{j}$. However, the welfare of Home boycotters depends directly on $\mathcal{J}_B$ in that boycotted goods with higher index value j reduce the welfare of Home boycotters (they are more expensive to produce). Now, suppose there exists a set of positive measure X between $\bar{j}$ and $\mathcal{J}_B$ or separating $\mathcal{J}_B$ ($\bar{j} < \inf X < \sup X < \inf \mathcal{J}_B$ or $\bar{j} < \sup X < \sup \mathcal{J}_B \quad \& \quad X \cup \mathcal{J}_B = \emptyset$). Then, by replacing a set with the same expenditure share as X from the right in $\mathcal{J}_B$ with X, we obtain a new set of boycotted goods with the same expenditure share and, from (36), the same relative wage and trade cutoff as $\mathcal{J}_B$. Therefore, from (41), this set gives the same utility to Foreign consumers v^F. Now note that because this set features boycotted goods of a lower index value j than $\mathcal{J}_B$, Home boycotters would have higher welfare. Thus, a set $\mathcal{J}_B$ that does not satisfy Lemma 2 cannot be optimal.

C Proof of Proposition 3

Consider j_B, the cutoff above which Foreign goods are boycotted. Domestic income is

$$w_H l_H = \underbrace{(1-\lambda)\int_0^{\bar{j}} p(j) q^H(j) dj}_{\text{regular domestic consumers}} + \underbrace{\lambda \int_0^{j_B} p_H(j) q_H^B(j) dj}_{\text{domestic consumer boycotters}} + \underbrace{\int_0^{\bar{j}} p(j) q^F(j) dj}_{\text{Foreign consumers}} \quad (42)$$

Summing the expenditures as previously, we obtain

$$w_H l_H = (1-\lambda) S(\bar{j}) w_H l_H + \lambda S(j_B) w_H l_H + S(\bar{j}) w_F l_F \quad (43)$$

Simplifying the equation above yields:

$$\omega = \frac{S(\bar{j})}{1 - \lambda S(j_B) - (1-\lambda)S(\bar{j})} \cdot \frac{l_F}{l_H} \tag{44}$$

From here, we see that an increase in the boycott cutoff j_B reallocates expenditure toward domestic goods and shifts the balanced trade curve (44) to the left. The equilibrium relative wage of domestic workers increases, and the trade equilibrium cutoff decreases.

The welfare of each Home boycotter is

$$U^B = \int_0^{j_B} s(j) \log\left(z_H(j)\right) dj + \int_{j_B}^1 s(j) \log\left(z_F(j)\omega\right) dj + \int_0^1 s(j) \log\left(s(j) l_H\right) dj \tag{45}$$

We obtain

$$\frac{dU^B}{dv^F} = \left(1 - S(j_B)\right) \frac{d\omega}{\omega dv^F} + s(j_B) \log \left(\underbrace{\frac{z_H(j_B)}{\omega \cdot z_F(j_B)}}_{<1} \right) \frac{dj_B}{dv^F} \tag{46}$$

Since

$$\frac{dv^F}{d\omega} = -S(\bar{j}) \frac{1}{\omega} \tag{47}$$

we obtain

$$\frac{dU^B}{dv^F} = -\frac{\left(1 - S(j_B)\right)}{S(\bar{j})} - s(j_B) \log \left(\underbrace{\frac{z_H(j_B)}{\omega \cdot z_F(j_B)}}_{<1} \right) \frac{\omega \cdot dj_B}{S(\bar{j}) d\omega} \tag{48}$$

From the implicit function theorem, we have:

$$\frac{d\omega}{dj_B} = \frac{\lambda s(j_B) \omega}{1 - \lambda S(j_B) - (1-\lambda) S(\bar{j})} \left(1 - \frac{\frac{(1-\lambda S(j_B)) s\omega}{S(1-\lambda S(j_B) - (1-\lambda)S)}}{\frac{(1-\lambda S(j_B)) s\omega}{S(1-\lambda S(j_B) - (1-\lambda)S)} - Z'(\bar{j})} \right) \tag{49}$$

where $S = S(\bar{j})$.

D Substitution Elasticities

For $\sigma \neq 1$, we can define the trade price index and boycotter price index

$$P(\sigma) = \left(\int_0^1 s(j) p(j)^{1-\sigma} dj \right)^{\frac{1}{1-\sigma}} \tag{50}$$

$$P_B(\sigma) = \left(\int_0^1 s(j) p_H(j)^{1-\sigma} dj \right)^{\frac{1}{1-\sigma}} \tag{51}$$

where $p(j)$ is the world price of good j and $p_H(j)$ is the domestic producer price of good j. Then, the expenditure shares on good j for regular consumers and boycotters are, respectively,

$$\text{share}(j;\sigma) = s(j) \left(\frac{p(j)}{P(\sigma)} \right)^{1-\sigma} \tag{52}$$

$$\text{share}^B(j;\sigma) = s(j) \left(\frac{p_H(j)}{P_B(\sigma)} \right)^{1-\sigma} \tag{53}$$

Aggregating these shares,

$$S(j;\sigma) = \int_0^j \text{share}(j';\sigma) dj' \tag{54}$$

$$S^B(j;\sigma) = \int_0^{j'} \text{share}^B(j';\sigma) dj' \tag{55}$$

Domestic income is

$$w_H l_H = (1-\lambda) S(\bar{j};\sigma) w_H l_H + \lambda S^B(j_B;\sigma) w_H l_H + S(\bar{j};\sigma) w_F l_F \tag{56}$$

We obtain the new BT condition:

$$\omega = \frac{S(\bar{j};\sigma)}{1 - \lambda S^B(j_B;\sigma) - (1-\lambda) S(\bar{j};\sigma)} \cdot \frac{l_F}{l_H} \tag{57}$$

We see that we obtain the same balanced trade condition as before with expenditure shares that are endogenous. Thus, the same analysis as for Propositions 1 and 3 and Lemma 2 holds. The comparative statistics of welfare differ, however, as the expenditure

shares in equations (52) and (53) depend on the prices and price indices, which depend endogenously on the trade cutoff $\bar{j}$.

E Political Salience and Firm-Specific Boycotts

This setting corresponds to a situation where home boycotters have different expenditure shares equal to $s'(j) = s(j)(1 - d(j))$ that, importantly, do not necessarily add up to 1 so the preferences are not Cobb–Douglas. The Home boycotters' consumption choices are determined by the first-order conditions:

$$p(j)q_H^B(j) = s(j)\frac{1 - d(j)}{1 - D}w_H l_H \quad \forall j \in [0, 1] \tag{58}$$

where the average damage is $D \equiv \int_0^1 s(j)d(j)dj$ and we define $D(j) \equiv \int_0^j s(j')d(j')dj'$. Thus, Home boycotters reduce their expenditure share in goods according to how $d(j)$ compares to the average damage. Domestic income is

$$w_H l_H = (1 - \lambda)S(\bar{j})w_H l_H + \lambda\frac{S(\bar{j}) - D(\bar{j})}{1 - D}w_H l_H + S(\bar{j})w_F l_F \tag{59}$$

The BT condition is therefore

$$\omega = \frac{S(\bar{j})}{1 - S(\bar{j}) - \lambda\left(\frac{S(\bar{j})D - D(\bar{j})}{1-D}\right)} \cdot \frac{l_F}{l_H} \tag{60}$$

Denote $\bar{j}_{DFS}$ the trade cutoff without any boycotters, for which the BT condition is the standard Dornbusch et al. (1977) one:

$$\omega = \frac{S(\bar{j}_{DFS})}{1 - S(\bar{j}_{DFS}))} \cdot \frac{l_F}{l_H} \tag{61}$$

Then, from equation (60), if $\frac{D(\bar{j}_{DFS})}{D(\bar{j}_{DFS})} > D$, there is a rightward shift in the balanced trade curve that crosses $Z(j)$ after $\bar{j}_{DFS}$, and the trade cutoff equilibrium with boycotters is such that $\bar{j} > \bar{j}_{DFS}$ and $\omega < \omega_{DFS}$. The situation is reversed if $\frac{D(\bar{j}_{DFS})}{D(\bar{j}_{DFS})} < D$.

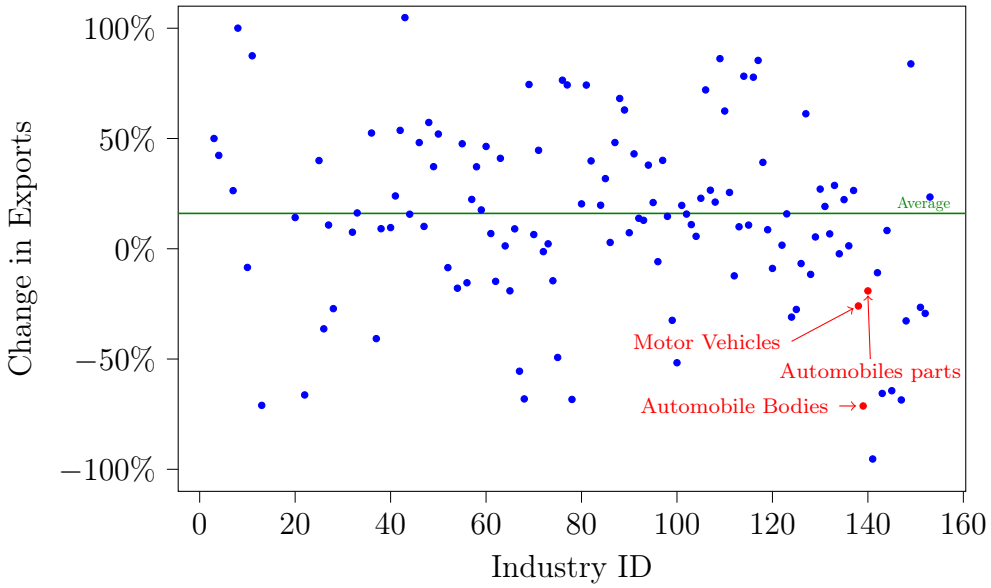

Figure A0: Percentage change in French exports to China for different industries following the 2008 Chinese boycott of France. The change in French exports to China was heterogeneous across industries, but exports in the automobile and adjacent industries uniformly decreased.

There is a rightward shift in the balanced trade curve that crosses $Z(j)$ before $\overline{j}_{DFS}$, and the trade cutoff equilibrium with boycotters is such that $\overline{j} < \overline{j}_{DFS}$ and $\omega > \omega_{DFS}$.

F 2008 Chinese Boycott of France

Figure A0 illustrates the change in exports from France to China in the year of the ban, showing that French exports to China increased or decreased across a variety of industries but, in the automobile and adjacent industries, decreased in the year of the boycott.