

Department of Economics  
and Management

# Discussion Paper

2024-03

Economics

Department of Economics and Management  
University of Luxembourg

## From Flags to Products: Nationalism and Consumer Choices

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Mai, 2024

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# From Flags to Products: Nationalism and Consumer Choices\*

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March 2024

## Abstract

In this paper, we propose a theoretical model of nationalism in consumption, aiming to uncover its effects on market outcomes and welfare. Nationalism is catalyzed by the perception of higher quality for domestic goods, which in turn provides a utility benefit. We construct a two-country setting of vertical product differentiation where consumers exchange consumption habits in social interactions, potentially spreading nationalism from one country to another. Consumers are heterogeneous with respect to their level of income. We demonstrate that in a globalized economy, in the realm of nationalism, intercountry meetings are mainly detrimental for firms producing high-quality goods and for low-income consumers. Our research highlights how the rising tension between nationalism and globalization manifests in consumption as a demarcation between those favoring a borderless world and its opponents who promote national attachment. The effects of these tensions are far from being evident.

**Keywords:** Nationalism, Vertical Product Differentiation, Relative Preferences, Inter-country meetings

**JEL Classification:** A13; D91; L13; F52.

## 1 Introduction

*"Foie gras belongs to the protected cultural heritage of France". (French rural code L654-27)*

In this theoretical paper, we uncover the effects of consumer nationalism on the market and welfare, while also examining whether globalization, occurring through inter-country meetings between citizens, might amplify or alleviate these effects. Consumer nationalism can be viewed as an endeavor to use consumption as a political statement. It passes through the avoidance of foreign goods and the preference for domestically produced items (Gerth, 2011, Ahlerup and Hansson, 2011).

The phenomenon of consumer nationalism is not only significant but also widespread worldwide (Castellò and Miheli 2018). In early 2017, Chinese internet users opposed the South Korean conglomerate Lotte, organizing a grassroots boycott against its products. This boycott stemmed from Lotte's perceived support of South Korea's deployment of the U.S. Terminal High Altitude Area Defense missile system, viewed by China as a security threat.<sup>1</sup> Other examples include the Arab countries' boycott of Israeli items since Israel's founding in 1948 and the US boycotts of French products, particularly wine, during the Iraq war in 2003 as a response to French opposition to military intervention.<sup>2</sup> In a similar vein, Greece and Italy have threatened not to ratify the trade agreement between Europe and Canada—known as the Comprehensive Economic and Trade Agreement, or CETA—because of weaker GI protection (Malkoutzis, 2016; Reuters, 2018).<sup>3</sup>

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\*We would like to thank Paolo Garella, Jean J. Gabszewicz, Despina Gavresi, Anastasia Litina, Andrea Mantovani and Joana Resende for very interesting comments. The usual disclaimer applies.

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<sup>1</sup>See also Sun Q. *et al.* (2020) on the boycott of Japanese products taking place in China in the summer of 2012 and Proffen C. and L. Jürgensmeier (2024) on the impact of nationalism on US-China relations in 2018 and 2019. In that case, the authors wonder whether US consumers reduce their visits to Chinese restaurants when bilateral relations deteriorate.

<sup>2</sup>The boycott of Israeli products was especially successful in the automobile industry, as testified by several analysis conducted in the 1990s.

<sup>3</sup>In August 2020, the Cypriot parliament voted against the ratification of CETA because it failed to protect Halloumi cheese (Moens et al., 2020). The German media also reported on the lack of protection of Bavarian beer in the same agreement (Uken, 2015).

No doubt the above-described phenomenon is in sharp contrast with the efforts to create a solid European identity. Globalization enhances interconnections among different countries and makes transportation cheaper and faster, thereby inducing internationalization and openness. Nonetheless, to the extent that it promotes cultural exchanges, paradoxically it can disseminate nationalistic feelings among consumers, with unexpected economic and social consequences. Rising tension between nationalism and globalism results in food consumption as a demarcation between those favouring a borderless world and its opponents who promote national attachment.

To analyse the impact of consumer nationalism on the market and disentangle its interconnection with globalization, we propose a model of vertical product differentiation (VPD), inspired by Mussa and Rosen (1978) and Gabszewicz and Thisse (1979), with two countries and two firms, one in each country.<sup>4</sup> We assume free trade so that goods are available everywhere. Also, we assume that consumers living in the country where the high-quality firm is located display nationalism. *Nationalism is formalized as the attitude of deriving additional utility from consuming a domestically produced good thereby enhancing its perceived quality due to its domesticity.* Thus, nationalist consumers buying the domestic good (resp. the foreign good) have a further benefit (resp. a further cost—say, a frustration) beyond the satisfaction of their material need, independently of the intrinsic quality of the domestic good. Consumers living in the other country where the low-quality good is produced only evaluate the intrinsic quality of the good. Finally, we assume that in each country citizens differ in terms of their willingness to pay. This heterogeneity across consumers can be interpreted as *income inequality*, similarly to the pioneering work by Gabszewicz and Thisse (1979).

The scope of our analysis is twofold. First, we aim at identifying the impact of nationalism on market solution. To this aim, we focus on a first scenario where citizens residing in different countries do not interact. Given that consumers within the same country share identical preferences, no shifts in preferences are anticipated. In comparison with the traditional vertical differentiation model, the market solution is solely influenced by consumer nationalism.

Then, to capture the tension between good consumption to confirm a national cultural identity and globalization as a citizens' tendency to meet each others and exchange consumption attitude, we move to a more realistic scenario with cross-country encounters. In this scenario, consumers from the two countries meet, exchange consumption information and may consequently adjust their attitudes, either embracing or abandoning consumer nationalism.

In fact, following the economic literature on endogenous preferences that highlights the importance of social interactions and peer effects in shaping individuals' preferences and consumption behavior (Bowles, 1998, Gabszewicz et al., 2022, Kourtellos and Petros, 2021), we assume that each consumer considers what their utility level would be if they mimicked the preferences of the individual they are meeting and compares this to the utility level obtained from their actual preferences. These comparisons may induce a change in preference, if this the change gives a higher level of utility, such that nationalism can expand or shrink. This assumption is in line with standard models of attitude change (e.g., Boyd and Richerson 1985), where distribution of attitudes in the population evolves through a natural-selection-like process determined by relative payoffs. This further analysis enables to asses the role of globalization in disseminating/shrinking nationalism and possibly affecting the market solution.

Our main findings can be summarized as follows. In absence of inter-country meetings, nationalism leads to an upward shift in both the price and the total quantity produced by the high-quality firm, i.e. the firm located in the country where consumers exhibit nationalism. In contrast, nationalism decreases the profits of low-quality firm, as both the price and quantity of the low-quality good decrease. Moreover, consumers buying the domestic goods in each country are better off,

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<sup>4</sup>We use the well-known model of vertical differentiation (see Gabszewicz and Thisse, 1979, Mussa and Rosen, 1978) in our setting because nationalism strictly relates to the quality of the goods.

while consumers buying the foreign good may be worse off. Overall, welfare increases in the country where nationalism originated but it decreases in the other country.

Inter-country meetings mitigate the impact of nationalism on prices by moderating the increase in the high-quality price and boosting the low-quality price, all while nationalism's effect is not entirely neutralized. Interestingly, in the realm of nationalism, inter-country meetings increase consumer surplus in the country hosting the high-quality firm only when income inequality is high; otherwise, they tend to be disadvantageous for its citizens. Finally, inter-country meetings suppress nationalism despite partly disseminating it from the country where it originated to the other country: after these encounters, in both countries only consumers buying the domestic good are nationalists.

We can draw from the above two interesting properties of the model. First of all, when individuals live isolated from those having different consumption attitude, nationalism benefits the firm located in the country where nationalism originates. This result should come with no surprise and provides reassurance to politicians seeking to promote consumer nationalism with the primary goal of protecting their nation's economic interests. However, this advantage may come at expenses of nationalist consumers that cannot afford to buy the domestic good. We prove in the model that they are damaged by nationalism, even if it drives down the price of the foreign good, whenever the frustration of buying that good is very strong. Secondly, and even more surprisingly, when nationalism spreads due to globalization, the surplus of consumers residing in the country where nationalism originates decreases. *Said differently, globalization hurts the country endorsing nationalism.* This second properties opens the door to a policy consideration. Consumer nationalism is often championed by politicians, e.g. President Trump, as a distinctive remedy against the perceived invasion of foreign enemies. Campaigns as *America first*, with its blend of nationalism and xenophobia, are advocated to safeguard the prosperity of the nations and their citizens. As a matter of fact, pursuing consumer nationalism has an economic justification only when nationalist consumers do not interact with people from different culture, namely only in the unrealistic scenario of social isolation. On the contrary, when nationalism meets globalization, the exchange of consumption habits resulting from international encounters may hurt the country from which nationalism originates.

The paper is set out as follows. In Section 3, we develop the model. Then, in Section 4, we describe the market solution with nationalism but in absence of inter-country meetings and, in Section 5, we introduce inter-country meeting and evaluate how the properties of the model evolve. Finally, section 6 offers some concluding remarks.

## 2 Related Literature

Our paper contributes to different strands of existing literature. First, we bridge the literature on endogenous preferences in consumption with that of vertical product differentiation. In a seminal paper, Akerlof and Kranton (2000) formally incorporated social identity into a behavioral model, in which agent preferences are structured by their choice of a social category. In addition, Bowles' approach (Bowles, 1998) to endogenous preferences revolves around the idea that economic factors and social interactions play a crucial role in shaping individual preferences. Bowles suggests that people's wants and desires are not solely driven by innate factors or rational calculations of self-interest. Instead, preferences are malleable and subject to change in response to economic circumstances, cultural norms, and social influences. In the theory of endogenous preferences, the concept of 'keeping up with the Joneses' illustrates how individuals' preferences can be influenced by social comparisons and the desire for relative status. The empirical literature on endogeneous preferences - better known as cultural economics (Bisin and Verdier, 2001) - has grown very fast in the recent two decades showing that savings (Costa-Font et

al. 2018), labor force participation (Fernández and Fogli, 2009, Blau et al. 2013), environmental preferences (Litina et al, 2016), redistribution preferences (Alesina and Giuliano, 2011 ), gender roles (Alesina et al, 2013), among others preferences, evolve in time and as a consequence of social interactions. We borrow from this literature the concept of social interactions - nonmarket interactions - that via increased payoff may induce a change in consumers' preferences. Differently from this literature, we bring this hypothesis in a setting of vertical differentiation.

Secondly, we contribute to the literature on nationalism, which is a complex and multifaceted concept that has been widely studied across various disciplines. Research by Alesina et al. (2016) suggests that nationalist sentiments can lead to increased protectionism and reduced international economic integration. This can have both positive and negative effects on economic growth, trade patterns, and investment flows, depending on the specific context and policy measures adopted. Nationalism often plays a central role in shaping social cohesion and collective identity. Empirical evidence by Hjerm (2017) suggests that nationalism can strengthen social bonds and foster a sense of belonging among individuals within a nation. However, it can also create exclusionary attitudes towards minority groups, leading to social fragmentation and tensions. Research by De Juan and Oesch (2017) demonstrates that nationalist sentiments can shape voting choices, particularly in relation to issues such as immigration, national sovereignty, and cultural preservation. Nationalism can have implications for economic inequality and social welfare outcomes. Empirical research by Guiso et al. (2017) reveals that nationalist sentiments are associated with lower support for redistribution and welfare policies. This can have consequences for income disparities and social cohesion within a nation. We apply the idea of nationalism to consumption goods proposing a novel model that explains its effects across different countries.

To a lesser extent, we contribute to the theoretical international trade literature with vertically differentiated goods. This body of research explores the implications of vertical differentiation for trade flows, market competition, firm behavior, and welfare outcomes. Vertical differentiation influences market structures and competition dynamics (Bernard et al, 2007 among others). The literature explores how vertical differentiation affects firm entry and exit, market concentration, and the intensity of competition. It analyzes the strategic behavior of firms in terms of quality choices, pricing strategies, and branding in differentiated markets. In addition, theoretical models of vertical differentiation analyze the impact of consumer preferences on welfare outcomes (e.g. Pinho, et al, 2023). They investigate how changes in income distribution, consumer tastes, and willingness to pay for quality affect welfare gains from trade in vertically differentiated goods (Bertini et al, 2012). These models provide insights into the distributional consequences of trade liberalization. We use the setting of open economies with international trade but our focus is on the effects of nationalism and its price, quantity and welfare effects.

### 3 The model

Consider a two-country model with two vertically differentiated goods. Each country is populated by a single firm. We label  $H$  and  $L$  each country and the corresponding firm within the country. The  $H$  (resp.  $L$ ) firm produces a variant of high (resp. low) quality  $u_h$  (resp.  $u_l$ ). Heterogeneous consumers in each country are indexed by  $\theta$  and uniformly distributed over the interval  $[a, b]$ , with  $a \geq 1$  and  $b > 2a$ .<sup>5</sup> The parameter  $\theta$  captures the consumers' heterogeneous willingness to pay for the good: the higher  $\theta$ , the higher the utility obtained when consuming the good. Each consumer can buy one unit of a given commodity. Given  $a$ , the more distant  $b$  is from  $a$ , the more heterogeneous are consumers in terms of their willingness to pay. Following the classical Vertical Product Differentiation (VPD) model (Mussa and Rosen, 1978, Gabszewicz and Thisse

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<sup>5</sup>These conditions guarantee that the market in both countries is covered at equilibrium. In addition, the assumption  $a \geq 1$  guarantees the positivity of utility levels in all configurations.

1979), we interpret willingness to pay as a proxy of consumer's income, hence the distance  $b - a$  measures *income inequality*.

Consumers may demonstrate nationalism through their consumption choices, which can ultimately affect how they perceive the quality of goods (Klein *et al.* 1998, Ashenfelter *et al.* 2007, Castellò and Miheli 2018). More specifically, *nationalists* perceive an augmented quality for the domestic variant and thus derive additional satisfaction when consuming the national good rather than the foreign one. They suffer a psychological penalty if they consume the foreign good.

In contrast, other consumers do not show nationalism and only judge the quality of the goods by their intrinsic quality  $u_h$  vs  $u_l$ . We assume that nationalism is displayed only in the country  $H$  producing the high-quality good (European Commission, 2021)<sup>6</sup>

To formalize these concepts, we employ a vertical differentiation model inspired by Mussa and Rosen (1978), using relative preferences (Ben Elhadj and Tarola 2015, Mantovani et al. 2016, and Hyll and Schneider 2018 for an empirical application), augmented with a nationalism component. The utility function of a nationalist in country  $H$  is articulated as follows:

$$U^N(\theta) = \begin{cases} \theta u_h + \beta(\gamma u_h - u_l) - p_h & \text{if buying } h \\ \theta u_l - \beta(\gamma u_h - u_l) - p_l & \text{if buying } l \end{cases} \quad (1)$$

where superscript  $N$  indicates *nationalistic preferences*.

This function comprises two key components: an intrinsic component  $\theta u_i$ ,  $i = h, l$  aligned with the traditional approach of vertical product differentiation, where  $\theta$  represents the willingness to pay - disposable income - for the intrinsic quality  $u_i$ ,  $i = h, l$ . The parameter  $\gamma$ ,  $\gamma > 1$ , is nationalism and it amplifies the perceived quality of variant due to its domestic origin. For a given intrinsic quality  $u_h$  and  $u_l$ , and the parameter  $\beta$ , a higher  $\gamma$  implies a larger perceived quality gap between variants among nationalists, all else being equal.<sup>7</sup> The component  $\beta(\gamma u_h - u_l)$  captures *the utility (dis)satisfaction* derived from nationalism. More specifically, the parameter  $\beta$  gauges *the magnitude* of this (dis)satisfaction: a higher  $\beta$  denotes stronger utility (dis)satisfaction from nationalism. While  $\theta$  is consumer-specific as it captures disposable income,  $\beta$  is uniform among nationalist consumers within a country, ensuring consistent evaluation of the benefit derived from consuming the national good across consumers.<sup>8</sup> To maintain the framework of a traditional vertical product differentiation model, we stipulate  $\theta > 1 > \beta > 0$ . Notice that when  $\beta = 0$ , we recover the traditional model of vertical product differentiation (VPD).

To ensure that the utility level of a consumer in country  $H$  who purchases good  $l$  is *a priori* positive (i.e.  $\theta u_l - \beta(\gamma u_h - u_l) > 0$ ), we posit

$$\gamma < \frac{\beta + \theta}{\beta} \frac{u_l}{u_h}. \quad (2)$$

The traditional utility function  $V(\theta)$  of consumers living in  $L$  depends on the intrinsic quality of the consumed good and writes as

$$V(\theta) = \begin{cases} \theta u_l - p_l & \text{if buying } l \\ \theta u_h - p_h & \text{if buying } h \end{cases}$$

In the following, we present a scenario inspired by Gabszewicz et al. (2022), where consumers from two countries interact and exchange consumption experiences. We examine two distinct cases: first, when encounters occur solely within each country (*intra-country meetings*), and then, when consumers from country  $H$  interact with those from country  $L$  (*inter-country meetings*).<sup>9</sup>

During these encounters, each consumer assesses the utility level they would attain by adopting the preferences of the

<sup>6</sup>We relax this assumption in the Appendix.

<sup>7</sup>We will use the parameter  $\gamma$  to identify the effects of nationalism on the market solution and welfare.

<sup>8</sup>See Balabanis and Diamantopoulos (2004) for an in-depth discussion of this issue.

<sup>9</sup>We do not need to impose much structure on the number of individuals who meet.

individuals they meet. They compare their actual utility level based on their own preferences with the utility gained through mimicking. Such comparisons may prompt a change in preference if mimicking others leads to a utility benefit. Consequently, encounters can induce either an expansion or a reduction of nationalism. Ultimately, these shifts in preference may alter the demand for goods, thereby affecting the market equilibrium.

We assume consumers live for three periods: in the first period, they make market choices by purchasing either of the two goods. In the second period, they engage in (either intra or inter-country) encounters and exchange experiences, while in the third period, they return to the market to make purchases based on the updated preferences established during the encounters.

In the subsequent sections of the paper, we analyze the properties of market equilibrium prices and quantities, as well as the impact of nationalism and encounters on welfare. Initially, we concentrate on intra-country meetings, before examining the effects of inter-country interactions.

## 4 Nationalism and free trade

Assume for the time being that consumers only meet with their compatriots in domestic meetings. *It is important to highlight that these types of meetings bring no changes in preferences since consumers in each country share the same preferences.* It follows that the market solution of the first and third period fully coincide and *comparing the market solution at equilibrium in this scenario with the standard solution of VPD highlights the impact of nationalism.*

The indifferent consumer between buying the national variant and the foreign one, in country  $H$  and country  $L$ ,  $\theta_H(p_h, p_l)$  and  $\theta_L(p_h, p_l)$ , respectively write as

$$\theta_H(p_h, p_l) = \frac{p_h - p_l - 2\beta(\gamma u_h - u_l)}{u_h - u_l} \text{ and } \theta_L(p_h, p_l) = \frac{p_h - p_l}{u_h - u_l}$$

with  $a < \theta_H(p_h, p_l) < b$  and  $a < \theta_L(p_h, p_l) < b$ . As mentioned, considering  $\beta = 0$ , we recover the expression of the marginal consumer in the classical model of vertical differentiation. In the present framework, the demand functions faced by firms  $H$  and  $L$  write, respectively, as

$$x_h = (b - \theta_h(p_h, p_l)) + (b - \theta_l(p_h, p_l)) \text{ and } x_l = (\theta_h(p_h, p_l) - a) + (\theta_l(p_h, p_l) - a). \quad (3)$$

In each  $x_i$ ,  $i = h, l$ , the first term  $b - \theta_i(p_i, p_j)$ ,  $i = h, l$ , is the domestic demand function and the second,  $b - \theta_j(p_i, p_j)$ ,  $j = h, l$ , is the foreign demand function. Maximizing the profit function of firm  $i$ ,  $\Pi_i = x_i p_i$ , with  $i = h, l$  we get the equilibrium price  $p_i^*$ :

$$p_h^* = \frac{2b - a}{3}(u_h - u_l) + \frac{(\gamma u_h - u_l)\beta}{3} \text{ and } p_l^* = \frac{b - 2a}{3}(u_h - u_l) - \frac{(\gamma u_h - u_l)\beta}{3}. \quad (4)$$

with  $p_l^* > 0$  iff  $\gamma < \gamma^* \equiv \frac{(u_h - u_l)(b - 2a) + \beta u_l}{\beta u_h}$  with  $b - 2a > \beta$ , which we assume hereafter.

The expressions of the equilibrium marginal consumers  $\theta_h^*$  and  $\theta_l^*$  in countries  $H$  and  $L$ , at the equilibrium prices, obtain as

$$\theta_h^* = \frac{a + b}{3} - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)} \text{ and } \theta_l^* = \frac{a + b}{3} + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}$$

where  $\theta_h^* - \theta_l^* = -2\beta \frac{\gamma u_h - u_l}{u_h - u_l} < 0$ ; and  $a < \theta_h^* < \theta_l^* < b$  in our interval  $\gamma < \gamma^*$ . Nationalism in country  $H$  alters the market shares of each firm in both markets. It reduces the market share of good  $h$  in country  $L$  but increases the corresponding market share in country  $H$ . A group of consumers residing in country  $H$ , who would typically purchase the imported good

$l$  in the absence of nationalism, opt for the domestic good  $h$  when nationalism is present ( $\partial\theta_h^*/\partial\gamma < 0$ ). In country  $L$ , consumers who would typically purchase the imported good  $H$  in the absence of nationalism now opt for the domestic good  $L$  ( $\partial\theta_l^*/\partial\gamma > 0$ ).

The following equilibrium level of quantities are produced for each variant:

$$x_h^* = \frac{2(2b - a + \beta\gamma)u_h - (2b - a + \beta)u_l}{3(u_h - u_l)} \text{ and } x_l^* = \frac{2(b - 2a - \beta\gamma)u_h - (b - 2a - \beta)u_l}{3(u_h - u_l)}, \quad (5)$$

where positivity of  $x_l^*$  is assured by  $\gamma < \gamma^*$ . It follows that the equilibrium profits ( $\Pi_h^*, \Pi_l^*$ ) are

$$\Pi_h^* = \frac{2[(2b - a + \beta)u_l - (2b - a + \beta\gamma)u_h]^2}{9(u_h - u_l)} \text{ and } \Pi_l^* = \frac{2((2a - b + \beta\gamma)u_h + (b - 2a - \beta)u_l)^2}{9(u_h - u_l)}.$$

We are now in the position to analyse the effect of nationalism on the market solution. When considering country  $H$ , we find that  $\partial p_h^*/\partial\gamma > 0$  and  $\partial x_h^*/\partial\gamma > 0$ . Whereas in country  $L$ , it holds that  $\partial p_l^*/\partial\gamma < 0$  and  $\partial x_l^*/\partial\gamma < 0$ . Hence,

**Lemma 1** *Nationalism emerging in country  $H$  leads to an upward shift in both the price and the total quantity produced of good  $h$  (i.e.  $\partial p_h^*/\partial\gamma > 0$  and  $\partial x_h^*/\partial\gamma > 0$ ), thereby undoubtedly increasing the profits of domestic high-quality firm located in country  $H$ . In contrast, nationalism decreases the profits of low-quality firm located in country  $L$ , as both the price and quantity of good  $l$  decrease (i.e.  $\partial p_l^*/\partial\gamma < 0$  and  $\partial x_l^*/\partial\gamma < 0$ ).*

The high-quality firm is in a "the-winner-takes-it-all" position. Nationalism comes along with an additional utility benefit for nationalist consumers. This utility benefit acts as a premium for firm  $H$ , whose equilibrium price and the corresponding demand increases at the expense of the low-quality good.<sup>10</sup> In contrast, nationalism hurts firm  $L$ : its total demand decreases despite the increase in the domestic demand component. In fact, at equilibrium, firm  $L$  exports less.

Nationalism has an unforeseen impact on prices. The inherent nationalist utility gain for consumers in country  $H$  disrupts the strategic complementarity of prices. Despite prices being strategic complements in the vertical differentiation model, the rise in  $p_h^*$  does not lead to an increase in  $p_l^*$ . This is because the dissatisfaction of purchasing the foreign variant in country  $H$  diminishes the market power of firm  $L$ . In order to offset this dissatisfaction and maintain market share, firm  $L$  does not raise but decreases  $p_l^*$  when  $p_h^*$  increases. Accordingly nationalist utility benefit has a greater impact on the market solution rather than strategic price complementarity, which increases  $p_h^*$  and reduces  $p_l^*$ .

## 4.1 Welfare analysis

Using the equilibrium prices, we turn now to welfare effects of nationalism appearing in  $H$ . Considering total consumer surplus and total producer surplus, we prove the following:

**Proposition 1** *Nationalism emerging in country  $H$  improves overall welfare on a global scale, but its impact varies significantly across countries, firms and consumers:*

- (i) *Welfare increases in country  $H$  but it decreases in country  $L$*
- (ii) *For firm's profit see **Lemma 1**.*
- (iii) *Consumers buying the domestic goods in each country are better off, while consumers buying the foreign good may be worse off.*

<sup>10</sup>It is worth noting that our finding on *the-winner-takes-it-all position* is in line with the empirical evidence showed by European Commission in its analysis of the EU28 food and drink sector. See for further details "Study on economic value of EU quality schemes, geographical indications (GIs) and traditional specialities guaranteed (TSGs) – Final report" (2021).



**Proof.** See Appendix A. ■

In Appendix A, we investigate the various impacts of nationalism on consumer welfare and firms' profits in both countries.

In country  $H$ , despite the decrease in the price of the low-quality good due to nationalism, consumers with low willingness to pay may still face losses. This apparent paradox arises because, for low values of the parameter  $\gamma$ , the frustration from purchasing the foreign good outweighs the benefit of the reduced price  $p_l^*$ . Only when  $\gamma$  is sufficiently low does the positive effect of a lower price adequately compensate for consumer frustration. Conversely, consumers with high willingness to pay benefit from nationalism, as the utility gained from consuming the domestic good outweighs the high price  $p_h^*$ .

In country  $L$ , nationalism's emergence in country  $H$  triggers spillover effects, leading to a complex picture where consumers with high willingness to pay are worse off as they face high price  $p_h^*$ . Concurrently, consumers with low willingness to pay benefit from lower price  $p_l^*$ .

Hence, nationalism has its winners and losers both among firms and consumers with different disposable income levels. This intricate interplay underscores the multifaceted nature of the effects of nationalism on welfare across different classes of consumers and different firms.

## 5 Nationalism, free trade, and inter-country meetings

We now describe a setting where consumers of the two countries meet and exchange experiences. These encounters may induce a change in preferences: nationalistic preferences may be acquired by consumers living in country  $L$ . As a consequence, the individual consumption choice may change, thereby leading to a different market demand for firms.

### 5.1 Inter-country meetings

In each meeting, individuals exchange information about their consumption habits. Accordingly, these encounters can generate the dissemination or the suppression of nationalism.

Encounters may happen among people consuming the same good  $h - h$  or  $l - l$ ; but also different ones  $h - l$  or  $l - h$ .

#### 5.1.1 Meetings among consumers with the same consumption good

Two complementary types of encounters take place: *i*) consumers in  $H$  buying  $l$  meet consumers in  $L$  buying  $l$ , i.e.  $l - l$  and *ii*) consumers in  $H$  buying  $h$  meet consumers in  $L$  buying  $h$ , i.e.  $h - h$ .

**Meetings among consumers buying the low-quality variant** In this scenario, an individual of country  $H$  consuming variant  $l$  with utility  $U_l^N(\theta) = \theta u_l - p_l - \beta(\gamma u_h - u_l)$  meets someone living in  $L$  consuming the same variant  $l$  with utility  $V_l(\theta) = \theta u_l - p_l$ . Although they buy the same good, due to their different preferences their levels of utility differ at each price. The consumer in country  $H$  is not consuming the national good. Thus, they are penalized by nationalism. They consider what their utility level would be if they were to mimic the preferences of the individual they meet. To this aim, they compare the utility level of their actual preferences  $U_l^N(\theta)$  with their utility obtained if they were not nationalist, i.e.  $U_l(\theta)$ .<sup>11</sup> The consumer in  $L$  makes the same consideration: what would be their utility if they became nationalist, i.e.  $V_l(\theta)$  vs  $V_l^N(\theta)$ . Note that utility  $U_l^N(\theta)$  is different from  $V_l^N(\theta)$ . Indeed, nationalism in country  $L$  would generate an additional

<sup>11</sup> Admittedly, we assume that consumers correctly understand whether their meeting partners are nationalist. We could assume, as in Fudenberg and Glenn (1995), that information about the others attitudes are learned correctly with a certain probability. For the purpose of our paper, this hypothesis would bring technical complications without improving the main message.

benefit  $\beta(\gamma u_l - u_h)$  for a consumer buying  $l$ . Accordingly, their utility would write as  $V_l^N(\theta) = \theta u_l - p_l + \beta(\gamma u_l - u_h)$  where by construction  $\gamma u_l - u_h > 0$ .

These comparisons for each agent participating in the meeting are specified as follows:

$$H : U_l^N(\theta) - U_l(\theta) = \theta u_l - p_l - \beta(\gamma u_h - u_l) - (\theta u_l - p_l) = -\beta(\gamma u_h - u_l) < 0 \text{ for any } \theta \in [a, \theta_h^*],$$

$$L : V_l(\theta) - V_l^N(\theta) = \theta u_l - p_l - (\theta u_l - p_l + \beta(\gamma u_l - u_h)) = -\beta(\gamma u_l - u_h) < 0 \text{ for any } \theta \in [a, \theta_l^*].$$

If there is a utility benefit, the nationalist consumer consuming variant  $l$  in country  $H$  abandons nationalism, whereas not nationalist consumers located in  $L$  consuming  $l$ , now become nationalist.

**Meetings among agents consuming the high-quality variant** In this case, nationalist consumers in  $H$  buying  $h$  meet consumers in  $L$  buying the same variant  $h$ . Thus, comparing the utility functions as described above, we obtain the following:

$$H : U_h^N(\theta) - U_h(\theta) = [\theta u_h - p_h + \beta(\gamma u_h - u_l)] - (\theta u_h - p_h) > 0 \text{ for any } \theta \in [\theta_h^*, b],$$

$$L : V_h(\theta) - V_h^N(\theta) = \theta u_h - p_h - (\theta u_h - p_h - \beta(\gamma u_h - u_l)) > 0 \text{ for any } \theta \in [\theta_l^*, b].$$

No change occurs due to this type of encounter: consumers in  $H$  buying  $h$  continue their nationalism, whereas consumers in  $L$  remain non nationalist.

### 5.1.2 Meetings among consumers with different consumption goods

Similarly to the above, two complementary types of encounters take place. *i*) Consumers in  $H$  buying  $l$  meet consumers in  $L$  buying  $h$ , and *ii*) consumers in  $H$  buying  $h$  meet consumers in  $L$  buying  $l$ .

**Meetings among consumers buying  $l$  in  $H$  with consumers buying  $h$  in  $L$**  In line with the above analysis, to investigate any preference change we make the following comparisons. The consumer in  $H$  wonders what their utility would be if they change their preference and abandon nationalism, whereas the consumer in  $L$  wonders what her utility would be as a nationalist:

$$H : U_l^N(\theta) - U_l(\theta) = \theta u_l - p_l - \beta(\gamma u_h - u_l) - (\theta u_l - p_l) < 0 \text{ for any } \theta \in [a, \theta_h^*],$$

$$L : V_h(\theta) - V_h^N(\theta) = \theta u_h - p_h - (\theta u_h - p_h - \beta(\gamma u_h - u_l)) > 0 \text{ for any } \theta \in [\theta_l^*, b].$$

It follows that nationalist consumers in  $H$  abandon nationalism, while consumers in  $L$  do not change. Interestingly, in this scenario all consumers meeting each other end up abandoning nationalism.

**Meetings among consumers buying  $h$  in  $H$  with consumers buying  $l$  in  $L$**  By symmetry with the above, we consider the difference in the utility function to see whether an attitude change may be observed:

$$H : U_h^N(\theta) - U_h(\theta) = [\theta u_h - p_h + \beta(\gamma u_h - u_l)] - (\theta u_h - p_h) > 0 \text{ for any } \theta \in [\theta_h^*, b],$$

$$L : V_l(\theta) - V_l^N(\theta) = \theta u_l - p_l - [(\theta u_l - p_l) + \beta(\gamma u_l - u_h)] < 0 \text{ for any } \theta \in [a, \theta_l^*].$$

Hence, consumers in  $L$  buying  $l$  and meeting consumers in  $H$  buying  $h$  become nationalistic, whereas consumer  $H$  buying  $h$  do not change their preferences. In this scenario, all consumers become nationalists.

To summarize, we have that

**Remark** *After inter-country meetings, in both countries only consumers buying the domestic good are nationalists.*

## 5.2 The impact of inter-country meetings

We are now in the position to characterize the market solution at equilibrium after meetings. This will allow us to verify both the effects of inter-country meetings in the market in presence of nationalism (Lemma 2) and to ascertain whether these meetings amplify or mitigate the impact of nationalism (Lemma 3). In particular, to this aim, we first compare the equilibrium values in absence and presence of inter-country meetings and then we also see how these values differ from the equilibrium market solution of a standard model of VPD, i.e. where nationalism does not arise ( $\beta = 0$ ).

### 5.2.1 Market solution after meetings

Once inter-country meetings take place, firms  $H$  and  $L$  define their equilibrium prices taking into account the demand functions that encompass the "new" preferences generated by the encounters.

To characterize the market solution, we first define the marginal consumers, thereby writing the corresponding profit functions. Following from the **Remark**, the expression of the marginal consumers in countries  $H$  and  $L$  follows from the indifference conditions:

$$H : \theta u_l - p_l = \theta u_h - p_h + \beta(\gamma u_h - u_l) \text{ and } L : \theta u_l - p_l + \beta(\gamma u_l - u_h) = \theta u_h - p_h$$

The marginal consumers in  $H$  and in  $L$  write, respectively, as

$$\theta_h(p_h, p_l) = \frac{p_h - p_l - \beta(\gamma u_h - u_l)}{u_h - u_l} \text{ and } \theta_l(p_h, p_l) = \frac{p_h - p_l + \beta(\gamma u_l - u_h)}{u_h - u_l}$$

where  $a < \theta_h(p_h, p_l) < b$  and  $a < \theta_l(p_h, p_l) < b$ . Thus, using the demand functions in **(3)**, for firms  $l$  and  $h$  profit function maximization yields the equilibrium prices  $p_h^{**}$  and  $p_l^{**}$ :

$$p_h^{**} = \frac{(u_h - u_l)(2(2b - a) + \beta(1 + \gamma))}{6} \text{ and } p_l^{**} = \frac{(u_h - u_l)(2(b - 2a) - \beta(1 + \gamma))}{6}$$

with  $p_l^{**} > 0$  satisfied with  $\gamma < \gamma^*$ . The expression of the marginal consumers evaluated at these prices are

$$\theta_h^{**} = \frac{(a + b)}{3} - \frac{\beta(\gamma u_l - u_h) + 2\beta(\gamma u_h - u_l)}{3(u_h - u_l)}$$

and

$$\theta_l^{**} = \frac{(a + b)}{3} + \frac{\beta(\gamma u_h - u_l) + 2\beta(\gamma u_l - u_h)}{3(u_h - u_l)}$$

with  $\theta_h^{**} < \theta_l^{**}$  and  $a < \theta_h^{**} < \theta_l^{**} < b$  for  $\gamma < \gamma^*$ .

It follows that the total equilibrium quantities produced of the high-quality variant and of the low-quality variant are

$$x_h^{**} = \frac{2(2b - a) + \beta(1 + \gamma)}{3} \text{ and } x_l^{**} = \frac{2(b - 2a) - \beta(1 + \gamma)}{3}.$$

And finally, the profits  $(\Pi_h^{**}, \Pi_l^{**})$  for each firm, at the equilibrium prices, are

$$\Pi_h^{**} = \frac{(u_h - u_l)(2a - 4b - \beta - \beta\gamma)^2}{18} \text{ and } \Pi_l^{**} = \frac{(u_h - u_l)(4a - 2b + \beta + \beta\gamma)^2}{18}.$$

First, we investigate the effect of encounters on market configuration in equilibrium. To this aim, notice that  $\theta_h^{**} > \theta_h^*$  for any admissible value of the parameters, and  $\theta_l^{**} < \theta_l^*$  for  $(u_h - u_l)(\gamma + 1) > (\gamma u_l - u_h)$ .<sup>12</sup> Thus, firm  $H$  serves a lower number of nationalist consumers in  $H$  and a higher number of non-nationalist consumers in  $L$ . Therefore, firm  $H$  has an incentive to lower its price due to fewer nationalist consumers opting for the domestic variant  $h$ . Alternatively, firm  $L$  serves a larger number of consumers in  $H$  who are no longer nationalist and thus no longer experience frustration when consuming  $l$ . Meanwhile, the firm  $L$  supplies to a smaller number of consumers in  $L$ , who, however, now nationalist, find an additional utility benefit in consuming  $l$ . Hence, firm  $L$  has an incentive to increase its price. From direct comparisons, we verify that

**Lemma 2** *In the presence of nationalism, inter-country meetings reduce the high-quality price ( $p_h^{**} < p_h^*$ ) and increase the low-quality price ( $p_l^{**} > p_l^*$ ). By contrast, inter-country meetings increase the quantity sold by the high quality firm ( $x_h^{**} > x_h^*$ ) and decrease the quantity sold by the low quality firm ( $x_l^{**} < x_l^*$ ).*

It is worth noting that the equilibrium market solution of the classical vertical differentiation model, i.e. the market solution at  $\beta = 0$ , is given by:

$$p_h^{VPD} = \frac{2b - a}{3} (u_h - u_l) \quad \text{and} \quad p_l^{VPD} = \frac{b - 2a}{3} (u_h - u_l)$$

where the superscript  $VPD$  denotes the equilibrium variable in the traditional model, i.e. with  $\beta = 0$  and

$$x_h^{VPD} = \frac{2(2b - a)}{3} \quad \text{and} \quad x_l^{VPD} = \frac{2(b - 2a)}{3}.$$

Comparing the equilibrium solutions, we find

$$p_h^{VPD} < p_h^{**} < p_h^*, \quad p_l^{VPD} > p_l^{**} > p_l^*$$

and

$$x_h^{**} > x_h^* > x_h^{VPD}, \quad x_l^{**} < x_l^* < x_l^{VPD}.$$

It follows that

**Lemma 3** *Inter-country meetings mitigate the impact of nationalism on prices by moderating the increase in the high-quality price and boosting the low-quality price, all while nationalism's effect is not entirely neutralized. Conversely, these meetings amplify the nationalist effect on quantity by further increasing the quantity sold of the high-quality good and further decreasing the quantity sold of the low-quality one.*

## 5.2.2 Welfare Analysis

We now turn our attention to a welfare analysis. In particular, we disentangle the impact of inter-country encounters on producer surplus and consumer surplus. To this aim, we compare equilibrium profits of firm in the presence of nationalism with and without inter-country meetings.

For tractability, we start with the producer surplus and then move on to the consumer surplus. We show in the following that

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<sup>12</sup>  $\theta_h^{**} - \theta_h^* = \frac{1}{3} \beta \frac{u_h - 2u_l + 2\gamma u_h - \gamma u_l}{u_h - u_l} > 0$  and  $\theta_l^{**} - \theta_l^* = \frac{1}{3} \beta \frac{\gamma u_l - u_h + \gamma u_l - u_h - (\gamma u_h - u_l)}{u_h - u_l}$ . Since  $\gamma u_l - u_h + \gamma u_l - u_h - (\gamma u_h - u_l) = 2(\gamma u_l - u_h) - (\gamma u_h - u_l)$ , a sufficient condition for  $\theta_l^{**} < \theta_l^*$  is  $u_h > 2u_l$ .

**Lemma 4** *In the realm of nationalism, inter-country meetings prove detrimental to the profits of high-quality firm while being advantageous for the low-quality producer. However, these encounters result in a reduction of the total producer surplus.*

**Proof.** Direct comparison of  $\Pi_h^{**}$  and  $\Pi_h^*$  yields that  $\Pi_h^{**} < \Pi_h^*$  if  $\gamma > \frac{\beta(3u_l - u_h) - 4(u_h - u_l)(2b - a)}{\beta(3u_h - u_l)}$ ; a condition always satisfied because  $\frac{\beta(3u_l - u_h) - 4(u_h - u_l)(2b - a)}{\beta(3u_h - u_l)} < 1$ . For the low-quality firm we have  $\Pi_l^{**} > \Pi_l^*$  if  $\frac{(b(4u_h - 4u_l) - \beta(u_h - 3u_l) - a(8u_h - 8u_l))}{\beta(3u_h - u_l)} > \gamma$ , which is verified for any admissible  $\gamma$  as  $\frac{(b(4u_h - 4u_l) - \beta(u_h - 3u_l) - a(8u_h - 8u_l))}{\beta(3u_h - u_l)} > \gamma^*$ . Finally, the sign of  $(\Pi_l^{**} - \Pi_l^*) + (\Pi_h^{**} - \Pi_h^*) \gtrless 0$  for  $\gamma \gtrless \ddot{\gamma}$  where  $\ddot{\gamma} \equiv \frac{(\beta(u_h - 3u_l) + 2(u_h - u_l)(a + b))}{\beta(-3u_h + u_l)} < 1$ , hence  $(\Pi_l^{**} - \Pi_l^*) + (\Pi_h^{**} - \Pi_h^*) < 0$  for any  $\gamma$  in the feasible set.

In the presence of nationalism, international encounters lead to the high-quality firm facing increased demand but selling at a lower price, significantly impacting negatively its profitability. Conversely, for the low-quality firm, international encounters result in higher prices and decreased demand. However, unlike the high-quality firm, the increased price compensates for the reduced demand. Ultimately, international encounters are detrimental for total producer surplus because the loss of the high-quality firm offsets the benefit of the low-quality firm. This result is interesting because it is in clear contrast with the classical results of international trade theory, which argues that openness amplifies market demand, positively affecting firms. Prior works (Bernard et al, 2006 among others) suggest that if there are losers among producers these are the low-quality firms, which are dampened by the high-quality ones. In our setting, the opposite actually occurs. Our findings suggest that the welfare results of openness can be quite unpredictable if we take into account changes in the preferences of consumers due to international meetings.

We turn now to the analysis of the consumer surplus, where we show that

**Lemma 5.** *In the realm of nationalism, inter-country meetings increase consumer surplus in country H only when income inequality is high; otherwise, they tend to be disadvantageous for its citizens. Conversely, such encounters are always beneficial for consumers in country L. Ultimately, inter-country meetings contribute to an overall increase in global consumer surplus.*

**Proof.** See Appendix B. ■

The underlying rationale for this outcome is as follows: According to Lemma 2, the price of the high-quality variant decreases, which positively impacts consumers purchasing variant  $h$ . However, the higher price of the low-quality good adversely affects consumers buying variant  $l$ . This implies that in country H, individuals with lower incomes suffer from increased prices, while those with higher incomes benefit from reduced prices. The greater the advantage for high-income consumers, the more likely it is that inter-country meetings are beneficial overall for consumers in country  $H$ . Meanwhile, these meetings offer advantages for consumers in country  $L$ . Residents of  $L$  who purchase the low-quality domestic product now experience an additional benefit from nationalism. Those consuming variant  $h$  benefit from lower prices resulting from these meetings. Consequently, nationalism proves advantageous for consumers in country  $L$ .

The above Lemma opens the door to a further consideration. Income inequalities moderate the effects of increased mobility among countries via exchanges in attitudes or preferences, which in turn shape the effects of international trade. This sheds new light on the evaluation of international agreements among states presenting very different levels of income inequality.

Turning to the country-specific welfare analysis, and assuming that  $u_h \in (2u_h, 5u_l)$ , we can prove the following:

**Proposition 2** *Inter-country meetings are welfare-improving in country L, whereas they are unambiguously welfare-detrimental in country H.*

**Proof.** See Appendix C. ■

As far as country  $H$  is concerned, we know that the firm producing  $h$  and consumers with low willingness to pay are unambiguously worse off due to international encounters. The firm producing  $h$  suffers a decrease in its price whereas poor consumers face a higher price  $p_i^{**}$ . **Proposition 3** establishes that these losses are so large that the benefit obtained by the remaining consumers is not sufficient to offset them.

It is interesting to note that globalized meetings among individuals have a surprising impact on the country where nationalism originates. This is in sharp contrast with the view that nationalism is a means to guarantee broad protection for a regional/national economy against the disruptive effects of globalization.

### 5.2.3 Do inter-country meetings disseminate nationalism?

Finally, we now explore whether international encounters disseminate nationalism from country  $H$  to country  $L$ . In particular, we are interested in investigating whether the total number of agents exhibiting nationalism exceeds the number of nationalists after inter-country meetings. To do this, we compare the number of nationalist agents, namely  $(0, \theta_l^{**}) + (\theta_h^{**}, 1)$  with 1, which represents the initial pool of nationalists. We find that

**Proposition 3** *Inter-country meetings suppress nationalism despite partly disseminating it from country  $H$  to country  $L$ .*

As observed above, there is a dynamic shift in nationalism among agents in countries  $H$  and  $L$ . **Proposition 3** illustrates that the total number of consumers abandoning nationalism in  $H$  exceeds the number of non-nationalists in  $L$  transitioning into nationalists. Specifically, international encounters diminish nationalism in  $H$ :  $\theta_H^{**} - \theta_H^* > 0$ , while they foster it in  $L$ . This may initially appear counterintuitive, given that nationalism typically entails utility benefits. However, it's crucial to remember that nationalism also entails frustration when consuming foreign goods. In the equilibrium market solution, only consumers purchasing the national good are nationalists, while those purchasing foreign goods are not.

Nationalism is intricately linked with income and willingness to pay. When income permits the purchase of the foreign high-quality good, consumers in  $L$  tend to eschew nationalism. Conversely, when income is limited and only allows for the acquisition of the low-quality good, consumers in  $H$  tend to relinquish nationalism and opt for good  $L$  without experiencing frustration. Consumers with lower incomes in country  $L$  adopt nationalism when consuming their national good because it offers utility benefits.

## 6 Conclusion

In this paper, we have examined the relationship between consumer nationalism and globalization, exploring their impacts on markets and welfare. Through the lens of vertical product differentiation, we have examined scenarios both with and without cross-country encounters, shedding light on how these dynamics shape market outcomes and consumer behavior. Our analysis reveals the significant influence of consumer nationalism on market solutions, particularly in scenarios where consumers are isolated from those with differing consumption attitudes. In such contexts, nationalism can lead to price shifts, quantity adjustments, and changes in consumer welfare, with implications for both domestic and foreign producers.

Moreover, our investigation highlights the role of globalization in moderating the effects of nationalism. Inter-country meetings offer opportunities for consumers to exchange consumption information and potentially adjust their attitudes, thereby mitigating some of the nationalist biases observed in isolated scenarios. However, globalization also brings about

challenges, as the exchange of consumption habits may lead to unexpected shifts in market dynamics, with implications for both domestic and global welfare.

One particularly noteworthy finding is the nuanced relationship between nationalism and welfare. While nationalism may initially benefit the country from which it originates, the spread of nationalism through globalization can ultimately lead to decreased consumer surplus in that country. This underscores the complexity of consumer nationalism as a policy tool, suggesting that its economic justification may be contingent upon factors such as social isolation and income inequality.

In conclusion, our analysis underscores the importance of considering both consumer nationalism and globalization in shaping market outcomes and welfare. By understanding the interplay between these forces, policymakers can better anticipate the economic and social consequences of nationalist policies and strive to foster environments that promote mutual understanding and cooperation across borders.

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## 7 Appendix

### Appendix A: Proof of Proposition 2.

For the purpose of this Appendix, recall that the equilibrium prices and marginal consumer’s expression in the classical vertical differentiation model (where nationalim is absent) are easily obtained by setting  $\beta = 0$  in our framework. By doing so, we obtain:



$$p_h^{VPD} = \frac{2b-a}{3}(u_h - u_l), p_l^{VPD} = \frac{b-2a}{3}(u_h - u_l), \theta_h^{VPD} = \theta_l^{VPD} = \frac{a+b}{3}.$$

The change in consumer surplus,  $\Delta CS_H^*$ , in country  $H$ , in presence  $CS_H^*$  and in absence  $CS_H^{VPD}$  of nationalism write as follows:

$$\Delta CS_H^* = CS_H^* - CS_H^{VPD} = \Delta CS_{LWP} + \Delta CS_{IWP} + \Delta CS_{HWP} \quad (6)$$

where

$$\Delta CS_{LWP} = \int_a^{\frac{1}{3}(a+b) - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)}} ([\theta_l u_l - p_l^* - \beta(u_h \gamma - u_l)] - [(\theta_l u_l - p_l^{VPD})]) d\theta$$

$$\Delta CS_{IWP} = \int_{\frac{1}{3}(a+b) - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^{\frac{1}{3}(a+b)} ([\theta u_h - p_h^* + \beta(\gamma u_h - u_l)] - [\theta u_l - p_l^{VPD}]) d\theta$$

and

$$\Delta CS_{HWP} = \int_{\frac{1}{3}(a+b)}^b ([\theta u_h - p_h^* + \beta(\gamma u_h - u_l)] - [\theta u_h - p_h^{VPD}]) d\theta$$

with  $LWP$ ,  $IWP$  and  $HWP$  standing for low, intermediate and high willingness to pay, respectively. Using equilibrium prices for the two scenarios,  $p_h^{VPD}$ ,  $p_l^{VPD}$  and  $p_h^*$ ,  $p_l^*$  we get

$$\Delta CS_{LWP} = \frac{2}{9}\beta(\gamma u_h - u_l) \frac{-(u_h - u_l)(b - 2a) + 4\beta(\gamma u_h - u_l)}{u_h - u_l} \geq 0 \Leftrightarrow \gamma \geq \gamma_{LWP} \equiv \frac{(b - 2a)(u_h - u_l) + 4\beta u_l}{4\beta u_h}$$

with  $\gamma_{LWP} < \gamma^*$ . For the two other sets of consumers we obtain:

$$\Delta CS_{IWP} = 0,$$

and

$$\Delta CS_{HWP} = \frac{2}{9}\beta(2b - a)(\gamma u_h - u_l) > 0,$$

Hence, substituting  $\Delta CS_{HWP}$ ,  $\Delta CS_{IWP}$ ,  $\Delta CS_{LWP}$  into (6) and rearranging, we obtain the total change in consumers' surplus in country  $H$ :

$$\Delta CS_H^* = \frac{2}{9}\beta(\gamma u_h - u_l) \frac{(u_h - u_l)(a+b) + 4\beta(\gamma u_h - u_l)}{u_h - u_l} > 0$$

The consumer surplus in country  $L$ , in presence,  $CS_L^*$ , and in absence,  $CS_L^{VPD}$ , of nationalism in  $H$  write as follows:

$$\Delta CS_L^* = CS_L^* - CS_L^{VPD} = \Delta CS_{lwp} + \Delta CS_{iwp} + \Delta CS_{hwp} \quad (7)$$

where

$$\Delta CS_{lwp} = \int_a^{\frac{1}{3}(a+b)} ([\theta_l u_l - p_l^*] - [(\theta_l u_l - p_l^{VPD})]) d\theta$$

$$\Delta CS_{iwp} = \int_{\frac{1}{3}(a+b)}^{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}} ([\theta u_l - p_l^*] - [\theta u_h - p_h^{VPD}]) d\theta$$

$$\Delta CS_{hwp} = \int_{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^b ([\theta u_h - p_h^*] - [\theta u_h - p_h^{VPD}]) d\theta = \int_{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^b (-p_h^* + p_h^{VPD}) d\theta$$

Using  $p_h^{VPD}$ ,  $p_l^{VPD}$ ;  $p_h^*$  and  $p_l^*$ , we get

$$\Delta CS_{lwp} = \frac{1}{9}\beta(\gamma u_h - u_l)(b - 2a) > 0,$$

$$\Delta CS_{iwp} = 0,$$

$$\Delta CS_{hwp} = \frac{1}{9}\beta(\gamma u_h - u_l) \frac{-(u_h - u_l)(2b - a) + 2\beta(\gamma u_h - u_l)}{u_h - u_l}.$$

At the first sight, the sign of  $\Delta CS_{hwp}$  is ambiguous. However, it holds that  $\Delta CS_{hwp} \geq 0 \iff \gamma \geq \gamma_{hwp} \equiv \frac{(2\beta u_l + (u_h - u_l)(2b - a))}{2\beta u_h}$ .

Since  $\gamma_{hwp} > \gamma^*$  and the admissible range of  $\gamma$  is  $]1, \gamma^*[$ , it follows

$$\Delta CS_{hwp} < 0.$$

Hence, substituting  $\Delta CS_{lwp}$ ,  $\Delta CS_{iwp}$ ,  $\Delta CS_{hwp}$  into (7) and rearranging, we obtain the total change in consumers' surplus in country  $L$ :

$$\Delta CS_L = \beta(\gamma u_h - u_l) \frac{-(u_h - u_l)(a + b) + 2\beta(\gamma u_h - u_l)}{9(u_h - u_l)}.$$

Again, the sign of  $\Delta CS_L$  is not obvious. However,  $\Delta CS_L \geq 0 \iff \gamma \geq \gamma_L \equiv \frac{1}{2\beta u_h}(2\beta u_l + (a + b)(u_h - u_l))$  with  $\gamma^* \geq \gamma_L \iff b \geq 5a$ . Since by assumption  $b < 4a$ , it follows that  $\gamma^* < \gamma_L$ . Hence, since it must be that  $\gamma < \gamma_L$ , we have that

$$\Delta CS_L < 0.$$

Total Consumer Surplus,  $\Delta CS$ , in both countries is then

$$\Delta CS = \frac{1}{9}\beta(\gamma u_h - u_l) \frac{(u_h - u_l)(a + b) + 10\beta(\gamma u_h - u_l)}{u_h - u_l} > 0$$

The total producers' surplus is  $\Delta \Pi = \Delta \Pi_H + \Delta \Pi_L$ , where  $\Delta \Pi_H$  and  $\Delta \Pi_L$  are profit changes for each firm. Using  $\Pi_h^*$  and  $\Pi_l^*$ , as well as  $\Pi_h^{VPD} = \frac{2}{9}(a - 2b)^2(u_h - u_l)$  and  $\Pi_l^{VPD} = \frac{2}{9}(2a - b)^2(u_h - u_l)$ , we obtain

$$\Delta \Pi = \frac{2}{3}(u_h - u_l)(2bu_h - 2bu_l + \beta\gamma u_h - \beta u_l)(\gamma u_h - u_l)\beta > 0.$$

Hence, both the consumer and producer surplus increase in presence of nationalism.

## Appendix B: Proof of Lemma 5.

The consumer surplus change,  $\Delta CS_H^{**}$ , in country  $H$ , after inter-country meetings  $CS_H^{**}$  and before meetings  $CS_H^*$  write as follows:

$$\Delta CS_H^{**} = CS_H^{**} - CS_H^* = \Delta CS_{LWP} + \Delta CS_{IWP} + \Delta CS_{HWP}$$

where

$$\Delta CS_{LWP} = \int_a^{\frac{1}{3}(a+b) - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)}} ([\theta_l u_l - p_l^{**}] - [\theta_l u_l - p_l^* - \beta(u_h \gamma - u_l)]) d\theta$$

$$\Delta CS_{IWP} = \int_{\frac{1}{3}(a+b) - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^{\frac{1}{3}(a+b) + \frac{\beta(u_h - \gamma u_l) - 2\beta(\gamma u_h - u_l)}{3(u_h - u_l)}} ([\theta u_l - p_l^{**}] - [\theta u_h - p_h^* + \beta(\gamma u_h - u_l)]) d\theta$$

$$\Delta CS_{HWP} = \int_{\frac{1}{3}(a+b) - \frac{4(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^{\frac{1}{3}(a+b) + \frac{\beta(u_h - \gamma u_l) - 2\beta(\gamma u_h - u_l)}{3(u_h - u_l)}} ([\theta u_h - p_h^{**} + \beta(\gamma u_h - u_l)] - [\theta u_h - p_h^* + \beta(\gamma u_h - u_l)]) d\theta$$

with *LWP*, *IWP* and *HWP* stand for low, intermediate and high willingness to pay in country *H*, respectively. Using  $p_h^{**}; p_l^{**}$  and  $p_h^*; p_l^*$

$$\Delta CS_{LWP} = -\frac{1}{18}\beta(u_h - 5u_l + 5\gamma u_h - \gamma u_l) \frac{(b - 2a)(u_l - u_h) + 4\beta(\gamma u_h - u_l)}{u_h - u_l} < 0 \text{ given } \gamma < \gamma^*$$

$$\Delta CS_{IWP} = \frac{1}{6}\beta^2(u_h - \gamma u_l + 2\gamma u_h - 2u_l) \frac{\gamma u_h - u_l}{u_h - u_l} > 0$$

$$\Delta CS_{HWP} = -\frac{1}{18}\beta(\gamma - 1)(u_h + u_l) \frac{(u_h - u_l)(a - 2b) - \beta(\gamma u_l - u_h + 2\gamma u_h - 2u_l)}{u_h - u_l} > 0$$

Hence,

$$\Delta CS_H^{**} = -\frac{1}{18}\beta(u_h - 5u_l + 5\gamma u_h - \gamma u_l) \frac{2au_h - bu_h - 2au_l + bu_l - 4\beta u_l + 4\beta\gamma u_h}{u_h - u_l} + \frac{1}{6}\beta^2(u_h - \gamma u_l + 2\gamma u_h - 2u_l) \frac{\gamma u_h - u_l}{u_h - u_l} +$$

$$-\frac{1}{18}\beta(\gamma - 1)(u_h + u_l) \frac{(u_h - u_l)(a - 2b) - \beta(\gamma u_l - u_h + 2\gamma u_h - 2u_l)}{u_h - u_l}.$$

$\Delta CS_H^{**}$  is a linear and increasing function in  $b$  since the coefficient before  $b$ , i.e.  $\frac{1}{18}\beta(\gamma u_l - u_h + 7\gamma u_h - 7u_l)$  is positive.

Hence,  $\Delta CS_H^{**}$  is zero at

$$\bar{b}_H \equiv \frac{\left( \begin{array}{l} au_h^2 - 4\beta u_h u_l - 12a\gamma u_h u_l - 22\beta\gamma u_h u_l - 12au_h u_l + 11au_l^2 - \beta u_h^2 + \\ 12\beta u_l^2 + 11a\gamma u_h^2 + a\gamma u_l^2 + 4\beta\gamma u_h^2 + 4\beta\gamma u_l^2 - 4\beta\gamma^2 u_h u_l + 12\beta\gamma^2 u_h^2 - \beta\gamma^2 u_l^2 \end{array} \right)}{(u_h - u_l)(7\gamma u_h - 7u_l - u_h + \gamma u_l)}$$

where it must hold that  $\bar{b}_H > 2a + \beta$ . Using simulations, it is verifiable that the set defined by this inequality is not empty.

It follows that:

$$\text{If } b \geq \bar{b}_H, \text{ then } \Delta CS_H^{**} \geq 0. \quad (8)$$

## Country L

In country *L*, two cases arise because it is unclear where the position of the marginal consumers shifts left or right with openness. In fact,

$$\theta_L^{**} - \theta_L^* = \frac{1}{3}\beta \frac{2\gamma u_l - 2u_h + u_l - \gamma u_h}{u_h - u_l} = \frac{1}{3}\beta \frac{(2u_l - u_h)\gamma + (u_l - 2u_h)}{u_h - u_l}$$

If  $(2u_l - u_h) < 0$ , then  $\theta_L^{**} - \theta_L^* < 0$  whatever  $\gamma$ . Otherwise if  $(2u_l - u_h) > 0$  then  $\theta_L^{**} - \theta_L^* \geq 0$  if and only if  $\gamma \geq \check{\gamma} \equiv \frac{2u_h - u_l}{2u_l - u_h}$ .

The two cases are

*CASE A* : If  $(2u_l - u_h) < 0$  or  $(2u_l - u_h) > 0$  and  $\gamma < \check{\gamma}$ , then  $\theta_L^{**} < \theta_L^*$

*CASE B* : If  $(2u_l - u_h) > 0$  and  $\gamma > \check{\gamma}$ , then  $\theta_L^{**} > \theta_L^*$

We concentrate on Case A in the paper, but for completeness we develop the case B below.

CASE A:  $\theta_L^{**} < \theta_L^*$

The consumer surplus change  $\Delta CS_L^{**}$  in country  $L$ , with openness  $CS_L^{**}$  and before openness  $CS_L^*$  write as follows:

$$\Delta CS_L^{**} = CS_L^{**} - CS_L^* = \Delta CS_{lwp} + \Delta CS_{iwp} + \Delta CS_{hwp}$$

where

$$\begin{aligned} \Delta CS_{lwp} &= \int_a^{\frac{1}{3}(a+b)} (-p_l^{**} + \beta(\gamma u_l - u_h) + p_l^*) d\theta \\ \Delta CS_{iwp} &= \int_{\frac{1}{3}(a+b)}^{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}} ([\theta u_h - p_h^{**}] - [\theta u_l - p_l^*]) d\theta \\ \Delta CS_{hwp} &= \int_{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^b (-p_h^{**} + p_h^*) d\theta \end{aligned}$$

with  $lwp$ ,  $iwp$  and  $hwp$  stand for low, intermediate and high willingness to pay in country  $L$ , respectively. Using  $p_h^{**}$  and  $p_l^{**}$  and  $p_h^*$ ,  $p_l^*$ , we have

$$\begin{aligned} \Delta CS_{lwp} &= \frac{\beta(5u_h - 5\gamma u_l + \gamma u_h - u_l) \left( \begin{array}{c} (u_h - u_l)(2a - b) + \\ \beta(2u_h - 2\gamma u_l - \gamma u_h + u_l) \end{array} \right)}{18(u_h - u_l)} \stackrel{\geq}{\leq} 0 \\ &\Leftrightarrow (\gamma(u_h - 5u_l) + 5u_h - u_l) \stackrel{\leq}{\geq} 0 \end{aligned}$$

and

$$\Delta CS_{iwp} = \frac{1}{6} (u_l - u_h)^{-1} (u_h - \gamma u_l) (2u_h - u_l + \gamma u_h - 2\gamma u_l) \beta^2 \stackrel{\leq}{\geq} 0$$

whereas

$$\Delta CS_{hwp} = \left( \frac{1}{6} \beta (u_h + u_l) (\gamma - 1) \right) \left( b - \frac{1}{3} (a + b) - \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)} \right) > 0 \text{ for } \gamma < \gamma^*.$$

Hence,

$$\begin{aligned} \Delta CS_L^{**} &= \frac{\beta(5u_h - 5\gamma u_l + \gamma u_h - u_l)((u_h - u_l)(2a - b) + \beta(2u_h - 2\gamma u_l - \gamma u_h + u_l))}{18(u_h - u_l)} - \frac{1}{18} \beta (\gamma - 1) (u_h + u_l) \frac{(u_h - u_l)(a - 2b) - 2\beta(u_l - \gamma u_h)}{u_h - u_l} + \\ &+ \frac{1}{18} \beta (2u_h - 2\gamma u_l + \gamma u_h - u_l) \frac{(4(u_h - u_l)(a + b) - \beta(u_h - \gamma u_l + 6u_l - 6\gamma u_h))}{u_h - u_l} \end{aligned}$$

This is a linear and increasing function in  $b$  because the coefficient before  $b$ , denotes as  $\frac{1}{18} \beta ((5u_h - u_l)\gamma + (u_h - 5u_l))$  is greater than zero. Moreover, we prove that the value,  $\bar{b}_L$ , where  $\Delta CS_L^{**} = 0$ , is never an admissible value because  $\bar{b}_L - 2a - \beta < 0$ . In fact, given the expression of  $\bar{b}_L$ :

$$\bar{b}_L \equiv - \frac{\left( \begin{array}{c} 19au_h^2 + 5au_l^2 + 8\beta u_h^2 + 3\beta u_l^2 + 10\beta\gamma u_h^2 + 10\beta\gamma u_l^2 - 24au_h u_l + 3\beta\gamma^2 u_h^2 + \\ + 8\beta\gamma^2 u_l^2 - 10\beta u_h u_l + 5a\gamma u_h^2 + 19a\gamma u_l^2 - 10\beta\gamma^2 u_h u_l - 24a\gamma u_h u_l - 22\beta\gamma u_h u_l \end{array} \right)}{(u_h - u_l)(u_h - \gamma u_l + 5\gamma u_h - 5u_l)},$$

the sign of the difference  $\bar{b}_L - 2a - \beta$  is the sign of  $-((3\gamma^2 + 15\gamma + 9)u_h^2 + (-10\gamma^2 - 28\gamma - 16)u_h u_l + (8\gamma^2 + 11\gamma + 8)u_l^2)$ ,

which is easily verifiable to be negative. This implies that

$$\Delta CS_L^{**} > 0$$

The sign of total Consumer Surplus change in both countries :  $\Delta CS = \Delta CS_L^* + \Delta CS_H^*$  is given by (8) and (??). The sign of the  $\Delta CS_L^* + \Delta CS_H^*$  is given by the sign of the expression  $4(u_h - u_l)(5u_h - 4u_l + 4\gamma u_h - 5\gamma u_l)a - 2(u_h - u_l)(u_h + u_l)(\gamma - 1)b + \beta(7u_h^2 + 15u_l^2 + 15\gamma^2 u_h^2 + 7\gamma^2 u_l^2 - 14u_h u_l + 14\gamma u_h^2 + 14\gamma u_l^2 - 14\gamma^2 u_h u_l - 44\gamma u_h u_l)$ . This last is a negative function in  $b$  and evaluated at the lowest admissible value of  $b$  namely  $b = 2a + \beta$  is given by  $(24a + 9\beta + 12a\gamma + 12\beta\gamma + 15\beta\gamma^2)u_h^2 + (-36a - 14\beta - 36a\gamma - 44\beta\gamma - 14\beta\gamma^2)u_h u_l + (12a + 13\beta + 24a\gamma + 16\beta\gamma + 7\beta\gamma^2)u_l^2$ , which can be verified to be positively signed since  $(24a + 9\beta + 12a\gamma + 12\beta\gamma + 15\beta\gamma^2) + (12a + 13\beta + 24a\gamma + 16\beta\gamma + 7\beta\gamma^2) > -(-36a - 14\beta - 36a\gamma - 44\beta\gamma - 14\beta\gamma^2)$  and  $u_h^2 + u_l^2 > u_h u_l$ .

CASE B:  $\theta_L^{**} > \theta_L^*$

$$\Delta CS_{lwp} = \int_a^{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}} (-p_l^{**} + \beta(\gamma u_l - u_h) + p_l^*) d\theta$$

$$\Delta CS_{iwp} = \int_{\frac{1}{3}(a+b) + \frac{2(\gamma u_h - u_l)\beta}{3(u_h - u_l)}}^{\frac{1}{3}(a+b) + \frac{\beta(\gamma u_h - u_l) - 2\beta(u_h - \gamma u_l)}{3(u_h - u_l)}} ([\theta u_l - p_l^{**} + \beta(\gamma u_l - u_h)] - [\theta u_h - p_h^*]) d\theta$$

and

$$\Delta CS_{hwp} = \int_{\frac{1}{3}(a+b) + \frac{\beta(\gamma u_h - u_l) - 2\beta(u_h - \gamma u_l)}{3(u_h - u_l)}}^b (-p_h^{**} + p_h^*) d\theta$$

Using the expressions of  $p_h^{**}$ ,  $p_l^{**}$ ,  $p_h^*$  and  $p_l^*$ , we have

$$\Delta CS_{lwp} = \frac{1}{18}\beta(5u_h - 5\gamma u_l + \gamma u_h - u_l) \frac{(u_h - u_l)(2a - b) + 2\beta(u_l - \gamma u_h)}{u_h - u_l} \underset{\geq}{\leq} 0$$

$$\Delta CS_{iwp} = -\frac{1}{6}\beta^2(2u_h - 2\gamma u_l + \gamma u_h - u_l) \frac{\gamma u_l - u_h}{u_h - u_l} \underset{\leq}{\geq} 0$$

$$\Delta CS_{hwp} = -\frac{1}{18}\beta(\gamma - 1)(u_h + u_l) \frac{(u_h - u_l)(a - 2b) + \beta(2\gamma u_l - 2u_h + \gamma u_h - u_l)}{u_h - u_l} \underset{\geq}{\leq} 0$$

Hence,  $\Delta CS_L^{**} = \Delta CS_{lwp} + \Delta CS_{iwp} + \Delta CS_{hwp}$  is a linear function of  $b$  and becomes zero at

$$b = \tilde{b}_L \equiv \frac{1}{4} \frac{\left( \begin{array}{l} 181au_h^2 + 35au_l^2 + 4\beta u_h^2 - 37\beta u_l^2 - 174\beta\gamma u_h^2 - 174\beta\gamma u_l^2 - 216au_h u_l - 37\beta\gamma^2 u_h^2 + 4\beta\gamma^2 u_l^2 + \\ 174\beta u_h u_l + 35a\gamma u_h^2 + 181a\gamma u_l^2 + 174\beta\gamma^2 u_h u_l - 216a\gamma u_h u_l + 66\beta\gamma u_h u_l \end{array} \right)}{(23u_h - 4u_l + 4\gamma u_h - 23\gamma u_l)(u_h - u_l)}$$

The total consumer surplus is a linear function in  $b$  with coefficient  $(23u_l - 4u_h)\gamma + (4u_l - 23u_h)$ . Hence we shall study the sign of this coefficient in  $\gamma$ .

$$(23u_l - 4u_h)\gamma + (4u_l - 23u_h) = 0 \Leftrightarrow \gamma' = \frac{(-23u_h + 4u_l)}{4u_h - 23u_l} < 1$$

Hence,  $\tilde{\gamma} > \gamma'$

- if  $(23u_l - 4u_h) > 0$ , the coefficient  $(23u_l - 4u_h)\gamma + (4u_l - 23u_h) > 0$ , hence  $\Delta CS_L^{**} \geq 0$  if  $b \geq \tilde{b}_L$
- If  $(23u_l - 4u_h) < 0$ , then the coefficient is negative, hence  $\Delta CS_L^{**} \geq 0$  if  $b \leq \tilde{b}_L$

To summarize for CASE B in country L

$$\begin{aligned} \text{If } (23u_l - 4u_h) &> 0, \text{ then } \Delta CS_L^{**} \geq 0 \text{ if } b \geq \tilde{b}_L \\ \text{If } (23u_l - 4u_h) &< 0 \text{ then } \Delta CS_L^{**} \geq 0 \text{ if } b \leq \tilde{b}_L \end{aligned} \quad (9)$$

Total Consumer Surplus in both countries in the CASE B of country L :

$$\Delta CS = \Delta CS_L^{**} + \Delta CS_H^{**} \text{ sign depends on (8) and (9)}$$

### Appendix C: Proof of Proposition 3

In country  $L$ , the result is immediate as both the firm and consumers are better off. In country  $H$ , producer surplus change of firm located in country  $H$  is given by

$$(\Pi_h^{**} - \Pi_h^*) = \left( \frac{(\gamma - 1)(u_h + u_l)\beta}{18(u_h - u_l)} \right) \left( \begin{array}{c} 4(2b - a)(u_l - u_h) - \\ \beta u_h + 3\beta u_l - 3\beta\gamma u_h + \beta\gamma u_l \end{array} \right) < 0.$$

Thus, borrowing consumers' surplus change as shown in Appendix B, welfare change  $\Delta W_H$  in country  $H$  is given by:

$$\Delta W_H = \left( \frac{1}{18(u_h - u_l)} \right) \beta [\Gamma_1 + \Gamma_2\beta]$$

where  $\Gamma_1 = (u_l - u_h)(5a(u_h - u_l) + 7b(\gamma u_l - u_h) + 5a\gamma(u_h - u_l) + 2a(\gamma u_h - u_l) + b(\gamma u_h - u_l))$  and

$\Gamma_2 = (2u_h u_l + 26\gamma u_h u_l + 2u_h^2 - 15u_l^2 - 2\gamma u_h^2 - 2\gamma u_l^2 + 2\gamma^2 u_h u_l - 15\gamma^2 u_h^2 + 2\gamma^2 u_l^2)$  is decreasing in  $\gamma$  and negative at  $\gamma = 1$ .

Thus,  $\Delta W_H$  is unambiguously negative.

### Appendix D: Extension with nationalism in country L

For the sake of completeness, in this section we briefly explore the effects of a complementary scenario: nationalism rising from country  $L$ . In particular, we now investigate how and why nationalism in  $L$  affects market solutions and preferences.

To this aim, we define the utility function of a nationalistic consumer living in country  $L$ :

$$V^N(\theta) = \begin{cases} \theta u_h - p_h - \beta(\gamma u_l - u_h) & \text{if buying } h, \\ \theta u_l - p_l + \beta(\gamma u_l - u_h) & \text{if buying } l, \end{cases} \quad (10)$$

where  $\theta > \gamma > 1 > \beta \geq 0$ . Note that the utility level of a consumer living in  $L$  but buying good  $u_h$  is positive (i.e.  $\theta u_h - \beta(\gamma u_h - u_l) > 0$ ) since  $\frac{1}{\beta u_h}(\theta u_h + \beta u_l) > \frac{\beta + \theta}{\beta} \frac{u_l}{u_h} > \gamma$ . Consumers in  $H$  do not show nationalism. Thus, their utility function  $U(\theta)$  is standard and easily obtained by imposing  $\beta = 0$ . For the readability of the paper, the complete analysis can be obtained by the others. In the following, we briefly comment on the main results of this extension.

#### Nationalism, free trade, and inter-country meetings

In line with the analysis developed above, from standard computations and symmetrically with **Lemma 1**, we observe that the low-quality firm is now in a 'winner takes all' position. *Nationalism in L shifts up both the price and the quantity produced of good l, thereby increasing the profits of the low-quality firm. In contrast, the price and quantity of the high-quality rival decrease, yielding a corresponding reduction in profits.*

The willingness to pay for the low-quality variant in country  $L$  is now so high as to push the equilibrium price of this variant up. Symmetrically, the frustration of consumers living in  $L$  when buying the high-quality but foreign variant induces

firm  $h$  to reduce the price  $p_h$  to save its market share. As a consequence of these price changes, the number of consumers buying variant  $l$  in country  $L$  increases to such an extent that it generates an overall increase in the demand for the low-quality variant. Instead, the increase in the number of consumers buying variant  $h$  in country  $H$  is not very significant and the total demand of the low-quality variant decreases.

Hence, *nationalism originating in country  $L$  is now unambiguously welfare-enhancing in country  $H$ , where both consumers and the firm producing variant  $h$  are better off when international encounters replace the domestic ones. Conversely, the firm producing variant  $l$ , as well as consumers with a low income, are worse off.*

Two remarks are in order. On the one hand, nationalism increases consumer surplus in both countries. On the other hand, it reduces the producer surplus of firm  $H$  while benefiting firm  $L$ , whose profits increase with nationalism. In fact, in country  $L$  consumers buying variant  $l$  are better off in spite of the higher price of  $l$ , thanks to their nationalism, whereas consumers buying good  $h$  are worse off in spite of the lower price of  $h$ , due to the frustration of buying a foreign good. Symmetrically, in country  $H$  consumers buying  $h$  are better off due to the lower price of the variant  $u_h$ , while those buying  $l$  are worse off due to the higher price of the alternative good  $u_l$ .

### **Nationalism, free trade, and inter-country meetings**

Replicating the analysis developed for the benchmark setting, *mutatis mutandis*, we characterize the stable configuration of attitudes in country  $H$  and in country  $L$  in the presence of nationalism with inter-country meetings. Interestingly, the attitudes fully coincide with those of the scenario with nationalism arising in country  $H$ . In addition, analysing the trajectory of the price of the high-quality good and that of the low-quality good, we find that in this scenario encounters boost the price and quantity of the high-quality variant to such an extent that these exceed the corresponding values observed in the absence of nationalism. Moreover, they bring the price and quantity of the low-quality variant below their level in the absence of nationalism. In particular, we observe that, *consumers buying the domestic good are nationalists.*<sup>13</sup> *All other consumers are not nationalist. Moreover, inter-country meetings more than offset the effect of nationalism with domestic encounters.*

We summarize the results in the following proposition:

**Proposition 4** *Inter-country meetings undoubtedly diffuse nationalism and improve total consumer surplus in both countries. Nonetheless, they hurt the firm producing the low-quality variant while benefiting the rival producing the high-quality product.*

It is worth noting that while in the most likely case, when nationalism originates in the country where the domestic good is of high quality, globalization inducing international meetings shrinks nationalism despite partly disseminating it from country  $H$  to country  $L$ . Conversely, when nationalism originates in  $L$ , globalization makes more and more consumers globalist, thereby somehow weakening nationalism. Moreover—and at first sight paradoxically—intercountry meetings are detrimental for firm  $h$  when nationalism originates in country  $H$ , where this firm is located, while they hurt firm  $l$  located in country  $L$  when nationalism originates in this country.

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<sup>13</sup>Nationalist consumers are those with a high willingness to pay in country  $H$  and with a low willingness to pay in country  $L$ .