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Why Trade, and What Would Be the Consequences of Protectionism?

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Summary

Trade liberalization affects the economy via three main channels: (1) efficiency/productivity gains, (2) purchasing power gains for consumers, and (3) consequences on incentives and governance. These give rise to adjustment costs and distributional impacts, as well as potentially large environmental consequences.

Much of the impact of possible increases in EU trade barriers can be seen as forfeiting gains from trade, and it would also entail adjustment costs. Possible (but often unlikely) gains for workers in protected industries will be offset by increases in the cost of imported inputs, hurting competitiveness. This is increasingly important due to the rise of global value chains. Protection can also trigger a trade war, with widespread consequences; Noland et al. (2016) estimate that nearly 4.8 million jobs might be lost by 2019 in the U.S. in case of a full-blown trade war. We calculate that for Europe more than 20% of the value of total manufacturing extra-EU imports is composed of products that are not produced locally; this implies that substitution with local production is unlikely in the short to medium run.

We discuss two recent episodes of protectionist policies: the U.S. safeguard on tire imports from China (2009-2011), and the U.S. safeguard measure on steel products vis-à-vis all source countries (2002-2003). In both cases, the estimated employment benefit in the industry protected was insignificant, while negative impacts on downstream industries were disproportionately large, including outsourcing jobs overseas. Protected sectors witnessed higher stock share prices – benefitting owners, not workers – and even this was offset by declines in downstream industries.

We assess plausible scenarios for the future, in relation with the context of the recent U.S. presidential election. While the new administration's policy remains highly uncertain, we discuss three main directions it might take: bilateralism, aggressive use of trade defense, and breach of agreed principles. We argue that the best way for the E.U. to defend its interests requires monitoring closely the U.S. practices, defending the rules-based system, and displaying resolve in the willingness to impose reciprocity.

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Introduction

International trade has become an increasing source of political tensions over the recent years, both within and outside the European Union. Concerns about the consequences of trade openness in general or about specific trade policies in particular have led in many cases to calls to change radically or even reverse policies that have been applied in this area over the last decades.

Against this background, the objectives of this Policy Brief are: to present what can be drawn from the economics literature in an accessible and informative manner, including recent examples and facts, and to discuss the possible consequences of protectionist policies.

To clarify what is at stake, we begin by briefly reviewing the main channels through which international trade affects an economy, and the main empirical evidence in this respect. Even though isolating each mechanism in the data is difficult, if not impossible, distinguishing them theoretically allows us to present an organized view of the consequences of free trade, including gains from trade, distributional impacts, and the necessary adjustment costs that are required to achieve gains from trade.

In practice, however, policy questions do not have to do with the impact of trade in general, but rather with incremental changes. In the context of widely echoed concerns about possible harmful consequences of trade, we then describe what may be the consequences of limited increases in trade barriers, both in the long and in the short term. In doing so, we first analyze what these consequences may be in general, and then describe in detail two episodes that illustrate the practical consequences of protectionist policies. This can help guide policymakers' thinking about future protectionist episodes.

Finally, we consider the situation created by the recent election of a U.S. President whose campaign was marked by overtly protectionist positions, a situation without equivalent in the post-World War II period. Even though uncertainty remains wide about the policies the new administration will apply on trade issues, we consider what might be plausible scenarios for the future.

2. What are the main channels through which an economy is affected by international trade?

Fundamentally, international trade, in all of its forms and guises, allows separating the location of production from the location of consumption (of final goods) or use (of intermediate inputs). In the extreme case, an autarkic economy must consume exactly what it produces. Autarky, or, in the less extreme case, restrictions on international movement of goods and services, pose constraints on potential welfare, for two main reasons.

First, not all that one desires can be produced locally. Even if this were the case, other countries may be able to supply our wants more cheaply and efficiently. This logic naturally extends to intermediate inputs in production. Second, by allowing access to foreign markets one can exploit better one's comparative advantage, either at the industry level or of specific firms.

In these respects, overcoming man-made barriers (for example, tariffs, quotas, the plethora of non-tariff barriers, air and sea port efficiency, *etc.*) and natural barriers (for example, distance and geography) to international economic activity have the potential to increase aggregate productivity and consumers' welfare, culminating in the so-called gains from trade (GFT). Indeed, a convincing literature argues that trade openness *causes* higher GDP per capita.[1] We can summarize this idea as follows: while there are several underdeveloped and highly protected countries, there are no rich and highly protected countries – and the path from one group to the other passes through trade liberalization. Statistically, this manifests itself in the following way: after controlling for the sheer size of the economy (GDP in PPP terms[2]), a one percent point higher openness (measured as the sum of imports plus exports as share of GDP) is associated with 1.35 percent higher income (GDP per capita in PPP terms[3]).

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Here we elaborate on the sources for GFT, the channels through which they operate, and point out distributional consequences and other issues in the end. While contrasting autarky to free trade is often intellectually attractive, this is not the way the question is posed in practice. Accordingly, most illustrations and research results that we bring together here refer to the consequences of incremental changes of trade openness, be it as a result of changes in transport costs, of trade agreements or of other causes. The following Table 1 schematically summarizes the points we discuss below.

(1) Frankel and Romer (1999) exploit geography to isolate the non-income related motivation to trade and use this in order to identify the causal effect of trade on income (instrument variable). Feyrer (2009a,b) also exploits geography and the "natural experiment" of closing the Suez Canal to carry out complementary studies using similar statistical technique.

(2) PPP means purchasing power parity. In contrast to nominal comparisons (say, GDP in euros), this unit of account takes into account the cost of living in each country.

(3) This statement relies on a regression of log income on openness and on log GDP for 138 countries with population at least 1,000,000 persons (and excluding Singapore, a trading outlier), using data from the World Bank's World Development Indicators database. We display the partial correlation in Figure A1 in the technical appendix.

Table 1 – Summary of effects of trade liberalization on the domestic economy

1. Efficiency/productivity gains through	1. Changes in industrial composition 2. Changes in firm composition within sectors 3. Greater access to imported inputs 4. Innovation
2. Purchasing power gains for consumers through	1. Cheaper imported consumption goods 2. An increase in the number of available Products and varieties 3. Pro-competitive effects
3. Incentives and governance	Reducing rent-seeking activities
4. Distributional impacts	1. Trade-induced changes in relative wages 2. Adjustment costs.
5. The environment	
6. Exchange rate manipulation	

Source: Author's elaboration.

1.1. Efficiency gains

i. **Trade-induced efficiency gains through changes in industrial composition.** Consider two industries, one with lower costs, and hence prices, than the other. We say that the low cost industry has a *comparative advantage*, whether this is based on differences in technology (David Ricardo) or differences in factor intensities given prices of factors of production (Eli Heckscher and Bertil Ohlin). In a closed economy the ability of the low-cost industry to expand is limited by local demand. But when access to foreign markets becomes feasible, and cheap enough, the comparative advantage industry can expand at the expense of the other. The result is more output for the same amount of factors of production: a gain in total factor productivity. Bernhofen and Brown (2004, 2005) exploit the sudden policy change in Japan in the 1860s from autarky to complete opening up to international trade to illustrate the large magnitude of the gains from trade, and how they arise from exploiting the forces of comparative advantage.

ii. **Trade-induced efficiency gains through changes in firm composition within sectors.** When different firms compete with each other within an industry, two-way trade liberalization has two main effects on productivity. On the one hand, an increase in import competition causes less productive firms to shrink or exit. On the other hand, permitting easier access to foreign markets allows highly productive firms to export and to expand. Together, these forces cause reallocation of factors towards more productive firms, leading to greater output for a given amount of factors: a gain in total factor productivity.[4] This theoretical mechanism has been found to be empirically important. For example, Lileeva and Trefler (2010) estimate that the North American Free Trade Agreement (NAFTA) caused labor productivity in Canada's manufacturing sector to grow 14% over the course of 7 years from its signing in 1989. Two thirds of this gain was due to changes in firm composition, while the remainder was due to within-firm gains (see item 4 below). As Lileeva and Trefler (2010) summarize: "*The fact that a single government policy can be so important is truly remarkable*" [page 1096].

iii. **Efficiency gains through access to imported inputs.** The increased fragmentation of production processes across national borders during the last 25 years, as illustrated by the proliferation and deepening of global value chains (GVCs), has (a) highlighted the importance of trade in intermediate inputs and capital goods for the production process and (b) extended the analysis beyond trade in products to trade in "tasks", that can be executed by both humans and machines. The underlying force that drives the expansion of these types of activities is fundamentally cost saving. We illustrate the pervasiveness of this phenomenon from the perspective of the E.U. as a whole. It is important to keep in mind that E.U. integration makes intra-E.U., cross-E.U. members GVCs much more important than for the E.U. as a whole.[5] This fact underlies the success of the E.U. integration.

- For the average E.U.-wide industry in 2014, 10% of the value of production of final goods is derived from foreign value added (FVA share).[6] Even leaving aside sectors where foreign natural resources play a central role, like the "coke and refined petroleum products", in which the FVA share is as high as 44%, the average hides much variation: the FVA share is 23% in the "computer, electronic and optical products" and 15% in the motor vehicles industry. In contrast, in services industries, this share is less than 10%.

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- In virtually all industries the FVA share has risen from 2000 to 2014: an 8 percent point increase in the pharmaceuticals industry; 6.5 percent points in the "transport equipment (other than motor vehicles)" industry; 6 percent points in the "computer, electronic and optical products" industry; and 4.5 percent points in the motor vehicles industry. As above, typical service industries see much less of a rise in the import share.

(4) Melitz (2003).

(5) We rely on methodology of Timmer, Los, Stehrer and de Vries (2013). Computations use data from the WIOD database: Timmer, Dietzenbacher, Los, Stehrer and de Vries (2015).

(6) The value of final goods produced by an industry differs from total output of the industry. The latter includes output of intermediate goods that are used by downstream industries as inputs, potentially leading to double counting, which is not the case when focusing on the value of final goods. The calculation made here takes into account the fact that some intermediate inputs are exported from the E.U., and whose value is "re-imported" as part of a later-stage input. This value is not part of foreign value added. We refer to the technical appendix for complete details on the data and computation.

- These figures illustrate that, even for the large and economically integrated E.U. bloc, competitiveness is bolstered by the capacity to source intermediate inputs from the best providers worldwide. For cutting-edge technologies, specific inputs may only be available from a limited number of providers, sometimes mainly in one single country. Restricting access to such imports will surely entail significant costs and loss of competitiveness.[7]

iv. **Trade-induced productivity gains through innovation.** Increased import competition and export opportunities can raise the incentives of firms to invest in better technology, either directly via R&D or by purchases of better equipment and quality upgrading. This effect has been estimated to be an important source of total factor productivity gains at the aggregate level.[8] These gains may arise through several channels.

- Easier access to imported inputs at lower costs or better quality are found to be complementary to investment in technology.[9]
- Trade-induced changes in innovation in response to import competition.[10]
- Trade-induced or trade-embodied technology diffusion[11].
- In some industries that are characterized by high (and sometimes increasing) costs of R&D, these costs reach levels that can only be covered by sales in global markets, at the world level. The rationale for openness is compelling in such cases, even though competition policy concerns arise in many cases[12].
- Multinational enterprises may also be vehicles of knowledge transfer, leading to productivity gains[13].

1.2. Purchasing power gains for consumers

i. **Cheaper imported consumption goods.** In general, removing trade barriers permits consumers to purchase their consumption basket cheaper. In addition, tariffs are a regressive and arbitrary consumption tax. One reason for this is the greater reliance of poorer households on highly-taxed traded goods, for example food and clothing.[14]

ii. **Gains from an increase in the number of available products and varieties.** Reductions in import barriers are associated not only with lower prices for the pre-existing set of available products, but also, and importantly, with an expansion of the set available products and varieties of products. This enables to satisfy heterogeneous preferences across individuals in the domestic population. Although hard to measure, this channel is estimated to deliver significant increases in welfare.[15] This mechanism also extends to input variety, where greater access to imports enables to satisfy heterogeneous needs of industry for inputs, paving the way for increased productivity.

iii. **Pro-competitive effects.** Trade liberalization can increase the degree of competition. A reduction in import barriers allows entry of foreign competitors, which increases the number of competitors in each market. Firms in markets that experience an increase in the number of competitors find it harder to charge high markups.[16] This leads to lower prices, over and above the fact that foreign competitors offer lower prices due to their higher competitiveness. The reduction in markups can also drive out less-competitive firms, who cannot reduce their markups without making losses. In practice, even though Freund and Sidhu (2017) estimate that industrial concentration has declined on average between 2006 and 2014, the magnitude of the pro-competitive effects of trade is difficult to evaluate, because trade liberalization can be followed by consolidation.

1.3. Incentives and governance: reducing rent-seeking activities

Protectionism creates incentives for rent-seeking activities. These are costly activities that merely shift income to "rent seekers" without creating additional value. Even when these activities are perfectly legal (let alone when they are illegal), this leads to substantial losses in productivity and welfare.[17] The best examples of this are related to import quotas. After importing licenses under the quota are obtained, they are sometimes sold to third parties for a profit. Even when licenses are distributed to import-competing firms based on reasonable criteria, competition for receiving the quota can lead to wasteful use of resources. For example, if quotas are allocated based on importer capacity, as has been the case in India in the past, importers find it rational to invest in excess capacity, without increasing output – a pure waste. In addition to this, importers may invest in both legal and illegal means of obtaining import licenses, which can result in import licenses being allocated to the least productive firms. This is because more competitive firms are less threatened by import competition, while large and less competitive firms have a stronger incentive to invest in obtaining a license. Overall, the costs of these rent seeking activities has been estimated to be very high in developing countries, but the logic extends to the E.U. as well. Market mechanisms are more efficient in distributing rewards and remuneration.

(7) Overall, the United States and Japan are similar to the E.U. in these respects, but there are also some notable differences. The FVA share for the average US industry is 9%, while it is somewhat higher at 14% for Japan. This is not surprising because Japan is a smaller and more specialized economy. The industry representation of top FVA shares is different, although all have at the top "coke and refined petroleum products". In the USA there are some declines in FVA shares in some industries, notably -3% in "computer, electronic and optical products", but also a small decline in "coke and refined petroleum products".

(8) Alcalá and Ciccone (2004), Ahn, Dabla-Norris, Duval, Hu and Njie (2016).

(9) Bøler, Moxnes, and Ulltveit-Moe (2015).

(10) Bloom, Draca and Van Reenen (2016).

(11) Coe and Helpman (1995), Coe, Helpman and Hoffmaister (2009).

(12) This can be understood through the analysis in Shaked and Sutton (1983), who discuss the case for such investments in fixed costs.

(13) Blonigen, Fontagne, Sly and Toubal (2014).

(14) Fajgelbaum and Khandelwal (2016).

(15) Feenstra (1994).

(16) Melitz and Ottaviano (2008).

(17) Krueger (1974).

1.4. Distributional impacts

Before discussing further distributional impacts, it is important to point out that there is no systematic link between trade openness and unemployment. The best way to understand this is through the following observation: trade exposure has secularly risen throughout the E.U. and other advanced economies since 1970, but unemployment rates fluctuate over time. Any statistical or observational relationship between trade openness and overall unemployment in the cross section of countries is necessarily due to the coincidence of trade liberalization with labor market policy choices and reforms that affect unemployment. Trade liberalization does cause plant closures and job losses, but these are of a local nature and are not permanent (we comment on this below). The salient impact of trade liberalization is on bargaining power of workers (and unions), and on income distribution.

i. **Trade-induced changes in relative wages.** Almost by necessity, trade liberalization causes changes in the relative rewards of different factors of production (capital versus labor, skill versus labor, management versus labor, *etc.*), with associated distributional impacts. This is because trade liberalization causes some economic activities (industries or firms) to expand and others to contract. As long as the expanding activities do not employ factors of production in the same proportion as contracting activities, relative demand for factors will change – and therefore, relative remuneration. This is the topic of numerous research papers. Tariffs are typically higher in low-wage industries, and they contribute to increase these wages (from a lower base). Therefore, removing tariffs typically leads to wage losses for those who are already less well remunerated.[18] Aggregate gains, when asserted, open the possibility to compensate the losers of such policies. However, they do not guarantee by any mean than such compensation does take place in practice. In the E.U., the European Globalisation Adjustment Fund was set up in 2007 to help workers who lost their jobs as a result of changing trade patterns. However, this corresponds to a rather narrow definition of globalization impact, and as a matter of fact the means devoted are very limited at the European scale, with a total of 600 M€ spent over 10 years. In practice, even though the impacts on labor supply by education level also matter in the longer term, the reality of compensation thus chiefly depends upon accompanying social and labor market policies. Analyzing in detail the distributional impact of trade goes beyond the reach of this Policy Brief, but it clearly remains a major open question, both from an economic and a political point of view.

ii. **Adjustment costs.** The process of adjustment to more open economies can entail significant and protracted adjustment costs.[19] The overall size of adjustment costs depends (i) on macroeconomic conditions (*e.g.*, they are lower in periods of strong economic growth), (ii) on accompanying institutions (*e.g.*, they are lower where there is more labor market flexibility and social provisions), and (iii) on specific policies (*e.g.*, trade adjustment assistance). While elaborating at length about this very important issue is beyond the scope of this Policy Brief, the following three conclusions from the literature are worth recalling:

- **Adjustment costs differ across demographic groups.** Costs are higher for relatively unskilled and older workers, and for those whose occupations are overall more affected.
- **Adjustment costs are geographically concentrated.** This can create strong resistance to change that can give rise to large aggregate gains in geographies that bear a disproportionate burden of adjustment.
- **Protectionist policies are not the most efficient accommodating instrument.** For example, the Multi-Fiber Agreement (MFA) was designed to deliver temporary protection for the textile industry in developed economies, yet lasted 30 years (1974-2004), and adjustment was constantly delayed. In addition, antidumping cases are more frequent in declining industries, for example, in clothing, electronics, and steel.[20] We discuss in detail episodes of protectionist measures in Section 3.

iii. **Distributional impacts in manufacturing through the lens of Global Value Chains.** We have noted above (in subsection 1.1.iii) the important role of Global Value Chains (GVCs) via trade in intermediate inputs and capital goods for the production process. We now go beyond this to analyze the role of GVCs in "trade in tasks", where tasks can be executed by both humans and machines, whether domestic or internationally. To do this, we apply similar methodology as above to six subcomponents of value added in final demand, namely: capital, high skilled labor, and less-skilled labor – domestic (located in the E.U.) and foreign (outside of the E.U.). Due to data limitations, this can only be done starting in 1995, until 2008. Table 2 describes the evolution of shares of sources of E.U.-wide value of production of final goods for manufacturing industries.[21] A few points are worth making:

- **The share of less-skilled labor drops by 9 percent points.** This is the only component that declines, which means that other components take up their share in production.
- **Skill upgrading within the E.U.** The most important component taking up the role of less-skilled labor within the E.U. is skilled labor (skill upgrading). This has been well-documented in numerous studies.
- **Foreign capital substituting for domestic less-skill labor.** What is more interesting, and surprising, is the important role of foreign (non-E.U.) capital compared to

(18) Gaston and Trefler (1994), Goldberg and Pavcnik (2005).

(19) Autor, Dorn and Hanson (2013), Dix-Carneiro (2014), Dix-Carneiro and Kovak (2015).

(20) Freund and Özden (2008), Tovar (2009).

(21) We use WIOD-released 2013 data, merged with socio-economic accounts. See technical appendix for full details. Due to data consistency issues, this exercise is less informative for services industries.

foreign less-skilled labor in substituting European less-skilled labor. Although the *direct* exposure of the E.U. to less-skilled labor in other regions (say, China) is large, through the international trading system and its ever-deepening input-output structure, it appears that the main external "threat" to less-skilled jobs is foreign capital, not foreign less-skilled labor.[22] This happens because products (including final and intermediate goods) that are relatively less-skilled labor intensive in the E.U. are increasingly supplied by other entities, which overall use more capital intensive techniques (or technologies).

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Table 2 – US Evolution of Components of E.U. Value of Production of Final Manufactured Goods
(in %)

	Capital		High-skill Labor		Less-skilled Labor	
Year	EU	Foreign	EU	Foreign	EU	Foreign
1995	29.5	3.1	14.0	1.0	49.5	2.8
2008	30.4	5.7	17.8	1.7	40.5	3.8
Change	0.9	2,6	3.8	0.7	-9.0	1.1

Source: Authors' calculations based on WIOD-released 2013 data.

1.5. The environment

By altering the scale, composition, and technique of production, trade liberalization can have environmental consequences – some of which can be positive, while others negative. There are three main channels through which trade liberalization can affect pollution: scale, composition and technique. If trade increases the overall scale, or volume of consumption, then some of this falls on products whose production process is harmful, then the environment will suffer. In addition, more trade implies shipping more goods over greater distances, which increases pollution due to greater consumption of fuel. Trade liberalization may cause a shift towards production of more polluting production, if a country has a comparative advantage in "dirty" industries, or if it has lax environmental regulation – the "pollution haven hypothesis" (PHH). Finally, since trade can induce productivity-enhancing investments, and because it has been found that more productive production technique is cleaner (either by economizing on use of all inputs or shifting towards less polluting inputs). Empirically, in some cases better techniques can offset some of the negative effects of scale and changes in composition, along the lines of the PHH. But the main consideration seems to be the interaction of income with environmental protection policy.[23]

However, it is clear that since the E.U. has stronger environmental regulation and encompasses a set of advanced economies, less extra-E.U. trade should lower harmful emissions and be beneficial to the environment. This is because more of the need and wants of the E.U. will be produced within the union, requiring less shipping, and this production will use more efficient (over and above factor costs) – and cleaner – technologies. This is particularly true in cases where pollution has large global externalities, *i.e.* indirect effects coming from other, more polluting countries, which may dwarf the beneficial composition effect from the E.U. perspective.[24]

1.6. Currency manipulation and trade competition

Standard economic analyses of international trade assume that exchange rates freely adjust. While in a pure neoclassical framework it is frequently assumed that market-based mechanisms should maintain a balanced current account, this need not be the case when other factors are taken into account, such as international capital flows, cross-border investments or differences in forward-looking expectations. It remains that real exchange rate adjustments tend to correct or at least limit current account imbalances, and this is a fundamental element of the mechanisms through which international trade influences economy, based on the above-described logics.

Accordingly, a long-standing concern in international trade relationships has been that some countries may manipulate they exchange rate so as to reap trade benefits. This would not make sense in the long run because accumulating indefinitely claims on its trading partners would only lead the manipulating country to consume less than it produces. In the short and medium run, however, an undervalued currency may boost the cost competitiveness of exporters. Irrespective of whether this strategy is deemed profitable or not for the country applying it, it is a double-edged sword for its trading partners: consumers benefit from lower-priced imports, but producers suffer from the corresponding increased competitive pressures. In a context of underemployment or in industries where sunk costs and learning-by-doing are important, the latter effect may incur significant losses for the country as a whole. In this sense, currency manipulation unduly distorts competition, and preventing and fighting it is a legitimate objective.

In practice, this raises two questions: how to define currency manipulation, and how to deal with it legally? Definition is not obvious, because some state intervention on currency markets is usual, and even necessary. As a matter of fact, IMF's

(22) Similar patterns are observed in the United States and in Japan, although in Japan domestic capital also declines. It is important to note that "foreign" capital may also be owned by E.U.-based entities, for example, E.U.-based multinational enterprises

(23) Copeland and Taylor (1994). Antweiler, Copeland and Taylor (2001), Karp (2011).

(24) In the case of renewable resources, trade hurts resource exporters by depleting their resources faster than their natural recovery rate. However, this result may be overturned if strong private property rights over the renewable resource can be established. Brander and Taylor (1997). Copeland and Taylor (2009).

Article IV, adopted in 1978, states that members should "avoid manipulating exchange rates" (IMF Articles of Agreement, Article IV, iii), but the IMF never publicly declared that any of its members would be violating this commitment. The U.S. 1988 Trade Act also includes provisions against currency manipulation (additional provisions were also included in the Trade Facilitation and Trade Enforcement Act of 2015), which is defined based on three criteria: persistent and significant one-sided interventions in the foreign market, a material current account surplus (worth more than 3% of GDP) and a significant bilateral trade surplus with the U.S. So far, only three countries have been labeled as currency manipulators: Japan in 1988, Taiwan in 1988 and in 1992, and China from 1992 until 1994. This definition makes sense and proved operational, although it should be emphasized that it was not used during the most blatant recent situation of potentially harmful currency manipulation, namely China between 2006 and 2008.

As a matter of fact, dealing legally with currency manipulation is uneasy because the exchange rate is not a policy variable. As a result, agreeing upon commitments and automatic mechanisms is difficult and has not been achieved so far in relation to trade issues. When maladjustments surface, they must thus be dealt with on a case by case basis, but exchange rate policies are so important that the corresponding discussions are necessarily highly charged politically. This probably explains why little has been achieved so far in terms of international commitments in this area. However, doing so would not be impossible and is actually being seriously discussed in the U.S.

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2. The impact of possible increases in trade barriers

Given the increasing tensions surrounding international trade, pressing policy questions have recently shifted away from the consequences of liberalization or greater openness to the impact of increased trade barriers. One way to address this is to consider the opposite of the impact of trade liberalization. This allows drawing interesting insights about long-term economic consequences and distributional effects. However, in practice, increased trade protection entails adjustment costs (just as trade liberalization does), so simply changing the sign of the impact of liberalization does not provide a suitable answer. This is also true about the political economy dimension, both internally and with respect to trading partners and their possible retaliation.

The debate about the legitimacy and consequences of trade protection is blurred by the frequent labeling of foreign competition as being "unfair". While we agree that unfair competition warrants protective measures, this is a peculiar situation which is not the one we intend to analyze here. Before discussing protectionism and its likely consequences, we thus wish to clarify the notion of "unfair" trade practices. World Trade Organization (WTO) agreements consist of reciprocal commitments, they do not define what is fair or unfair. Still, practices such as dumping and subsidies are considered as warranting actions in response, and for this reason they are frequently termed unfair, which calls for clarification.

According to the WTO definition, a product is dumped if it is exported at a price lower than what the exporter charges in its domestic market. This definition differs from the standard one in industrial organization, which is the practice of selling below cost. In both cases, however, it refers to a practice of selling a product "at less than its normal value", with the aim of gaining market shares in order to drive competitors out of business. Such practice is anticompetitive in the sense that its only rational motivation is the prospect of being able to increase prices once competitors are driven out of the market. It can be considered unfair to the extent that it aims at gaining competitive advantages over and above what would be warranted based on the producer's competitiveness, by relying upon the expected capacity to withstand temporary financial losses for longer than competitors, for instance due to State support, preferential access to financing, or due to cross-subsidization with another activity. Needless to say, it can be injurious for competitors, which are facing artificially low prices. For all these reasons, the WTO Agreement on Antidumping[25] specifies how dumping may be established in practice and how antidumping duties may be imposed when this is the case. Note that antidumping measures are only supposed to be maintained "as long as and to the extent necessary to counteract dumping which is causing injury". Measures shall also be terminated or reviewed no later than five years from their impositions, but many of them are renewed in practice, so that the average duration of antidumping measures imposed by the E.U. on partners with market economy status was 7.9 years for measures initiated during the period 1998-2001.[26]

Subsidies are also strictly limited by WTO Agreements.[27] Not because they would be considered unfair in general, but because they can be used by one country to gain competitive advantages at the expense of others. Accordingly, subsidies contingent upon export performance or upon the use of domestic products are outright prohibited. Other subsidies may lead to countering actions within WTO rules if they cause injury to another Member.

In both cases, the duties imposed, whether antidumping or antisubsidies, cannot be analyzed independently from the partners' practices that warranted them. To the extent that

(25) Formally named "Agreement on Implementation of Article VI of the General Agreement on Tariffs and Trade 1994" and part of the Marrakech Agreement.

(26) Bellora and Jean (2016, Appendix, p. 6).

(27) The corresponding commitments are spelt out in the WTO Agreement on Subsidies and Countervailing Measures.

they follow thoroughly the rules agreed in the corresponding agreements, they should not be considered as protectionist, but rather as a way to redress practices incompatible with international commitments, which can be considered as pertaining to unfair competition. Note, by the way, that the same is not true of safeguards, which are measured taken in response to an import surge deemed injurious, "to the extent necessary to prevent or remedy serious injury and to facilitate adjustment" (WTO Agreement on Safeguards, Article 5). Such measures are *temporary* (18-36 months), they are not supposed to be partner-specific, and they are not taken in reference to any given partner practices.

In sum, competition can meaningfully be labeled unfair when it entails dumping or relies upon actionable subsidies (in the meaning of WTO agreements). This corresponds to peculiar situations warranting specific analysis. In contrast, this section deals with a general context, where no such practices by partners are at stake. The increased trade protection analyzed here can take the form of a change in the country's trade policy regime (increased MFN rates, for instance), or of safeguard measures. It can also materialize through non-tariff barriers, for example, technical, administrative and "local content" requirements that restrict trade. However important non-tariff barriers are in the relatively low tariff environment we have reached today, tariffs remain the immediate protectionist policy tool, and is therefore the main focus of what follows.

competition can meaningfully be labeled unfair when it entails dumping or relies upon actionable subsidies (in the meaning of WTO agreements)

2.1. The opposite of a trade liberalization – a long term view

The long term economic consequences of trade affect the economy's long run structural equilibrium. In this context, an increase in protection alters this equilibrium, and can be analyzed as the opposite of a trade liberalization. Although some of the discussion revolves around tariffs, it is important to note that other barriers will have similar effects.

2.1.1. Distributional impacts

A merit of this simple approach is to suggest what the distributional impacts might look like. The first order effect of increasing barriers faced by international competition is a relaxation of the disciplining effect of imports. Import-competing sectors will benefit from weaker international competition, allowing them to increase profits and/or expand output and gain domestic expenditure shares. The former effect will be more important when import restrictions increase domestic markups as a result of weaker competitive pressure. This is consistent with empirical analyses of antidumping investigations, where temporary barriers have been shown to result mainly in increases in prices and mark-ups.[28] When this is the case, output and employment are less likely to increase in those industries, limiting the impact on relative wages described in Section 1.

While import-competing industries and firms gain from higher barriers to enter the domestic economy, the cost of protection is borne by other industries that use imported intermediate inputs and by consumers. Beyond these direct costs, domestic exporters may also face higher protection duties on foreign markets if some partners increase their protection level in response. The WTO Dispute Settlement System (DSS) explicitly makes it possible to suspend concessions proportionately *vis-à-vis* a partner that would be deemed by the DSS to maintain practices inconsistent with its commitments under the WTO; in other words, it makes retaliation part of the system aimed at rendering commitments enforceable.[29] In addition, exporters will suffer from tariff protection in the long run even in the absence of retaliation, because the equilibrium level of the country's real effective exchange rate (REER) would increase as a result. An increase in the REER implies an increase in the price of domestic output faced by foreigners, thus hampering competitiveness on foreign markets.[30] An additional negative impact of protection for exporters is linked to the tax imposed on imported intermediate inputs. For example, while the average E.U. industry imports 12% of the value of its intermediate inputs, in the "computer, electronic and optical products" industry this share is 31% in 2014. For "basic pharmaceutical products and pharmaceutical preparations" the share of imported intermediate inputs is 22%, and even in "other transport equipment" (not cars) this share is 20%. In the E.U.-wide car industry the share of imported inputs is 10%. In addition, consumers will face increases in the prices of consumption goods, which is usually both regressive and arbitrary, as discussed above.

2.1.2. The "optimal tariff argument" for protectionism is deeply flawed

As should be clear from the discussion in Section 1, the net economy-wide effect of increased protection on real income is generally negative.

In this context, it is important to warn against calls for protection based on the so-called "optimal tariff argument". Theoretically, a positive tariff may be optimal (better than any

(28) See Pierce (2011) on the US, Konings and Vandenbussche (2008) on the E.U. The latter estimate for instance that markups of prices over costs are on average increased by 8% when firms are protected by antidumping sanctions.

(29) Retaliation is only possible once the other party has been found to violate WTO and no action (or no sufficient action) has been taken to bring it in line with the decision of the dispute settlement body.

(30) The REER is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs. An increase in REER implies that exports become more expensive and imports become cheaper; therefore, an increase indicates a loss in trade competitiveness.

other lower tariff) if increased protection lowers demand for imports, which then lowers the international prices of these imports compared to export prices – a terms-of-trade gain. This argument applies only when the tariff is imposed by a large country with significant influence on world prices and, importantly, when there is no retaliation from trading partners. In addition, this argument is substantially weakened in a world of GVCs, because imports incorporate domestic factor content, while domestically-produced goods incorporate foreign content.[31]

once a trade war starts, it can spiral out of control and take a long time to unwind

However, the main reason why the optimal tariff argument hardly paves the way for positive outcome is that partners generally do react by increasing their own trade protection. Such tit-for-tat policies can easily escalate into a full-blown trade war. Indeed, like any other war, once a trade war starts, it can spiral out of control and take a long time to unwind.

In fact – and this is important to understand – it took decades after the Second World War to unwind the effects of the trade war that started in the 1930s, through multiple rounds of negotiations within the General Agreement on Tariffs and Trade framework, and the creation of the World Trade Organization in 1995. Against the backdrop of the ensuing Great Depression, the Smoot-Hawley Tariff Act of 1930 was passed in the United States. The act increased tariffs steeply for 890 products. Not all imports were affected, but for those that were, the "dutiable tariff rate" (tariff revenue divided by dutiable imports) rose to almost 60%. Retaliation soon followed, with Canada and the British Empire imposing similar tariffs on American imports, culminating in a massive deterioration in the world trading system.

retaliation in response to non-cooperative behavior by limiting market access can work as a disciplining device

Terms-of-trade gains can only be reaped at the expense of one's partners' welfare; trading partners' responses more than counterbalance the potential benefits of such protectionist strategies. Avoiding such negative-sum games is one of the fundamental motivations of the multilateral trading system, based on reciprocal commitments.[32] Retaliation in response to non-cooperative behavior by limiting market access can also work as a disciplining device, and this is an important principle for the WTO's DSS, as already mentioned. As a matter of fact, countries that use the DSS more frequently pursue on average more liberal trade policies.[33]

(31) Blanchard *et al.* (2016).
(32) Bagwell and Staiger (1999).
(33)Dluhosch and Horgos (2012).

2.1.3. Assessing the long-run impacts of protectionist outbreaks

Since trade protection involves changes on prices, wages, employment, incomes and outputs, its consequences are complex and can only be assessed based on a number of assumptions. For a long time, a standard way to do this has been to make use of so-called computable general equilibrium (CGE) models. These models use a neoclassical framework based on microfounded descriptions of the behaviors of agents (namely, households, firms and governments). They take into account detailed data on of the economy's structure, including input-output relationships, trade flows and budget constraints, together with econometric estimates of behavioral parameters to describe how exogenous shocks are transmitted throughout an economy. Their strength relies in their capacity to put figures on the economy-wide impact of well-identified microeconomic mechanisms. Since these models are neoclassical in nature, they inherently feature economic efficiency in the allocation of production factors, which is useful for analyzing long run outcomes. However, this may not be desirable if one considers externalities and other non-neoclassical forces. Their main weakness comes from the need to combine tractability with real data. Their theoretical framework needs to remain rather simple, relying, for instance, on representative consumers and representative firms, and on schematic description of competitive interactions. Meanwhile, their large scale makes it difficult to trace the underlying reasons for their results, both in terms of data and of theoretical background.

Simulations of the impact of all WTO member states increasing their tariff duties up to the maximum level allowed by their commitments gives orders of magnitude of the corresponding impacts. In 2013, such a shock corresponded to increasing the worldwide average level of tariff duties from 3.6% to 12.9%. Bureau *et al.* (2013) simulations suggest world trade would decline by 11.7%, with an average decrease in real income by 0.8%. It should be emphasized again, though, that these results do not include a number of dimensions of trade impact described in Section 1, in particular those linked to innovation and to the nature of competition.

Another way to assess quantitatively the consequences of changes in trade protection rely on so-called structural gravity models, whereby a simplified aggregate model is used as a basis for an econometric analysis of the past relationships between trade protection, trade and real income. An extensive literature has shown the capacity of such model to analyze the determinants of trade and their consequences. However, to the best of our knowledge, these models have not been applied to a thought experiment comparable to the one referred to above.[34]

(34) Egger and Larch (2011) is an example. Gravity models have also been applied to study the consequences of antidumping duties (see, *e.g.*, Blonigen and Prusa, 2015, or Bellora and Jean, 2016) but, as emphasized above, such duties are specific and cannot be analyzed properly independently from the practices they are supposed to counter.

More recently, so-called new quantitative trade models have been developed as a new approach to assessing the consequences of trade and trade policies.[35] Their strength lies in the possibility to trace more transparently the results down to theory and data. The counterpart is the lack of empirical detail and sometimes of robustness, exemplified in the difficulty to represent suitably inter-industry input-output relationships. However, taking into account input-output relationships, Caliendo *et al.* (2016) estimate that the Uruguay Round of multilateral trade liberalization resulted in an average 1.4% increase in real income. Such estimates should be viewed as numbers put on well-identified mechanisms, in a framework which is necessarily narrow and simplified, compared to the variety of trade consequences described in Section 1.

Overall, none of the assessment tools described here can replace a suitable multifaceted policy analysis.

2.2. Adjustment costs and resilience

Just as trade liberalization involves adjustment costs, so will raising trade barriers, especially given that increased trade barriers on export markets should be expected as a result. Depressed demand faced on export markets is likely to depress profitability, and increased protection in the domestic market is unlikely to compensate in sectors where exports are comparatively large – *i.e.*, sectors where the country benefits from a comparative advantage. Firm failure, investment slack and job losses may ensue in these sectors. A difference with the impact of trade liberalization is that the sector distribution of exports is usually far more concentrated than the imports' one, meaning that ensuing adjustment costs may be strongly concentrated in terms of sectors, skills and locations. Where import competition is strong, increased protection may in contrast shift demand to domestic firms. However, addressing this demand requires investment and skills which cannot necessarily be put together rapidly. In most cases, lengthy and costly cross-sector adjustments will be needed. And even when firms need to shift from foreign to domestic market within the same sector, they may face a mismatch between supply and demand, since the product mix and quality specialization usually differ between domestic and foreign markets.[36]

with only one exception in Europe (Denmark), more than 20% of the value of total manufacturing imports was composed of non-competing imports in 2015

Predicting the nature and magnitude of these adjustments is difficult, though. A recent attempt to do so was carried out by Noland *et al*. (2016) to assess what may be the economic consequences of putting into practice the protectionist program defended by Donald Trump during the recent presidential campaign. This includes renegotiating the North American Free Trade Agreement (NAFTA), imposing a 35 percent tariff on imports from Mexico and a 45 percent tariff on imports from China, and terminating free trade agreements (FTAs) that the United States has signed with 20 countries. All of these (including NAFTA) include reciprocal reduction of tariffs and other barriers to trade and investment. Ultimately, Trump has suggested leaving the World Trade Organization (WTO), under which United States firms enjoys low tariff market access to 163 countries.

Noland *et al.* (2016) rely upon an estimated macroeconometric model, where the short-term influence of trade on GDP is assessed based on historical data. They analyze, inter alia, a "full trade war" scenario, in which the United States is assumed to impose a 45 percent tariff on nonoil imports from China and a 35 percent tariff on nonoil imports from Mexico while China and Mexico respond symmetrically, imposing the same tariffs on U.S. exports. According to their simulations, such trade war would spark an uptick in inflation due to increased import prices, leading the Fed to increase interest rates. Stock markets would decline, uncertainty would increase, resulting in increased cost of debt. Compared to the baseline scenario (*i.e.*, one without trade war), investment would fall by more than 5% in 2018 and almost 10% in 2019. In many sectors, output and employment would decline as a result. In the trough of the recession that would follow in 2019, they reckon that under a "full trade war" scenario private sector employment would decline by nearly 4.8 million jobs in the United States. Interestingly, these simulations also show that short-term adjustment costs would be disproportionately larger than longer-term impacts. For instance, the negative impact on consumption two to three years after the shock would be more than twice as large as the impact assessed five years later. These results illustrate how disruptive trade wars may be in a world where GVCs are ubiquitous.

Natural disasters also illustrate the costs of disruptions in a world of GVCs. In several cases, economic analysis showed the importance of inter-firm linkages as a shock transmission mechanism, both nationally and internationally. Following the Thai flood in 2011, for instance, the Malaysian automobile production sector suffered a significant decline in production and was slower in recovering than the Thai sector itself.[37] In Japan, it is estimated that, in the year following the 2011 Tohoku earthquake, the propagation of the shock through input-output linkages accounted for a 1.2 percentage point decline in Japan's gross output (Carvalho *et al.*, 2016).

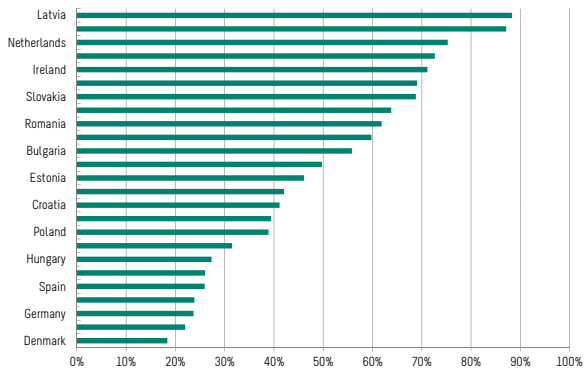
The consequences of import shocks, whatever their direction, also depend upon the extent to which imported goods are directly competing with domestic production. Even beyond the case of natural resources, some imported goods have no direct substitute at home, either because the domestic industry disappeared, or because it was never produced, for instance in the case of highly specialized products. When this is the case, taxing these "non-

(35) Costinot and Rodriguez-Clare (2014).

(36) Mayer, Melitz and Ottaviano (2014).

(37) Haraguchi and Lall (2015).

Figure 1 – Share of manufacturing imports composed of products not produced in the country
(in % of the value of total manufacturing imports, 2015)



Source: Authors' calculations based on Prodcom and Comext (Eurostat), using the most detailed available classifications (8-digit level).

competing" imports does not involve any direct substitution effect between domestic and foreign production.[38] As a result, at least in the short-to-medium run, the impact is mainly to increase the purchasing price of the corresponding goods, and possibly to reduce the availability of foreign varieties. It has no significant impact on relative wages, for instance. Simple calculations based on the most detailed European statistics suggest that such configuration is not unlikely or even rare (Figure 1). With only one exception in Europe (Denmark), more than 20% of the value of total manufacturing imports was composed of such non-competing imports in 2015.

For partners, the consequences would be different, since they would be primarily felt on exports to the U.S. market, at least assuming they do not take protectionist measures in response. As a result, short-term consequences would result from ensuing export falls, which might be transmitted across sectors and countries through repercussions on demand for inputs. Considering a scenario where U.S. import tariffs would be increased to 15% in all sectors, Vandenbussche (2017) estimates that it would cost the E.U. as a whole the loss of 240,000 jobs, while GDP would be cut by 0.4%. These first pass estimates rely on rough assumptions and do not pretend to replace a full-fledged analysis. Still, they show that consequences might be far from trivial for the E.U.

3. Protectionism in practice: illustrative recent episodes

Protectionism inevitably involves in practice technicalities and complexities, with intricate interplays between economics, law, political economy and geopolitics. To illustrate how trade protectionism unfolds and what its practical consequences are, this section focuses on two recent episodes, combining narrative with analysis. In accordance with the approach of the previous section, we selected episodes where protection measures were taken without any specific reference to unfair practices (dumping, actionable subsidies). In both cases, the measures concerned are safeguards taken by the U.S. This is no coincidence since safeguards are important trade defense instruments, and their application leaves significant political leeway, even though the des6cription below does not entail any a priori judgment about the motivation or legitimacy of the measures considered. In addition, the U.S. has probably been the most active user of such measures among countries comparable to the E.U. in their political and economic structure. The first episode shows the effect of introducing higher protection against one trading partner (which mostly has the effect to divert trade to less efficient suppliers); the second one illustrates the case of protection against all the trade partners.

3.1. The U.S. safeguard on tire imports from China (2009-2011)

This episode originated in the decision to use safeguard measures to support an U.S. ailing industry and save jobs. However, data and analysis point to the failure of this measure to deliver the protection it had promised. The employment increase in the tire industry was insignificant; assuming the number of jobs saved was not zero, the cost for consumers was disproportionately large. The safeguard measures mainly benefited third country (not Chinese) exporters. Moreover, there were likely negative effects on other U.S. sectors. In addition, this safeguard measure gave raise to several retaliations and adjudications, culminating additional costs for all parties involved.

On 11 September 2009, President Obama decided to use special safeguard measures against imports of certain tires from China. This decision followed an investigation pursuant to Section 421 of the U.S. Trade Act of 1974, and was originated by a petition filed by a union representing, among others, tire-manufacturing workers. It was widely commented as the first serious test of President Obama's trade policy, following a campaign where he had famously pledged to "crack down on China".

The conclusion of the investigation was that the rapid increase in import of certain tires from China had caused market disruption in the U.S. Consequently, additional duties on imports of these tires from China were applied for three years: of 35 percent ad valorem in the first year, 30 percent ad valorem in the second year, and 25 per cent ad valorem in the third year. While safeguard measures usually target all imports, these specifically targeted China ("China-specific safeguard"), based on special law made possible by transitional provisions of China's WTO accession protocol.

The measure was intended to help the U.S. tire industry, in a context where 5,000 jobs had been lost in the previous five years, while the volume of imported Chinese tires in the U.S. market had tripled, reaching 17 percent of the U.S. tire market.

(38)The term "non-competing imports" is borrowed from Wood (1998).

While the safeguard succeeded in curbing tire imports from China, from 49.7 million tires in 2008 down to 29.6 million in 2011, it is far from certain that it provided relief to jobs in the industry, which increased by only 1,200 (from 50,800 to 52,000, *i.e.* 2.36 percent) in the two years following September 2009 (Hufbauer and Lowry, 2012). Assessing whether this increase is attributed to the safeguard requires evaluating what the outcome would have been, absent any such measure. In order to do so, the tire sector can be compared to an average of similar sectors chosen to be a meaningful benchmark. Doing so shows that the tire sector is undistinguishable from the benchmark, suggesting that the safeguard did not deliver on its promise of job protection (Chung *et al.*, 2016).

the safeguard did not deliver on its promise of job protection

Two main factors explain this result. The first is trade deflection: the reduction in tire imports from China was largely compensated by imports from other countries. U.S. imports from all other important providers increased steadily between 2009 and 2011, and total imports increased by 20%, relative to their 2008 level (USITC data). The trade deflection caused by the safeguard mainly benefitted other exporters.[39] The second, complementary, factor is differences in quality. Imported Chinese tiers were mainly low-cost, low-quality tires (so-called tier-3 tires), which, according to USITC (2009), only accounted for 18.6% of U.S. production in 2008. The bulk of U.S. production had already shifted several years ago toward higher-quality, branded products (Charnovitz and Hoekman, 2013). This can explain why the initial complaint was raised by a union and not by the owners in this industry, which, in fact, did not support it (and in one case, explicitly opposed it).

the trade deflection caused by the safeguard mainly benefitted other exporters

This case illustrates the complexity of trade dispute in a world where internationalization is widespread: the once-dominant U.S. tire industry only produced around 15% of the sectors' global output in 2010; among the ten firms producing tires in the U.S., two were American and eight had affiliates or joint ventures in China (USITC, 2009).

Beyond its direct trade impact, the safeguard measure also raised tariff revenue. Since they are paid by U.S. consumers, though, this revenue cannot be considered as a gain for the economy as a whole, and can be assumed revenue-neutral in first approximation.

An additional important effect of the safeguard measure was higher prices of tires for U.S. consumers. The cost per unit ("unit value") of imported tires of *all other countries* increased, on average, by 18% over 2009-2011 – not only of imports from China, which increased by roughly the same amount – even though tariffs were not applied to them. In parallel, producer prices in the U.S. rose, compared to other sectors, by 3.3% yearly. Hufbauer and Lowry (2012) estimate that the corresponding gross annualized cost of the safeguard tariffs to U.S. consumers in 2011 was around $1.1 billion. Thus, the implied total cost for American consumers of each job saved in the tire industry was over $900,000 ($1.1 billion divided by 1,200 workers). Only 5 percent of the cost to consumers benefited tire workers (their total annual wages over the duration of the safeguard, divided by $1.1 billion), while the rest added to the profits of both U.S. and foreign producers.

The increase in the cost of tires may in addition induce costs for other industries, at least through two channels. The first one stems from consumers budget constraint, meaning that less income is left available for consumption of other products. The second one results from the fact that tires are also intermediate inputs. For the automotive sector, the increased cost of tires requires increasing prices (with negative consequences on sales) or decreasing profit margins. Even though these indirect costs can be significantly higher than direct benefits (Hufbauer and Lowry, 2012), estimating their magnitude is too complex to take existing results for granted.

As usually occurs in such episodes, the safeguard measures spurred reactions from the partner concerned, in this case, China. First, the informal reaction came within days, with the announcement by Chinese authorities that they were launching investigations against certain automotive and chicken-meat products imported from the U.S. While these initiatives were not formally linked to the tire safeguard, the timing and official communication left little doubt that they constituted retaliatory measures.[40] As a result, China's Ministry of Commerce applied as of February 2010 antidumping tariffs and countervailing duties on U.S. chicken meat exports to China, with total rates between 50 and 135%. U.S. poultry exports to China dropped by 90%, or $1 billion, as a consequence. In addition, antidumping and anti-subsidy measures were taken in December 2011 against imports from the U.S. of some categories of vehicles, in a move also clearly taken in retaliation of the above mentioned trade conflict.

the corresponding gross annualized cost of the safeguard tariffs to U.S. consumers in 2011 was around $1.1 billion

The formal reaction was the dispute raised at the WTO (U.S.-Tyres, DS399), whereby China contested the merit of the safeguard measure with the U.S. commitments at the WTO.

(39) It is very likely that this would not have happened if the same tariffs were applied to imports of tires from all trade partners, not just China. This, however, would blatantly violate World Trade Organization rules. Thus, as a matter of practical fact, application of safeguard tariffs to only one treading partner is the norm.

(40) See *e.g.* Keith Bradsher, "China Moves to Retaliate Against U.S. Tire Tariff" - The New York Times, Sept. 13, 2009.

In September 2011, this dispute was concluding with the WTO Appellate Body upholding the challenged safeguard. Interestingly, China's retaliatory measures taken against U.S. poultry exports were also contested behind the WTO DSU, with a conclusion also favorable to the U.S.

3.2. The U.S. safeguard measure on steel products (2002-2003)

The steel safeguard measure decided by President Bush on March 2002 was taken against a background of severe downturn and secular decline of the industry, although an important role for imports is difficult to make. The political motivation of garnering support from a powerful vested interest in sensitive areas apparently played a key role. In practice, the safeguard included massive exemptions, rendering its trade impact mostly on trade diversion. While no tangible indices could be found of a positive impact on employment in the steel sector, negative impacts on steel-using industries seem to have been disproportionately large, included through outsourcing overseas. The only significant positive impact on the sector was increased stock share prices, mirrored in declines in downstream industries.

Another insightful example is offered by the global safeguard measure decided in March 2002 by U.S. President George W. Bush, whereby additional tariffs ranging from 8 to 30% were imposed on a wide range of steel products, for a 3-year period starting on 20 March 2002. These tariffs, based on Section 201 of the U.S. Trade Act of 1974, generally excluded imports from preferential trading partners, as well as from a list of 100 developing countries.

The motivation behind this measure were allegations of unfair trade practices in the E.U., China and Japan, among others, that were hurting the domestic steel industry. In fact, the U.S. steel sector was sharply declining long before this, with 35 companies, representing about one-third of all U.S. steel capacity, falling into bankruptcy between 1997 and 2001.

However, it is difficult to establish an important role for imports in this state of affairs. While the substantial expansion of low-cost production in countries like Korea and China had led to global over-capacity and increasing imports, U.S. steel imports actually fell from 34 million tons in 2000 to 23.5 million tons in 2001, as a result of depressed *domestic* demand.

The safeguard measures also seemed to be motivated by the willingness of Republicans to secure political support in steel-producing swing states like Ohio and Pennsylvania for the mid-term election in November 2002 (Read, 2005; Alexander & Andenas 2008).

The steel sector has a long record of filing for trade protection, worldwide and especially in the U.S., through "hundreds of petitions against firms from dozens of exporting countries over thousands of steel products" (Bown, 2013, p. 7).[41] For decades, it has been the sector where the highest number of antidumping duties have been applied.[42] Important Voluntary Restraint Agreements (VRAs) were also negotiated with the major steel exporting countries in the early 1980s. These protection measures frequently give raise to disputes: just between the E.U. and the U.S., three disputes were pending at the WTO concerning the steel sector when the safeguard discussed here was enacted.

This was also the case in the present episode, since eight WTO members (including the European Community) challenged the measures behind the WTO Dispute Settlement System (DSS). A panel was established in June 2002, and both the initial panel and the Appellate Body ruled against the U.S. on several grounds, a decision adopted on December 10, 2003, leading to the dismantling of the measures.

What was the actual impact of the safeguard measure on trade until it was dismantled? A detailed analysis shows that it was strongly heterogeneous across products and countries, reflecting the numerous exclusions from the safeguard. U.S. imports of steel products from countries on which a safeguard was indeed applied were strongly reduced, by 28% on average in 2002 and by a further 37% in 2003.[43] Even products investigated on which no safeguard was finally applied were significantly affected in 2002. Meanwhile, imports of steel products from countries excluded grew very strongly, by 40% for imports from preferential agreement trading partners in 2002, for instance, and 28% over 2002-2003 from exempted developing countries. And imports of non-safeguarded product categories increased. Overall, there was a 3% increase in U.S. steel imports in the 12 months following the safeguard. Once again, trade diversin was the main effect on trade flows.

The impact on jobs is more difficult to assert, because the safeguard was decided against the background of a severe cyclical downturn in the steel industry, combined with a structural declining trend as a share of manufacturing. Monthly statistics show that the decline in the 12 months following the safeguard (-4.9%), was slower than in the 12 months before (-13.8%). Since the same pattern is also found for manufacturing as a whole (although less pronounced), there is no clear sign of a significant employment impact. The steel industry went through significant restructuring and consolidation in the period following the safeguard implementation, but the most detailed analysis available does not establish a direct link between this trend and the measures.[44]

In assessing the broader impact of protection, this example is especially insightful because steel is an important input for many other industries. At the time the safeguard was decided, steel-using industries employed roughly 57 times more workers than the steel industry itself: 12.8 million compared to 170,000, respectively.[45] The price-increasing effect of protective measures

(41) See also Read (2005).

(42) See, *e.g.*, Blonigen and Prusa (2015).

(43) This figures are obtained from Bown (2013, Table 5, column 4).

(44) USITC (2003).

(45) Liebman & Tomlin (2007).

is a major concern in such a situation, especially given that most steel-using sectors are highly-competitive, so that steel-using firms face difficulties is passing through the price increases. In practice, outcomes were heterogeneous across categories, but they exhibited very strong price increases for important categories, with spot prices of steel sheets increasing by 40% or more in the 4 months following the safeguard, while producer price indices increased by 20 percent to 30 percent (even though this initial was somewhat tempered later on).[46] According to one econometric estimate, 200,000 jobs were lost in steel-using industries as a result of the safeguard, which is more than total employment in the steel industry itself at the same time.[47]

200,000 jobs were lost in steel-using industries as a result of the safeguard, which is more than total employment in the steel industry itself at the same time

The detailed assessment carried out by the USITC, which includes a detailed firm survey, sheds light on these issues. In addition to price increases, it found that almost half of responding steel-consuming firms (and many more in some cases) reported difficulty in obtaining steel in the quality and quantity desired.[48] 11% of all responding firms reported that they had shifted to sourcing finished parts from overseas as a result of the safeguard measures, and this proportion reaches 16% in steel fabricators and motor vehicle parts sectors, 29% in furniture and hardware, and 50% in household appliances. Asked if the safeguard measures led them to relocate U.S. steel-consuming facilities abroad, 7% responded that it did, a share increasing to 11% among motor vehicle parts makers, 12% among steel fabricators, 19% in furniture and hardware, and 33% in household appliances. On other words, the safeguard not only caused trade diversion, but also the threat of diversion of production abroad. This suggests that the indirect costs were disproportionately high compared to direct benefits. The central, model-based estimate of the USITC for the resulting impact was a real-income cost of $42 million, but this does not factor in the cost of indirect job losses, which could be far larger.[49]

11% of all responding firms reported that they had shifted to sourcing finished parts from overseas as a result of the safeguard measures

Another illustrative aspect of this safeguard is the impact on share prices. In accordance with the remarks above, shares of firms in steel-consuming industries experienced significant negative abnormal returns in response to the initiation of the safeguard investigation and the affirmative injury decision by the USITC. For steel producers, on the contrary, significant gains ensued. Within days of initiation of the investigation, steel producers' shares increased by 6% to 8% beyond what might have been expected otherwise. They increased further by 5 to 6% within days of the decision to impose the safeguard, while losing more or less the same proportion of their value when the negative ruling of the WTO panel was announced.[50] All these impacts are consistent with the rent-seeking motivation of those filing for protection.

To complete the description of the unintended costs of the safeguard, we emphasize the importance of the WTO dispute. Losing such an important and widely commented case in a multilateral arena involved significant reputational costs for the U.S., especially as the panel ruling emphasized that the measure was in breach of the country's commitments in several respects. The case was also illustrative of the potential importance of retaliatory measures. As soon as May 2002, the E.U. notified the WTO that it reserved its right to re-balance the adverse effect of the U.S. steel safeguards. It subsequently issued a list of products concerned by these would-be measures, which encompassed a wide range of goods, from orange juice and apples to sunglasses, knitwear, motor boats or photocopying machines, representing a total $2.242 billion of U.S. exports to the E.U. This initiative is illustrative of the tension created between the partners. We also wish to emphasize that the E.U. list was intended to respond to the political motivation by political targeting: it targeted products whose production is important in politically-sensitive states. The result for the U.S. was that even the political benefit of the safeguard was quickly undermined.

within days of initiation of the investigation, steel producers' shares increased by 6% to 8%

4. Plausible scenarios for the future

The recent U.S. presidential elections created a very peculiar context for international trade relationships. For the first time of the post-war era, a U.S. President has been elected based on an overtly protectionist agenda. It is too early to know precisely how this agenda will be implemented in terms of policies, since declarations and actions have sent contrasting and sometimes contradictory signals, while the main U.S. trade negotiator, the USTR, was only confirmed in early May.

As a matter of fact, while Donald Trump's stance during the campaign can easily be labeled "protectionist" or "neo-

(46) See USITC (2003), Vol. III, Figures 2-4, 2-5, 2-6.

(47) Francois & Baughman (2003).

(48) USITC (2003), Vol. III, Table 2-9. The following figures are from Table 2-15.

(49) Just for the period of February to November 2002, Francois and Baughman (2003) calculate that the safeguard had originated a wage loss worth $4 Bn.

(50) The estimates are drawn from Liebman and Tomlin (2006).

mercantilist", deciphering it is not so simple. Three main approaches seem to be overlapping, both in Trump's declarations and in the positions of his entourage. The first one can be labeled "economic nationalism"; it is highly confrontational, considering international trade as the locus of a struggle between opposing interests. A second approach, sometimes referred to as the "Wall Street School", focuses far more pragmatically on U.S. corporate interests. A third approach can be described as "old-school mercantilism", putting emphasis on using as aggressively as possible trade defense instruments, existing agreements and the multilateral trading system to defend U.S. interests. While the first approach is more visible, and proved a powerful engine during the presidential campaign, it is not necessarily the one that will weigh most on policies followed in practice. This is all the more true given that, according to the U.S. constitution, the conduct of foreign trade policy belongs to the Congress remit, and the Republican majority has a long-standing pro-trade tradition.

This warrants cautiousness in discussing scenarios for the future. Still, considering the most plausible outcomes and their consequences is useful for highlighting the likely stakes of trade policies in the coming years. We organize this discussion around the three main dimensions U.S. trade policy might take: bilateralism, aggressive use of trade defense, and breach of agreed principles.

4.1. Bilateralism

Donald Trump has repeatedly vocalized his disregard for multilateral or regional trade agreements, and his clear preference for bilateral "deals". This is perhaps the only area where no ambiguity is left, and one of his first decisions after taking office was to withdraw from the multilateral Trans-Pacific Partnership. The same logic seems to apply with respect to NAFTA: the administration formally notified Congress of its intent to renegotiate it. Even though the hope was expressed that the structure of the agreement could be trilateral, the need to negotiate most sensitive issues on a bilateral basis was never concealed. The same applies to the willingness to discuss bilaterally with China, with the announced 100-day action plan, and the first agreement announced in early May, focusing on a handful of sectors. More generally, the emphasis put by President Trump on the need to focus on bilateral deficits, on which he ordered a review partner by partner, is illustrative of this bilateral approach.

In itself, such approach does not call for any direct response from the E.U. In most cases, the E.U. is not directly concerned and these policies do not violate any explicit commitments to which the E.U. is also a part. Accordingly, the most sensitive issue will probably be for the E.U. to check that any policy or agreement enforced by the new U.S. administration respects the principle of non-discrimination, which is the pillar of the international trading system. This principle is called into question when the intention is displayed to negotiate a trade agreement covering a limited scope with a specific partner, as was the case recently with China. Such agreement can deal with issues of bilateral cooperation or help solve existing disputes. It should not, however, create differential rules or exclusive rights (the only exception for a developed country is through free-trade agreements, but these should concern "substantially all trade" between the partners involved). If that would be the case, the E.U. would be entitled to bring the case to the WTO DSS.

4.2. Aggressive use of trade defense instruments

Another important dimension of forthcoming U.S. policies will probably be trade defense instruments (TDIs). Not only is this a logical consequence of repeatedly calling competition from many countries "unfair", as Trump and many of his aids routinely do, it is also the easiest way to try reaping short-term trade advantages. Choosing a former lawyer who specialized for decades in TDIs as a USTR is a clear signal in this respect. Using repeatedly TDIs is by no way new, however, in particular as far as antidumping and countervailing measures are concerned; even the last months of the previous Obama administration were no exception in this respect.

What might be distinctive, though, is the spirit according to which TDIs are used. As explicitly stated in the trade policy agenda published in March 2017 by the USTR administration, "it is time for a more aggressive approach".[51] And this aggressiveness is warranted by the need to "defend American sovereignty over matters of trade policy",[52] while overtly dismissing WTO interpretations of WTO agreements that would "undermine the ability of the United States (…) to respond effectively to these real-world unfair trade practices".[53] The insistence upon self-initiation also signals willingness to use intensively these instruments, possibly based on political motivations. The initiation of two investigations under Section 232 of the Trade Expansion Act of 1962 is another strong signal. Indeed, this procedure, invoking threats to U.S. national security, is very unusual and bears potentially wide-ranging consequences. In sum, this aggressive use is likely to pay little attention to the conformity of practices to international agreements.

TDIs are considered safety valves in the international trade system. They make it possible to redress efficiently unfair practices, and they can also be interpreted as making it easier for international commitments to be rendered compatible with domestic constraints. For instance, it may allow increasing temporarily protection in a given sector or set of sectors to cope with a temporary difficult situation, in a way acceptable by the country's partners[54]. As such, TDIs may help make international

(51) Office of the United States Trade Representative (2017), p. 5.
(52) Ibid., p. 3.
(53) Ibid., p. 4.
(54) Bagwell and Staiger (1990) have in particular developed this argument, the empirical relevance of which is proven in Bown and Crowley (2013).

agreements acceptable and enforceable. However, this role is only constructive for the organization of international trade relationships to the extent that the corresponding practices are codified, as is done under the relevant WTO agreements. When their use clearly becomes abusive and in breach of agreed principles, TDIs can on the contrary play a destructive role, undermining mutual confidence and destabilizing trade relationships.

when their use clearly becomes abusive and in breach of agreed principles, TDIs can play a destructive role

Accordingly, the E.U. should closely monitor the way the U.S. uses TDIs, even when it is not directly a target, and contest any abuse or overuse. Beyond direct actions and reactions, the objective should be to give the U.S. incentives to refrain from abusing these instruments.

4.3. Breach of agreed principles

More overt breaches of agreed principles at the root of international agreements cannot be excluded. The electoral campaign of Trump, the candidate, manifested dismissal of the legitimacy of the U.S.'s international commitments and making proposals that are grossly at odds with them. This does not mean, of course, that President Trump's policies will follow suit. However, several points are especially disquieting, and we discuss three important ones.

The first one is the emphasis put in the recent USTR trade policy agenda in the primacy of U.S. law over the country's international commitments, and its tendency to undermine the legitimacy of WTO rules and of the way they are applied. The second point is the recourse made by the administration to Section 232(B) of the Trade Expansion Act, allowing taking action to restrict imports on the grounds that they threaten U.S. national security. This rarely-used law instrument is of special concern because it is difficult to control under WTO agreements and its consequences are not clearly limited.

it would clearly be in the interest of the E.U. to defend a rules-based trading system

The third point is the widely discussed tax reform proposal, including a border adjustment tax (BAT). At this stage, it seems unlikely that this will pass the whole congressional process. However, the fact that it is seriously discussed and defended by influential political leaders, is a source of concern, because it is unlikely to conform with WTO law, since BAT is only allowed for indirect taxes, applying to products and not to producers.

In whatever form, overt breaches of agreed principles would be a cause of serious concern for the E.U. Arguably, those most damaged by such policies would be in the U.S. themselves, but it does not prevent them from being harmful to the E.U., both through their direct economic impacts, and through their destabilizing effects for the multilateral trading system. Since this system is built out of reciprocal commitments, outright breaches by partner countries would call for reactions. These can take several forms, and the most natural one is to bring the corresponding dispute to the WTO DSS.

It may be the case, however, that policies obviously in breach of international commitments inflict direct economic damage to the E.U., for example, a BAT. Against such background, waiting for the DSS to rule on the corresponding case might be politically difficult. Sticking to its commitments and to agreed rules, though, the E.U. could also consider making use of countervailing measures, if indeed such policies can meaningfully be interpreted as equivalent to export subsidies.

It would clearly be in the interest of the E.U. to defend a rules-based trading system. According to this logic, only principled rules-based responses should be considered. However, pragmatism would be warranted if the E.U. is to defend its interests, and to dissuade its partners from applying non-cooperative policies. Announcing in detail what would be done might be counterproductive, because it could be interpreted as aggressive and unprincipled, since it would require describing a detailed response without precise knowledge of the policy to which it is responding. But displaying resolve in the willingness to impose reciprocity would be useful.

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5. Concluding remarks: Does protectionism protect?

There is a large consensus among economists that free trade can deliver many beneficial outcomes. In fact, this is one of the few principles that most economists find in common. In reviewing the main channels through which an economy can be affected by international trade, we show that there are many theoretical reasons to believe that this is so and that there is much empirical evidence to support this. We also emphasize, though, that concerns about harmful distributional consequences of international trade and adjustment costs are not unjustified. The gains from trade are not equally shared, and trade can hurt some.

Increasingly unequal gains from trade may in addition increase the risk of changes in attitudes towards globalization, with consequences for electoral outcomes. This has clearly manifested itself in many democracies where protection has become a central election campaign issue, notably the U.S., the United Kingdom and France, among others. Even if those who are hurt are compensated – which would unlikely be complete – voters may turn to populists demands for protection. As long as one voter's wage – or the wages of one's family and friends – is perceived to depend on protection on the margin, she will

vote for it, which may lead to a reinforcing populist protectionist cycle, with potentially significant and durable consequences.[55]

Against this backdrop, demands for protection are in principle legitimate. But the important question is the following: Does protectionism protect, in fact, those that are at stake of losing from free (or freer) trade? We argue that protectionism is both inefficient and unfair as a way to deliver protection.

Protectionism is inefficient, because it does not protect jobs in practice, at least not nearly as much as policymakers intend, and at large costs that dwarf any gains in employment. We substantiate this with a couple of examples, showing that unintended consequences, *inter alia* on consumers, on downstream industries and on exporting sectors, can be disproportionately large, even though they are not always apparent at first glance. Not only is the cost per job directly protected very large in many instances, jobs directly protected are actually often outnumbered by those put at risk. In a world of ever-deepening global value chains, the rationale for protection is even more nuanced, since export and import activities are closely intertwined, increasing the efficiency cost of protection.

Protectionism is also unfair: just as much as the gains from trade are not equally shared, the costs of protectionism are unequally levied, typically paid by those without a clear and focused political voice, and also include significant adjustment costs. The losers can be consumers at large (and especially poorer households, in many cases), sectors with limited capacities to defend their interests in a coordinated manner, or simply interests with less political connections. What is more, those who do gain from protectionism are not always those who were targeted, and profits often benefit entities other than workers.

protectionism is both inefficient and unfair as a way to deliver protection

How, then, should demands for protection be addressed? Several avenues are worth mentioning. First, dismissing protectionism as a general strategy does not imply that duties or countervailing measures should not be taken in response to partners' policies that are inconsistent with international commitments – for example, dumping or injurious subsidies. Fairness is difficult to define precisely in this domain and it is tempting to abuse this label, but international agreements provide a well-defined basis for defending rules-based international competition. Requesting and monitoring the full application of these agreements is legitimate, and trade sanctions should be used as needed in order to protect European economies from possible abuses, and to obtain compliance.

Second, a better way to protect those who are at stake to lose from import penetration is to directly support their income through public transfers and to assist them to relocate to other activities. The gains from trade are more than enough to fund instruments such as those of the European Globalisation Adjustment Fund, aiming at helping those directly concerned to cope with international competition shocks. Such policies are useful responses, which deserve far more generous funding, given the magnitude of the challenge at the European level. Even if this is the case, though, this corresponds to a rather narrow definition of adjustment to globalization, since the consequences cannot always be precisely identified. Therefore, policymakers should be attentive to specific and genuine local demands for protection, without giving in to protectionism *per se*.

Beyond this, adjustment to external shocks can be eased by alleviating the costs of occupational, industry and even geographic mobility. Part of this can be done by adjusting the focus of some education programs towards general skills, and by supporting training programs, *inter alia* within firms. Public policies should also play fully their role in insurance and redistribution. These roles are also needed to cope with other shocks, for example, due to technological change. The case for state intervention is particularly strong in relation with the consequences of international competition, since accepting trade openness is a political choice which should be fully assumed; if some groups of citizens lose due to this choice, it is understandable that they ask for compensating measures. Shocks linked to international competition also present the specificity of being more tightly focused geographically, in many cases. This calls for targeted public policy responses, to make sure that initial shocks are not compounded at the local level through labor and housing markets, or deteriorating utilities and public services.

More broadly, demands for protection and concerns vis-à-vis the consequences of globalization should be better acknowledged. This means that international trade and its institutional setup should not be considered as an end in itself, but rather as tools subordinated to higher-level objectives like employment, the environment, purchasing power or innovation.

Finally, the tense international context also raises concerns about the policies potentially applied by our partners, in particular the new U.S. administration. Looking into the future, we see potential threats to the international trading system, with potential damaging consequences for the E.U. in relation with the above-mentioned objectives. Displaying resolve in the willingness to impose reciprocity and full application of international commitments is useful. However, we do not see any reason – at least not at the current moment – for alarmist measures and responses to unknown actions by our trading partners. Defending a rules-based trading system is in the best interest of the E.U. It requires principled policies.

(55) Blanchard and Willmann (2016).

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