



Consumer benefits from EU trade liberalisation: How much did we save since the Uruguay Round?

Lucian Cernat*, Daphne Gerard*, Oscar Guinea[§] and Lorenzo Isella*¹

Abstract

Throughout human history, trade remained a key factor in explaining the economic rise and fall of societies and nations. Despite the perennial nature of international trade in our societies and the ample evidence in favour of its importance, the benefits from trade for individual consumers are still subject to misunderstandings. Using a novel technique matching very detailed household consumption and import data, we quantify one narrow aspect of the multitude of consumer gains from trade - the tariff savings for EU households and consumers over the last two decades, as a result of multilateral and bilateral trade agreements. Overall, the total annual tariff savings for all EU households (if the pre-Uruguay Round tariffs continued to apply on today's imports) amount to around 60 billion euro.

"We will help ensure consumers have confidence in the products they buy by supporting fair and ethical trade schemes and responsible supply chains. We will also analyse more closely how trade deals impact prices and choice for consumers."

Cecilia Malmström, Commissioner for Trade,

"Trade for All: Remarks at the European Parliament", 15 October 2015

Editor:
Lucian Cernat

**For further
information:**
ISSN 2034-9815

1. Introduction

Trade is probably as old as humanity. Even though archaeologists still dispute when humanity really began, there is evidence that trade and division of labour broadly defined are among the main determinants that led to the emergence of *Homo Sapiens* as the fittest human species, despite certain elements indicating that the *Neanderthals* had some biological advantages.

¹ *Chief Economist Unit, DG TRADE. [§]Scottish Government (work undertaken during secondment to the European Commission). The views expressed herein are those of the authors and do not necessarily represent the views of the European Commission or the Scottish Government.



Archaeological evidence suggests that the relative lack of trade ties within and among the Neanderthal communities compared to other early humans (Gee, 1996) is one of the hypotheses that explain *Human Sapiens'* survival and the extinction of the Neanderthals (Horan et al. 2005)².

Hence, from the early days of humanity trade played a critical role in ensuring the well-being of societies. As *The Economist* put it, "free trade and division of labour might be responsible for the very existence of humanity" (*The Economist*, 2005). One may therefore say that *Homo Sapiens* was born as *Homo Economicus*.

In the last few years trade and trade policy has been increasingly questioned by various societal groups despite the fact that it can bring tangible economic benefits to firms and consumers. One out of seven jobs in the EU is supported directly or indirectly by exports and research has showed that trade has a positive impact on the per capita income (Freyer, 2009; Rueda-Cantucho et al, 2016). Trade affects consumers and firms via multiple channels, such as productivity gains and sectorial reallocation of production affecting employment, wages and prices. In addition, there are also indirect effects, such as quality improvements and more product varieties. These consumer benefits are estimated to have a stronger positive effect on the poorest households. Low-income families spend proportionally more of their budget on consumer goods and as such lower import prices due to tariff dismantling are more important for them (Fajgelbaum and Khandelwal, 2016).

However, a growing number of people are questioning why free trade agreements are being negotiated and who benefits from tariff dismantling. Despite the complex interplay between trade liberalization and other factors affecting our daily lives, a 2010 Eurobarometer found that 44% of Europeans think they have benefitted from trade, while almost 20% of them do not know if they were positively or negatively affected by trade. Interestingly, the people that indicated a positive effect of trade named lower prices and a wider basket of products as the main benefits from trade while the people who felt that trade had negatively affected their welfare mentioned higher prices and lower quality products as the main reasons why they feel that trade had an overall negative effect. Younger, higher educated people and, interestingly, consumers who knew more about the origin of the goods were more likely to feel positively affected by international trade (European Commission, 2010). In parallel, there is growing evidence suggesting that global trade is subject to mounting protectionist measures (see for instance Evenett, 2017).

² There is ample archaeological evidence of long-distance trade in stone, ivory, and fossil and marine shells among *Homo Sapiens* communities, to a much greater extent than the Neanderthals (Tattersall et al., 1988).



2. Consumer benefits from trade

Consumers benefit from free trade in many ways, notably from lower prices, more product varieties, and higher quality. These sources of consumer gains are often very difficult to document and disentangle from other economic factors, not only from a research perspective but even more so from an individual consumer point of view. Research on the empirical effects of tariff dismantling on consumer benefits in the EU is still scarce.

Notwithstanding the foregoing, the existing evidence suggests that international trade promotes higher quality products (Hummels and Skiba, 2004), and lower tariffs lead to lower prices. Breinlich et al. (2016) show that the quality adjusted prices for imported goods decreased by 19 % and the quality of goods increased 26% for the UK due the FTAs concluded by the EU. Furthermore, Berlingieri et al. (2017) find a quality increase of 7% on average for the EU thanks to existing trade agreements, resulting in a lower consumer price index.

Francois et al (2007) observe that average clothing prices dropped 16.2 % relative to the general price level between 1996 and 2005 as a result of the WTO Agreement on Textiles and Clothing that ended the old system of quotas. Similarly, De Loecker et al. (2016) indicate that tariff liberalization (a 62% decrease in tariffs) led to a drop in consumer prices by 18% in India. Furthermore, Goldberg et al. (2010) offer evidence that 31% of the wider consumer choice and product variety in India is associated with tariff reductions.

In addition, tariff liberalization by third countries can also have a positive impact on prices at home. Amiti et al (2017) show that U.S. manufacturing prices declined by 7.6% between 2000 and 2006 due to China's accession to the WTO in 2001. This drop in prices was the result of the effect of China lowering its input tariffs and hereby increasing its imported inputs resulting in higher productivity and more exported varieties. These are additional gains for consumers that most empirical studies do not take into account as they only look at the effect of tariff liberalization on the home country.

The interaction between lower prices, more varieties and higher product quality blurs the visibility of trade benefits for consumers. The paper tries to contribute therefore to a better understanding of consumer gains from trade, focussing on a very narrow aspect of these gains. Using a novel technique matching very detailed household consumption and import data, we quantify the size of consumer gains stemming from a reduction in import duties paid by EU households and consumers over the last two decades, as a result of multilateral and bilateral trade agreements. Essentially, this paper focusses on only one single element (tariff reductions) from the complex panoply of what constitutes today trade policy and how consumers have benefitted from trade.



The paper only offers a first in-depth look at the consumer savings derived from lower tariffs on merchandise imports. But consumer gains from trade are far more complex than just tariff savings. International trade leads to gains from lower overall prices in the domestic economy, a higher degree of competition, technological diffusion, higher productivity a wider choice of products and goods of a higher quality.

Consumers also benefit from increases in services trade, on which custom duties are not charged, and hence not covered in this paper. The paper does not attempt to estimate the size of all these consumer benefits, nor do we try to estimate the increase in consumer welfare triggered by a higher disposable income as a result of access to cheaper imports. The impact of international trade on job reallocation and income effects as a result of international competition are not taken into account either.

With this humble and limited objective in mind, the remainder of this paper will offer an overview of the distribution of consumer spending in Europe and different imported goods categories. The paper will also quantify the annual monetary gains for EU households derived from the last two decades of EU trade policy implementation, stemming from lower tariffs on imported products. In particular, the paper can be interpreted as an attempt to quantify the extra cost that the average EU consumer would have to pay for its current consumption pattern in the absence of all the progress made by EU trade policy initiatives since the Uruguay Round.

The next section offers a short overview of the EU trade policy during the last two decades and the main trade policy initiatives, at multilateral, plurilateral and bilateral level. Section 4 provides a detailed explanation of the analytical framework used to match consumption patterns in Europe with detailed import data, and presents several key findings from the descriptive statistics of this newly created dataset. Section 5 presents the current distribution of imports and tariff burden across various categories of household consumption. Section 6 estimates the average annual tariff savings since the Uruguay Round, based on current consumption patterns. In section 7 we develop a proposal for enhancing the visibility of trade benefits for individual consumers. Section 8 concludes with a summary of the main messages.

3. The evolution of EU trade policy since 1990s

EU trade policy has pursued an open trade agenda for many decades. Accounting for a considerable share of global trade flows (almost 17% of the world trade in goods and services in 2016), the EU economy relied considerably on imports and exports for its economic competitiveness. As part of the EU trade policy toolbox, the multilateral front was the best avenue to achieve a broad-based set of liberal trade rules, promoting EU trade interests.



Consecutive multilateral trade negotiations rounds under the GATT have reduced the average EU MFN tariff for manufactured goods to around 4%, while for agriculture the EU average tariff was around 15% (Woolcock, 2011).

The launch of the Uruguay Round of multilateral trade negotiations remains the largest successful attempt in human history to liberalize global trade. For over seven years, almost all countries in the world engaged in painstaking negotiations aimed at liberalizing all trade products (from agriculture, textiles, to manufactured products) and services (from accounting, banking, to waste management and water transport) across several trade rules (tariffs, non-tariff barriers, subsidies, intellectual property, investment measures, etc.)

During the Uruguay round, all industrialised countries and many major developing nations agreed to gradually reduce import tariffs by over a third and in some cases even more. In addition, a number of sectoral agreements fully liberalized a broad range of specific products in certain sectors.³ The EU final Uruguay Round offer reduced import tariffs on average by 37% for all WTO partners. When the structure of imports and the relative importance of different sectors subject to more ambitious levels of liberalisation are taken into account, the degree of EU liberalisation vis-a-vis specific trading partners would be higher for countries that tend to export goods that were subject to total tariff elimination in the EU offer. For consumers, the Uruguay Round made considerable progress in liberalizing two sectors of major importance to individual spending: agricultural products and textiles and clothing. On agriculture, the EU (like other developed WTO members) agreed to reduce its tariffs by 36% (WTO, 2017). For textiles and clothing, an area subject to numerous trade restrictions for decades, the Uruguay round provided a timetable for its gradual liberalization, both in terms of quota elimination and tariff reductions (European Commission, 1994).

In parallel, the EU has been pursuing an ambitious bilateral negotiating agenda, especially since the conclusion of the Uruguay Round. The EU currently has over 40 free trade agreements (FTAs) in force with countries on virtually all continents (from neighbouring countries in Eastern Europe and North Africa to countries in Latin and Central America, North America, Africa, and Asia). These FTAs offer considerable tariff reductions, effectively ensuring that consumers have duty free access to all goods originating in our FTA partner countries (see Figure 1).

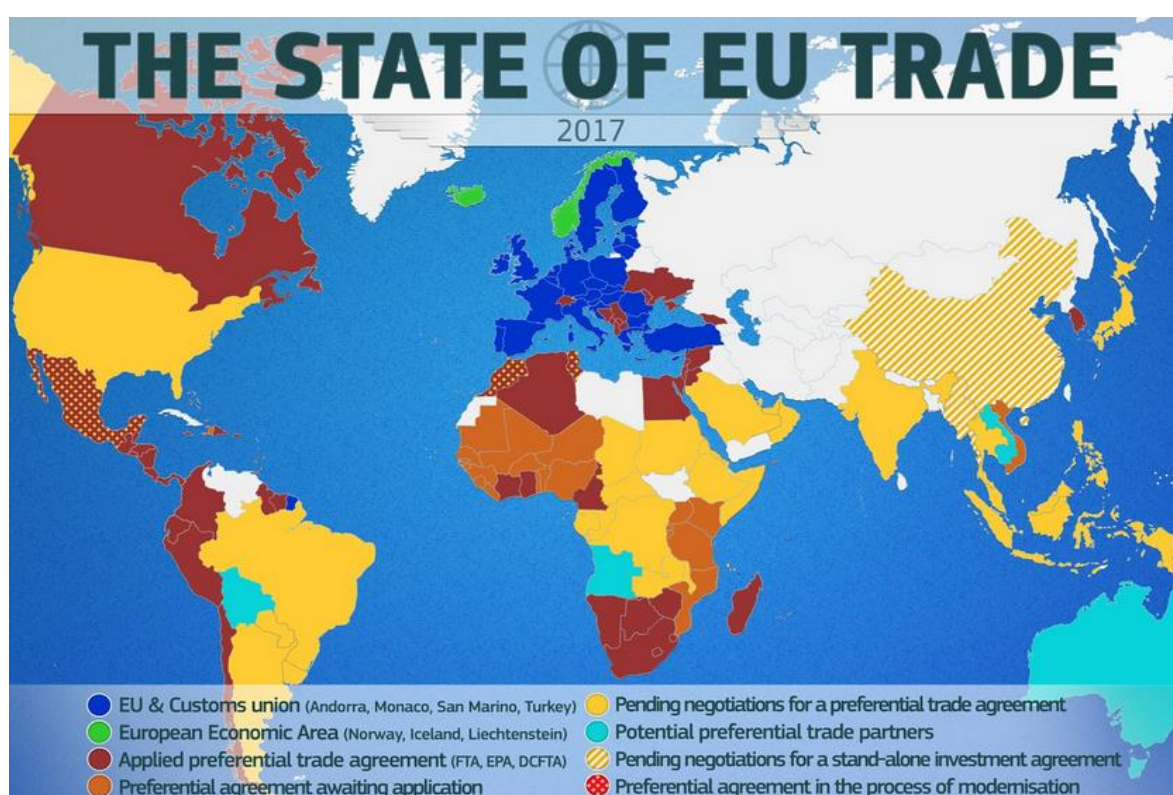
On the unilateral front, the EU was a pioneer in introducing since 1971 a preferential initiative in line with the UNCTAD proposal for a Generalised Scheme of Preferences (GSP) (UNCTAD, 1968). The GSP scheme introduced by the EU remains an important trade policy tool, whose objective is the expansion of exports to the EU by developing countries in accordance with their needs. The standard EU GSP scheme reduces import duties for

³ Other sectoral agreements (like the Information and Telecommunication Agreement) were adopted in subsequent years.



approximately 66% of all EU tariff lines. Currently, 23 developing countries and territories enjoy these reductions. In addition, the EU introduced a GSP+ scheme⁴, with essentially the same 66% of all tariff lines being fully liberalised (as opposed to just a preferential margin under the standard GSP). Currently, there are 10 beneficiaries under the GSP+ scheme. Last but not least, the EU introduced in 2005 a full duty-free, quota-free access scheme dubbed Everything But Arms (EBA) in favour of least developed countries (LDCs). Currently, there are 49 beneficiary countries.

Figure 1. The state of EU trade policy: existing and future bilateral agreements



Source: DG TRADE.

Although the main goal of these unilateral preferential schemes (standard, GSP+ and EBA) is to promote economic development in beneficiary countries by offering them preferential access to the EU market, these schemes also allow EU consumers to reap greater benefits from trade by paying lower or no duties on their purchases. In 2016, almost €63 billion of imports received GSP preferences – €32 billion of imports from countries under the general arrangement, around €7.5 billion of imports from GSP+ beneficiaries and €23.5 billion of imports from EBA countries.

⁴ The GSP+ scheme is aimed to offer an extra-incentive for developing countries to ratify and effectively implement core international human and labour rights, and a number of environment and good governance conventions.



Overall, thanks to all EU trade policy initiatives (multilateral, bilateral, and unilateral), currently around 76% of EU imports enter duty free, for the benefit of EU consumers across Europe.

4. Matching consumer spending and trade data: creating the HS-COICOP concordance table

This section describes the methodology used to match import and consumption classifications. It provides a concordance table casting a bridge between imports and household expenditure. We point out that a household should not be equated to a family: in the context of social surveys and the population and housing census, private households include single persons living alone and groups of people, not necessarily related, living in the same accommodation. For instance, in 2013, Eurostat reported a total number of 214 million households in Europe, out of which single-person households accounted for almost one third (31.7 %) of the private households in the EU-28 (see the Eurostat page on statistics on household for more information⁵).

Trade classifications were designed to match custom procedures and measure the impact of foreign imports on the economy. Unfortunately, these classifications contain limited information on the final consumption of these foreign goods. Other statistical classifications such as the Classification of Individual Consumption According to Purpose (COICOP) were designed to measure household expenditure and may be better suited to assess the impact of public policy, including trade policy, on individuals. However, trade statistics are not available in COICOP categories.

To match the Harmonised System (HS), an internationally standardised system to classify traded products, and the COICOP classification, we use the correspondence tables contained in the RAMON database⁶. We link COICOP and HS 2007 through the Statistical Classification of Products by Activity (CPA) to obtain a concordance table based on the HS 2007 nomenclature. This nomenclature applied to imports to the EU in the period 2007-2012. We rely on another concordance table to link the HS 2007 to the HS 2012 in order to be able to use the match the most up-to-date import data to the COICOP categories. More detailed

⁵ See http://ec.europa.eu/eurostat/statistics-explained/index.php/People_in_the_EU_%E2%80%93_statistics_on_household_and_family_structures#Household_composition:_number_of_persons.

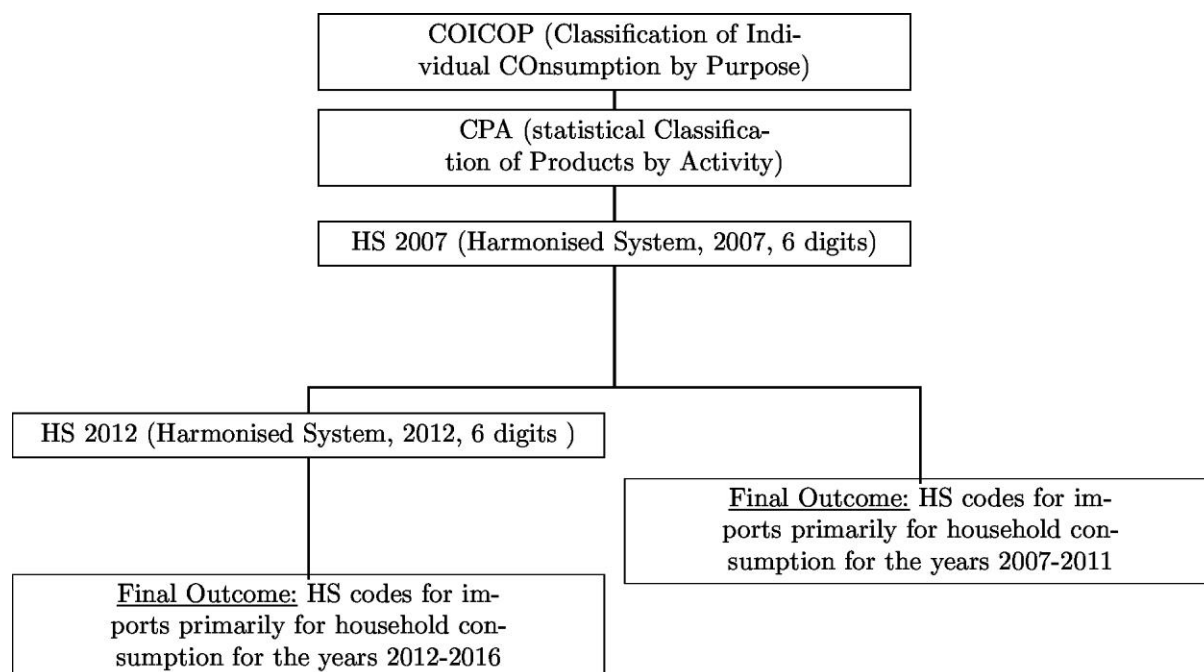
⁶ The RAMON (Reference And Management Of Nomenclatures). See http://ec.europa.eu/eurostat/ramon/rerelations/index.cfm?TargetUrl=LST_REL



information about the statistical sources and classification schemes used in this paper is provided in Appendix 1.

The procedure to construct the concordance table is illustrated graphically in the Figure 2 below. Our concordance table links the 4-digit COICOP categories (63 different codes) to about 2,700 out of approximately 5,000 HS 6-digit codes. In general, the correspondence between the COICOP codes and the 6 digit imports will be one-to-many given the vastly different number of COICOP categories and HS codes. The final concordance table does not link all the imports in the HS 2012 nomenclature to a COICOP code since imports which are not directly relevant to household expenditure end up in a fictitious "999" COICOP category. This is for instance the case of specialised industrial equipment like parts of a turbine in a power plant.

Figure 2. Matching the Harmonized System (HS) and the Classification for Individual Consumption by Purpose (COICOP) categories: methodological steps



Source: Authors' elaboration.

Despite the higher level of aggregation of the COICOP categories with respect to the HS at 6 digits, some products within the same HS code are associated to several COICOP categories. This happens about 17% of the times. In the absence of any specific product knowledge, we



assume that import values are split equally among their matching COICOP codes. The reason why an HS 2012 import may be matched to several COICOP categories is due primarily to the correspondence between the CPA 2008 product and COICOP categories. There is usually a one-to-one correspondence between the HS 2007 and the HS 2012 and between the HS 2007 and the CPA 2008 nomenclatures, whereas the COICOP categories tend to be much more aggregated. As an example, HS 560121 (cotton wadding of textile materials) is linked to COICOP 0312 (clothing: garments), 0313 (clothing: cotton accessories) and 1213 (products for personal care including cotton wool). We show below (Table 1) the corresponding entries in our concordance table since they illustrate the general structure of the concordance table (where we use the word COICOP chapter to denote the 2 digit COICOP codes).

Table 1. An illustrative example of HS-COICOP concordance table

COICOP Chapter	COICOP 4 digits	CPA 2008	HS 2007	HS 2012
03	0312	172212	560121	560121
03	0313	172212	560121	560121
12	1213	172212	560121	560121

Source: Authors' elaboration.

The final result is rather transparent and all the steps detailed above are automatically embedded in the concordance table which can be read both left to right (from the COICOP code to all the matched imports) and right to left (from an import code to the corresponding COICOP category), which is what we did in this analysis where the starting point was given by the import data.

Our concordance table does not cover all the COICOP chapters. This is not due to any data limitation or imperfect matching, but stems from some chapters of household expenditure, namely COICOP chapters 10 (education), 11 (restaurants and hotels), 13 (individual consumption expenditure of non-profit institutions serving households) and 14 (individual consumption expenditure of general government), being related to services rather than to



products listed in the HS nomenclature. As a consequence, the aforementioned COICOP chapters are left out from this study.

5. The current patterns of household consumption: imports and tariffs

Having developed the correspondence table, we classify EU imports by their corresponding COICOP category.

All the calculations reported in this study have been performed on two different data bases, namely the Market Access MAP (MACMAP) of the International Trade Centre of the United Nations and, as a robustness check, using an internal database from DG TAXUD. The structure of the two data bases is different: MACMAP provides directly an ad valorem trade averaged tariff at the HS 6 digit level, whereas the TAXUD database provides the import duties on products at the 10 digit level and it is up to the user to perform the aggregations.

Despite these methodological differences, we observed a good match in the calculations carried out with both databases, thus ensuring the statistical robustness of our analysis. As a consequence, we limit ourselves to showing the results obtained with a single data base, namely MACMAP.

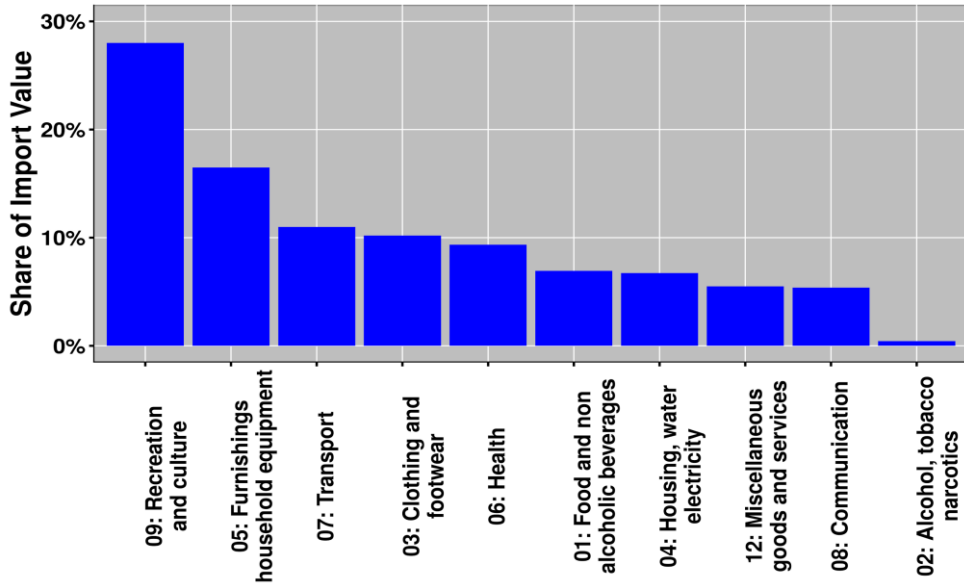
Figure 3 below shows the distribution (in percentage) by COICOP chapter of the extra EU28 imports relevant for household expenditure. The most important categories are "Recreation and Culture" and "Furnishing Household and Equipment" making 44% of total extra EU28 imports. Another 30% of total consumption is made by "Clothing and Footwear", "Transport" and "Health". The same analysis was performed for the years 2012-2015 showing similar results, showing the stability of import shares by COICOP chapters over time.

In the case of "Recreation and Culture" the leading imports belong to HS section 85 (which includes products like TVs and electronics recorders), IT and communication equipment (e.g. computers, mobile phones), and HS 95 (toys and games). The appliances in HS section 85 also feature prominently in "Furnishing and Household Equipment", together with plastic articles (HS section 39), articles in iron and steel (HS section 73) and furniture, bedding and mattresses (HS section 94).

The products in HS section 85 (which include electric motors and a variety of electrical appliances) are also important for "Transport", where a prominent role is also played by HS section 87 (vehicles) and by various kinds of fuels (HS section 27). We also looked at imports at a much finer granularity by collecting, for each COICOP chapters, all the import values of the corresponding imports at the HS 6 digit level.

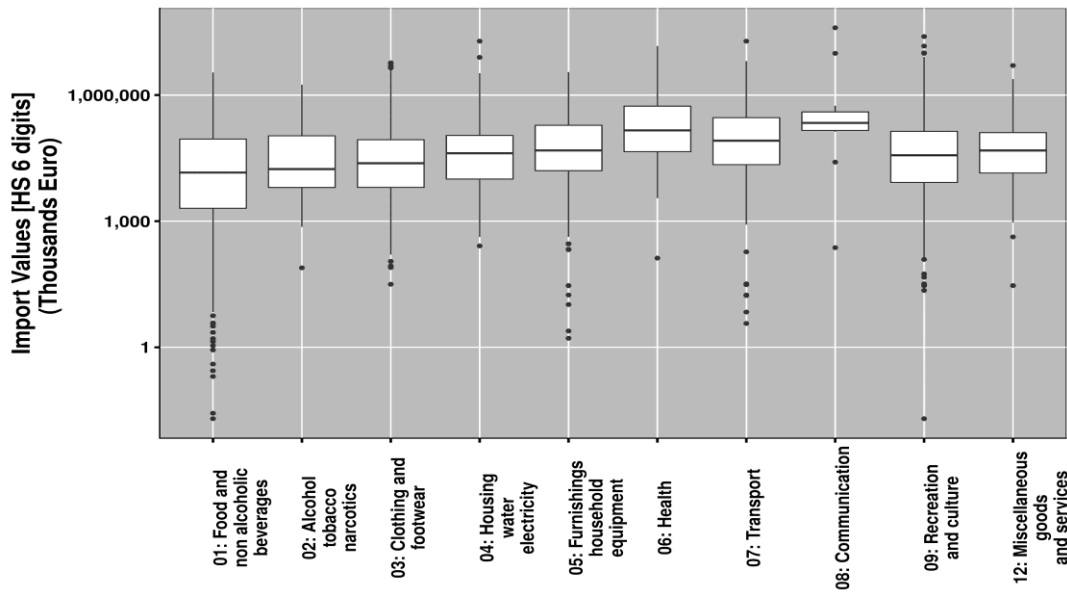


Figure 3. Percentage share of extra EU28 imports by COICOP chapter, 2016



Source: Authors' calculations based on MACMAP and the HS-COICOP concordance table.

Figure 4. The distribution of imports, by HS-6 products and COICOP chapter



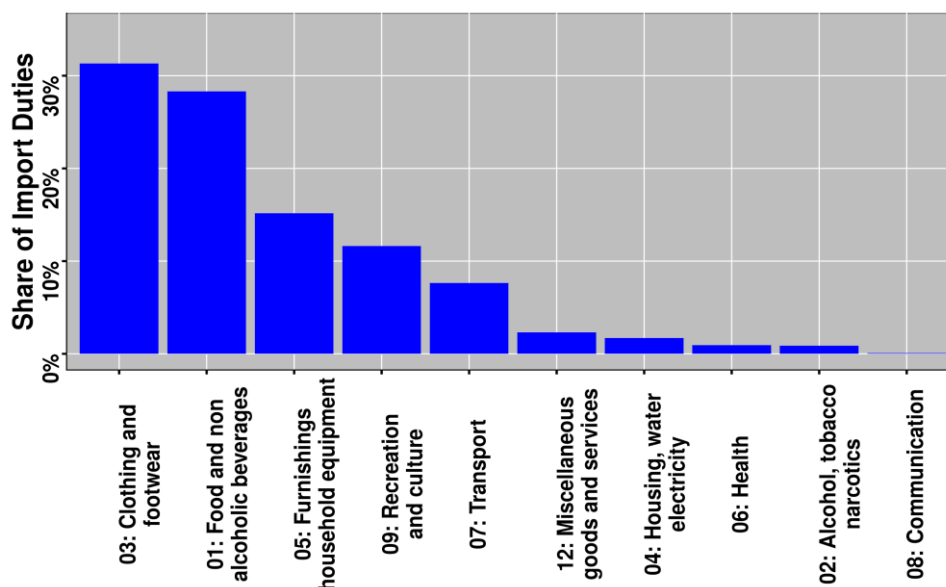
Source: Authors' calculations based on MACMAP and the HS-COICOP concordance table.



The ensuing distributions, for the year 2016, are represented as boxplots in Figure 4, which shows that the median value of the HS 6 imports in every COICOP chapter amounts to several tens of millions of euro, with the "Health" and "Communication" chapters having a somewhat higher median value. In almost all the COICOP categories we detected some products that are outliers. For instance, bananas account for a large share of "Food and non-alcoholic beverages" household expenditure. Similarly, wine is a top item under "Alcohol and tobacco", portable electronics like laptops in "Recreation and Culture".

Thanks to the matching of import statistics with consumer spending categories, our methodology allows us to calculate the amount of import duties collected by COICOP category. Based on the latest trade data available (both in terms of import flows and tariffs) and the matching of detailed trade data (HS categories) into consumer spending categories (COICOP) we can estimate the distribution of import tariffs paid by EU households on all consumer products, grouped by broad COICOP categories (see Figure 5). The most important categories in terms of current tariff burden for EU consumers remain "Clothing and footwear" and "Food and non-alcoholic beverages".

Figure 5. The distribution of import tariffs paid by consumers across COICOP chapters, 2016



Source: Authors' calculations based on MACMAP and the HS-COICOP concordance table.

Despite being the sixth and the fourth most important categories regarding total imports respectively, "Clothing and Footwear" and "Food and non-alcoholic beverages" represent the highest shares of collectable import duties for EU consumers. Within "Clothing and Footwear", the most important imports in terms of collectable duties are clothing accessories,



both knitted and non-knitted (HS sections 61-62) followed by footwear (HS section 64) and artificial textile materials (HS section 54). As far as "Food and non-alcoholic beverages" are concerned, the most important products in terms of import duties are meat and fish (HS sections 02-03), edible fruits (HS section 8), followed by preparations of meat and fish (HS section 16). Of course, beyond these items facing rather high import tariffs in Europe, other product categories with low import tariffs are also very important for consumer welfare. For instance, medicines, a category of products vital for EU citizens' welfare has a relative low level of import tariffs when compared to its share of imports. Similarly, "Communication equipment", which amounts for €64bn of EU28 imports, represents nowadays less than 0.1% of EU28 import duties, thanks to a number of trade initiatives taken in the past decades.

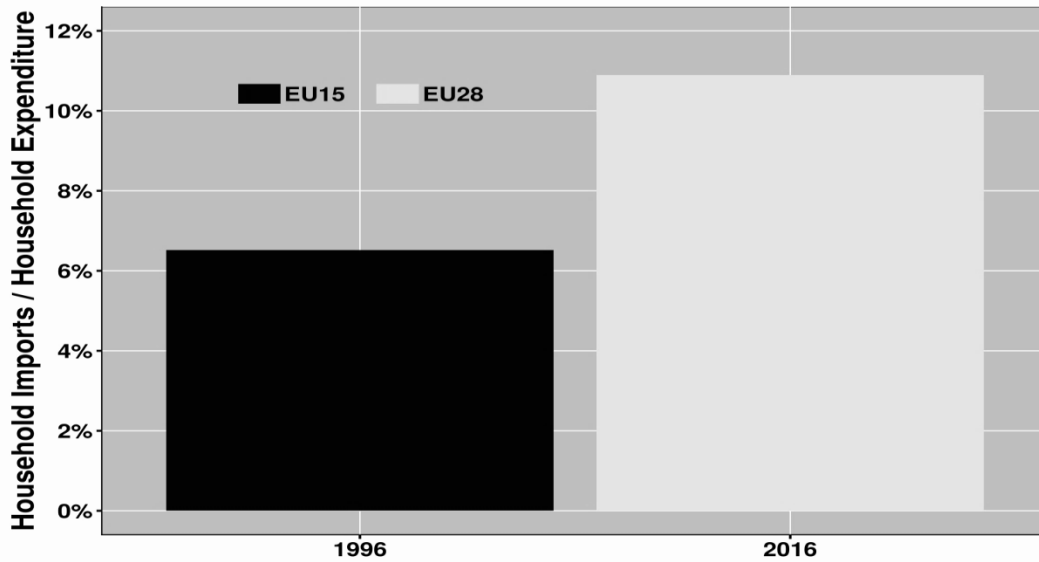
6. Tariff savings from post-Uruguay trade liberalisation: benefits for consumers

While, as shown previously, EU consumers enjoy nowadays a large range of duty free imports, this was not always the case. While the liberalisation process has been smooth and gradual over the last couple of decades, the importance of imports in overall household consumption has also increased from 6.5% for the EU15 in 1996 to almost 11% for the EU28 in 2016 (see Figure 6). The historical comparison takes into account the official membership of the European Communities (1996) and the European Union (2016) but using a constant membership (EU15 or EU28) throughout the 1996-2016 period doesn't change this growing trend. Hence, in this section we try to take stock of the considerable tariff saving gains EU consumers have already reaped from the last few decades of EU trade policy.

In this section we quantify the cost that an average household would have incurred on its current consumption in the absence of all the progress made by EU trade policy initiatives since the Uruguay Round.⁷ Even though this calculation does not account for the positive effects on wider variety and better quality, it illustrates the monetary gains in the form of savings from lower import tariffs enjoyed by EU consumers. In order to apply pre-Uruguay tariffs to nowadays import we resorted to DG TRADE data sources for the tariffs on EU industrial products applied in the early 1990s and we used an estimated 27% ad valorem equivalent for the agricultural products (Bureau et al, 2000).

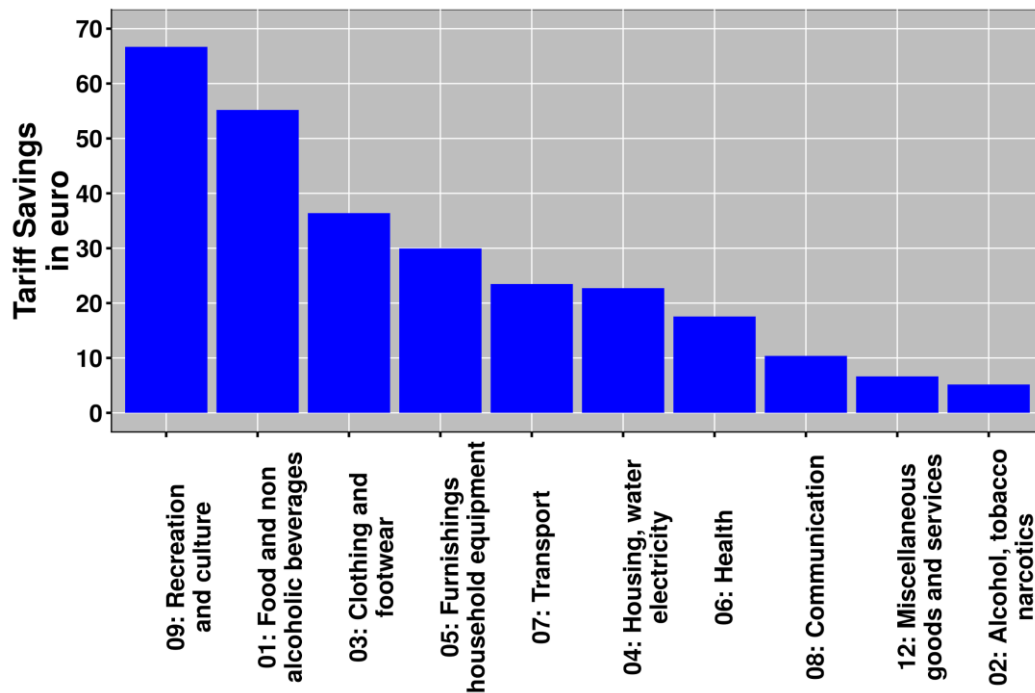
⁷ It is important to note the underlying assumption and the caveats involved in this hypothetical estimation. Obviously, going back in time and increasing tariffs in the process will not keep consumption and import patterns constant. To account for such a reduction in imports, one would need a modelling framework and several other parameters (e.g. trade elasticities) being factored in. Other important factors (e.g. technological change, nowadays products being non-existent in mid-1990s, lifestyle changes, etc.) are also important issues but hard to factor in analytically. Hence, our estimation needs to be seen as indicative of the tariff burden that consumers would face from a sudden increase in protectionism from today's tariff levels to pre-Uruguay tariffs, in case they wish to keep their current lifestyle and consumption patterns.

Figure 6. The ratio of imports in household consumption expenditure: 1996 and 2016



Source: Authors' calculations based on MACMAP, the HS-COICOP concordance table (extended to include the HS 1996 nomenclature) and Eurostat COMEXT database.

Figure 7. Consumer gains from trade: tariff savings since the Uruguay Round



Source: Authors' calculations based on Macmap and the HS-COICOP concordance table.



Overall, the total annual tariff savings for all EU households (if the pre-Uruguay Round tariffs continued to apply on today's imports) amount to around 60.3 billion euro. Figure 7 offers a breakdown of these overall annual tariff savings, across different types of consumer expenditures.

For example, on "Food and non-alcoholic beverages", EU households would have to pay on average €55 more every year if EU tariffs on imports were kept at pre-Uruguay round levels. Likewise, given the current import of items for recreation and culture, EU consumers have been saving on average €67 annually, as a direct result of the various post-Uruguay round EU trade policy initiatives.

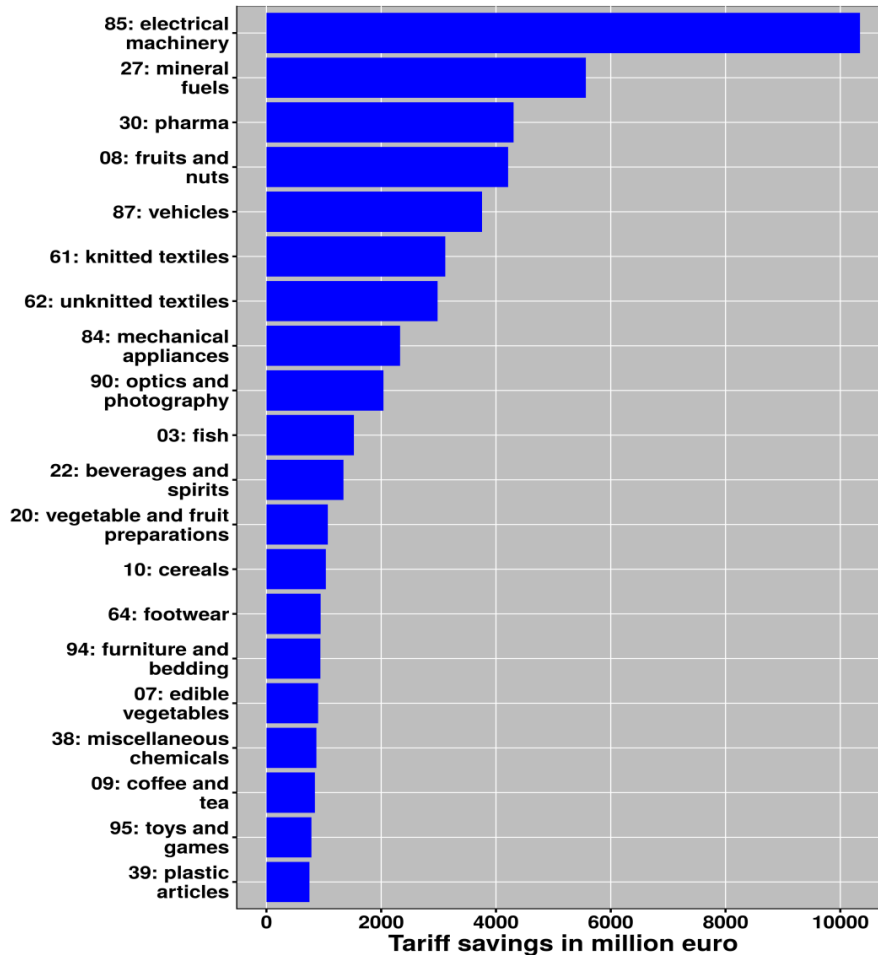
Another way of presenting the importance of tariff savings for the average EU household is to calculate the total, cumulative tariff savings at EU level that all consumers saved thanks to the post-Uruguay round EU trade policy (Figure 8). Electrical machinery (HS 85: a vast section ranging from vacuum cleaners to mobile phones and TV sets) is the ones with the largest absolute tariff savings for the EU consumers as a whole, followed by mineral fuels (and petroleum derivatives), pharmaceuticals, edible fruits, vehicles and textile products.

Apart for these average tariff savings by COICOP categories shown in Figure 7 or the top 20 imported items by HS chapters (Figure 8) on which EU consumers gained the most in terms of tariff savings annually for several decades since the Uruguay, it is perhaps also relevant to give a few concrete examples, whereby a single purchase of an imported product can in fact exceed these average annual tariff savings.

For instance, let us consider the purchase of a South Korean made combined refrigerator-freezer (HS code 841810) with an average import value of around €600. Nowadays there are no import duties payable on this item, but in a pre-Uruguay world an import tariff around 2.5% would translate into an extra cost of about €15-20 and up to twice as high in case of top-quality appliances. A similar line of reasoning applies to a high-end mobile phone. For instance, the import price of one of the latest high-end mobile phones is in the range of 500-600 euros (Reisinger, 2017). The pre-Uruguay import tariff on such a phone (if it existed in mid-1990s) would have been around 2.5%, implying an extra cost of about €12-€15, which is higher than the average annual household savings for the "Communication equipment" in Figure 7. The purchase of a medium-sized imported car from Korea (HS code 870323) with an import unit value of around €13,300 is now tariff free, but in the early 90's a 10% tariff would have implied an extra burden of more than €1,300 for EU consumers.



Figure 8 Top 20 HS chapters, by total tariff savings



Source: Authors' calculations based on Macmap and the HS-COICOP concordance table.

The point of these examples is to stress that the average savings in Figure 6 are by no means an upper bound for the household tariff savings, and that a single household may exceed those values easily by an order of magnitude with just a few imported items.

7. Do consumers see the benefits from FTA negotiations?

This study shows that the importance of extra-EU imports in overall household consumption has increased from 6.5% for the EU15 in 1996 to almost 11% for the EU28 in 2016. We estimate that the overall total annual tariff savings for all EU households (if the pre-Uruguay Round tariffs continued to apply on today's imports) amount to around 60.3 billion euro, a



non-negligible amount given that only 11% of the average household income is spent directly on imported products.

However, as noted above, only 44% of Europeans think that they benefitted from trade, while around 20% of them do not know if trade had any impact on them, either positive or negative (European Commission, 2010). Moreover, despite the growing importance of imported products in the shopping cart of households, consumers do not necessarily link this to trade policy.

The World Trade Report 2013 (WTO 2013) confirms the discrepancy between how voters perceive the macroeconomic impact of globalisation, on the one hand, and the impact to their individual lives, on the other. Using survey evidence from European and Asian countries, the report showed that, in most countries, protectionist sentiments were not so much triggered by concerns about nationwide unemployment levels. These findings suggest that the surveyed population acknowledged the potentially positive effects of globalisation on the overall economy, but that many people expected not to be in a position to share in the benefits of globalisation. In other words, a majority of individuals expect globalisation to have a general positive effect on society but they cannot find a clear, tangible link to their daily lives.

Today's challenge for policy makers is thus to empower individuals to see more directly how trade liberalisation has a positive impact on their lives. As such, there are indications that providing more information on the origin of imported goods might dispel some of the misunderstandings surrounding the impact of free trade agreements and trade in general.

One potential solution to raise awareness among individual consumers about the tangible benefits of FTAs could be via their shopping basket. The existing empirical evidence suggests that consumers are more interested in knowing if a particular FTA reduces their own shopping prices, as opposed to whether the EU GDP will increase by a few billions. Such valuable individual consumer information could be added to the shoppers' receipts, based on the origin of a good and the tariff that is eliminated as a result of FTA formation.

Providing this additional information will generate several benefits. Consumers will not only be made aware of the beneficial effect of FTAs on their own individual welfare but it also fits with a growing consumer interest with regards to the origins of imported goods (Kumar et al., 2017). Such a "free trade comes to your shop" logic could empower the consumers by giving them clearer and more visible information on issues that are in line with a more "value-based" progressive EU trade policy agenda (European Commission, 2015). It gives consumers extra tools to make a more an informed decision on the goods they consume. Furthermore, as noted above, consumers aware of the origin of goods are more likely to feel positively affected by trade (European Commission, 2010).



Providing easily accessible information on the country of origin is not only interesting for the consumer but also for producers and distributors as it gives the option to improve branding, avoid consumer overreaction in cases of food safety incidents, and it can lead to more cost-efficient recalls (Kumar et al., 2017). For example, the Western Australian Farmers Federation already designed a mobile application that allowed customers to quickly scan a QR code to determine the country of origin of goods they buy to accommodate the concerns of consumers with regards to health and sanitary standards (Gartry, 2015). Another example is offered by coffee farmers in Ethiopia who have recently implemented a barcode traceability scheme as a proof that their coffee beans comply with certain quality and sustainability standards (Newsome, 2016).

Enhancing the traceability of goods and the information attached to them is not a novelty for producers. The International Article Number (also known as European Article Number or EAN) is a standard barcode system used in global trade to identify a specific retail product type, in a specific packaging configuration, from a specific manufacturer. For instance, barcodes do not just simply record "milk" but, also contain many product attributes that help differentiate them by consumer preferences. Similarly such barcodes can also record information about the exact location of the farm that produced the milk or the specific packaging or production facility, information currently needed for product safety and conformity assessment purposes (GS1 2017). The EAN-13 barcodes already include country of origin for the manufacturer (EAN, 2017). Encoding the value of the duty savings conferred by an FTA to goods originating in trading partners that have an FTA with the EU can conceivably also be encoded in the product specific barcode, the technological backbone of the digital logistics platform currently used by firms involved in global supply chains.

Not only suppliers and distributors are well versed with traceability and the barcode technology, customs officials are also increasingly using barcodes as part of their toolkit. There is a growing use of barcodes by customs authorities as part of their daily activities, not just for tax collecting purposes but also for fraud prevention and as part of their anti-counterfeit strategies. For example the World Customs Organisation launched in 2011 the Interface Public-Members (IPM) platform as part of the counterfeit strategy to provide custom officers with extra product information. In 2015 the IPM platform was updated with a mobile application that allows customs officials to quickly scan the barcode on the good and to receive additional product specifications (WCO, 2015).

While barcodes are the standard to trace goods, new technologies such as blockchain (in concordance with barcodes/sensors/RFID tags to link the physical identity to a digital identity) have been brought forward as the way to increase transparency, security and the optimization of the supply chain (Bateman, 2015; Provenance, 2015). The advantage of the blockchain lies in the low cost of creating a "block" allowing every step of the supply chain



to be recorded. At the same time every "block" is collectively verified and then added to the chain of blocks in a precise and decentralized manner, creating less room for fraud (Bateman, 2015). The blockchain technology opens up the possibility that all actors (including regulators and consumers) can access selectively the chain of blocks (Provenance, 2015). IBM has launched several pilot projects using blockchain technology, in collaboration with Maersk and Walmart. Several pilot projects have been set up between the port of Rotterdam and other main maritime trade hubs (Lohr and Popper, 2017). Moreover, several start-ups are also developing blockchain technology to enhance the traceability of the supply chain (e.g. Skuchain and Provenance) (Coleman, 2017). Hence, such technological developments allow transparency, security and consumer trust to be mutually reinforced, while still delivering a reduction of trade costs for all involved players.

Traceability is also a key element to ensure food safety. For example the EU has set out "from farm to fork" food traceability requirements to ensure the highest level of food safety. The responsibility lies with producers that need to know at all time their suppliers and to whom they are selling (Banati, 2014). Moreover, traceability is not only a key factor for the well-functioning of the global supply chains but it is also an important tool to prevent fraud. For example a track and tracing system is proposed to counter the illicit trade of tobacco. Unique identifier attached to each package of tobacco should enable track and tracing throughout the whole of the European Union (Draft Implementing act under Article 15(11) of the Tobacco products directive 2014/40/EU).

Therefore, thanks to new technologies, there is greater scope for synergies between business efficiency requirements, greater consumer awareness, and trade policy objectives.

8. Conclusions

Over the last few decades, European consumers benefited a great deal from international trade, thanks to an ambitious EU trade policy. The EU has been pursuing a liberal trade agenda both at multilateral level (as witnessed by the important commitments taken during the Uruguay Round) but also in a bilateral and unilateral context. As a result of all these trade agreements, the EU consumers enjoy currently duty-free access for around 76% of all EU imports.

This paper is the first attempt to map detailed import data into consumer spending categories and estimate the tariff savings that EU trade policy has been offering to European consumers since the Uruguay Round. The paper estimated that the average EU households save annually around 60 billion euros, if the current import consumption would be facing the pre-Uruguay



round tariffs. These annual tariff saving gains have been quite stable over time, since consumption patterns did not change very much in terms of broad COICOP categories in the last few years.

The main products that generate these tariff savings for EU consumers are "Food and Beverages", "Recreation and Culture" products, "Clothing and Footwear" and "Furnishings and household equipment".

As previously indicated, these estimated tariff savings could be seen as the "tip of the iceberg" of the multifaceted nature of consumer benefits from trade. A whole range of other kinds of welfare improvements from international trade for EU consumers are not easily amenable to detailed quantification. However, as previously mentioned the overall gains from trade for the EU society go beyond simple tariff savings and are more sizeable and multifaceted (see for instance recent estimates by Berlingieri et al. 2017, Breinlich et al. 2016, Francois et al. 2007).

Apart from offering a first attempt to breakdown tariff savings by consumption expenditure items of EU households, a more fundamental aim of this paper was to dispel some of the misunderstandings surrounding EU trade policy and its impact on EU consumers. Despite individual consumers benefiting from imported products and services from dusk to dawn, as evidenced from survey data, there is still lack of awareness among EU citizens about the importance of trade in their overall consumption. The simple examples offered above and the growing importance of imports in our daily lives offered, hopefully, a compelling argument that nowadays trade is equally important, if not more, for our society than for our *Homo Sapiens* ancestors.

Moreover, one of the main challenges for trade policy makers nowadays is to show individual consumers that there are tangible benefits of trade for everyone. While there is clear empirical evidence at an aggregate level that trade offer multifaceted consumer benefits, individual consumers cannot clearly see them and often lack information on the origin of imported goods and the lower prices brought about by new trade policy initiatives. Therefore, we conceptualise a new "free trade comes to your shop" idea whereby the visibility of FTA formation and the benefits derived from trade liberalisation could be improved by clearly showing the import duty savings thanks to existing FTAs on the receipts of individual consumers. Apart from increasing the public awareness of FTA benefits, such a scheme could also help empower consumers by giving them more information on the origin of goods they consume. Existing and new technologies (e.g. supply chain logistics, barcodes, blockchain, etc.) could therefore create opportunities to further increase the visibility of consumer benefits from EU trade policy, further enhance the traceability of goods, and provide 500 million Europeans with hard evidence for the consumer gains derived by each of them from EU FTA formation.



9. References

- Amiti, M., Dai, M., Feenstra, R. and Romalis, J. (2017), "How did China's WTO entry benefit U.S. consumers" *NBER working paper 23487*, available at <http://www.nber.org/papers/w23487.pdf>
- Banati, D., (2014) "European perspective of food safety", *Journal of the Science of Food and Agriculture*, available at https://www.researchgate.net/publication/260153952_European_Perspectives_of_Food_Safety
- Bateman, A., (2015), "Tracking the Value of Traceability", *Supply Chain Management Review*, available at http://www.scmr.com/article/tracking_the_value_of_traceability
- Berlingieri, G., Breinlich, H. and Dhingra, S. (2017) The impact of trade agreements on consumer welfare – evidence from the European Union's common external trade policy, *Journal of the European Economic Association* (forthcoming).
- Breinlich, H., Dhingra, S. and Ottaviano, G. (2016) "How have EU's trade agreements impacted consumers", CEP Discussion Paper No. 1417, London.
- Bureau, J-C., Fulponi, L. and Salvatici, L. (2000) Comparing EU and US trade liberalisation under the Uruguay Round Agreement on Agriculture, *European Review of Agricultural Economics* 27(3): 259-280.
- Coleman, L. (2017), "Blockchain joins efforts to improve food traceability amid rising waste and safety fears", *CryptoCoinNews*, available at <https://www.cryptocoinsnews.com/blockchain-joins-efforts-improve-food-traceability-amid-rising-waste-safety-fears/>
- De Loecker, J., Goldberg, P. K., Khandelwal, A. K. and Pavcnik, N. (2016), "Process, Mark-ups, and Trade Reform, *Econometrica*, 84:2, pp 445-510
- EAN (2017), "EAN search" available at <https://www.ean-search.org/>
- European Commission (1994) Balance sheet of seven years of negotiations, Memo 94/24, Brussels. Available online at http://europa.eu/rapid/press-release_MEMO-94-24_en.htm
- European Commission (2010), "International Trade Report", Eurobarometer, available at http://ec.europa.eu/commfrontoffice/publicopinion/archives/ebs/ebs_357_en.pdf
- European Commission (2015), "Trade for all: Towards a more responsible trade and investment policy", available at http://trade.ec.europa.eu/doclib/docs/2015/october/tradoc_153846.pdf
- Evenett, S. and Fritz, J. (2017) *Europe Fettered: The impact of crisis-era trade distortions on exports from the European Union*, CEPR Press, London.



Fajgelbaum, P., Khandelwal, A. (2016), "Measuring the unequal gains from trade", *The Quarterly Journal of Economics*, 131

Francois, J., Manchin, M., Norberg, H. and Spinanger, D. (2007), "Impacts of textiles and clothing sectors liberalisation on prices", The Kiel Institute for the World Economy. Report for the European Commission – Directorate-General for Trade, Brussels.

Gartry, L. (2015), "New barcode app to reveal country-of-origin of supermarket produce" available at <http://www.abc.net.au/news/2015-03-16/barcode-app-to-reveal-country-of-origin-supermarket-produce/6323552>

Gee, H. (1996) How humans behaved before they behaved like humans. *London Review of Books*, October, 36–38.

Goldberg, P. K., Khandelwal, A. K., Pavcnik, N. and Topalova, P. (2010), "Imported Intermediate Inputs and Domestic Product Growth: Evidence from India", *The Quarterly Journal of Economics*, 125:4, pp 1727-1767

GS1 (2017), "GS1 Strategy", available at <https://www.gs1.org/1/strategy/>

Horan, R.D., Bulte, E., Shogren, J. F. (2005) How trade saved humanity from biological exclusion: an economic theory of Neanderthal extinction, *Journal of Economic Behavior and Organization* 58: 1–29.

Hummels, D. and Skiba, A. (2004) "Shipping the Good Apples Out? An Empirical Confirmation of the Alchian-Allen Conjecture", *Journal of Political Economy*, 112:6, pp 1384-1402

Kumar, V., Hallqvist, C. and Ekwall D., (2017), "Developing a Framework for Traceability Implementation in the Textile Supply Chain", *Systems*, 5:2, available at <http://www.mdpi.com/2079-8954/5/2/33>

Lohr, S. and Popper, N., (2017) "Blockchain: A better way to track pork chops, bons, bad peanut butter?", *The New York Times*, March 4, available at <https://www.nytimes.com/2017/03/04/business/dealbook/blockchain-ibm-bitcoin.html>

Newsome, M. (2016), "Ethiopian coffee farmers full of beans as barcodes promise better business", *The Guardian*, available at <https://www.theguardian.com/global-development/2016/apr/18/ethiopia-coffee-farmers-barcodes-business>

Provenance (2015), "Blockchain: the solution for transparency in product supply chains", available at <https://www.provenance.org/whitepaper>

Reisinger, D. (2017) "iPhone X's Components May Cost Apple Nearly \$600", *Fortune*, 18 September.



Rueda-Cantuche, J. M., Sousa, N. (2016), "EU exports to the world: overview of effects on employment and income", *Chief Economist Note DG TRADE* available at http://trade.ec.europa.eu/doclib/docs/2016/february/tradoc_154244.pdf

Tattersall, I., Delson, E., van Couvering, J. (1988) *Encyclopedia of Human Evolution and Prehistory*, Garland Publishing, New York.

The Economist (2005), "Homo economicus?" available at <http://www.economist.com/node/3839749>

UNCTAD (1968) Resolution 21 (II) - Preferential or free entry of exports of manufactures and semi-manufactures of developing countries to the developed countries, *Proceedings of the United Nations Conference on Trade and Development*, 2nd session, New Delhi, 1 February - 29 March 1968, United Nations: New York.

Woolcock, S. (2011) *European Union trade policy*. The New Palgrave Dictionary of Economics. Palgrave Macmillan, London.

WCO (2015), "WCO launches the new IPM platform" available at <http://www.wcoomd.org/en/media/newsroom/2015/october/wco-launches-the-new-ipm-platform.aspx>

WTO (2013), "World Trade Report 2013 Factors shaping the future of world trade" available at https://www.wto.org/english/res_e/booksp_e/wtr13-0_e.pdf

WTO (2017) Understanding the WTO Agreements – Agriculture: fairer markets for farmers. Available online at: https://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm3_e.htm. Accessed in December 2017.



Appendix 1. Statistical classifications

Harmonised System (HS): EU import data is classified by a nomenclature governed by the convention on the harmonized commodity description and coding system, commonly known as the Harmonised System (HS) nomenclature. The HS nomenclature comprises about 5000 commodity groups which are identified by a 6-digit code and arranged according to a legal and logical structure based on fixed rules (for more information see https://ec.europa.eu/taxation_customs/business/calculation-customs-duties/what-is-common-customs-tariff/harmonized-system-general-information_en).

Consumption According to Purpose (COICOP): The household final consumption expenditure is typically a large aggregate covering a wide range of goods and services. The United Nations Statistics Division developed a classification to analyse individual consumption expenditures incurred by households, non-profit institutions serving households and general government according to their purpose (COICOP). COICOP is a classification which includes categories such as clothing and footwear, housing, water, electricity, and gas and other fuels (see [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Classification_of_individual_consumption_by_purpose_\(COI_COP\)](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Classification_of_individual_consumption_by_purpose_(COI_COP)) , <https://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=5> and <http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf> for more information).

RAMON is a publicly available data base maintained by DG EUROSTAT providing also a set of correspondence tables between different nomenclatures which can be accessed at http://ec.europa.eu/eurostat/ramon/relations/index.cfm?TargetUrl=LST_REL .

Statistical Classification of Products by Activity (CPA) - Product categories of the statistical classification of products by activity (CPA) is related to activities as defined by the statistical classification of economic activities in the European Community (NACE). More information about the CPA can be found at [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_products_by_activity_\(CPA\)](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_products_by_activity_(CPA)) and references therein.