

REASSESSING MARSHALL'S PRODUCERS' SURPLUS: A CASE FOR PROTECTIONISM

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Abstract

The rationale for liberal economic policies refers inter alia to the so-called producer and consumer surpluses, namely welfare concepts which were proposed by Alfred Marshall in his seminal work *Principles of Economics*, first published in 1890. In the case of trade policy, relying on surpluses and referring to the 'small country case', it is recommended to remove tariffs barriers imposed on the imports of commodities because it should increase welfare and, in theory at least, the losers of such a trade policy orientation can be compensated with the use of adequate transfers from winners.

Despite extensive use, the concepts of surpluses still raise key-questions that may alter the case for free trade. Thus, from a purely semantic perspective, the concept of producer, as presented in Marshall's work, seems to be broader than what is proposed in the dominant economic discourse; in other words, workers should (also) be seen as producers.

Assuming the workers are considered as producers, at least their wage rents should be taken into account when discussing the impacts of trade liberalization, and added to profit losses – as a result, the case for free trade weakens considerably, it could even vanish.

Introduction

Trade liberalization remains a high priority on the agenda of most Western leaders, especially in the EU. Such a strategic policy option is supported by negotiations taking place at different levels: bilaterally, i.e. between countries, in the context of regional economic integration agreements, and within the framework of the World Trade Organization. Overall, considering figures, more than 500 free trade agreements have been notified to GATT/WTO and most of them are being implemented.

The rationale for liberal economic policies refers inter alia to the so-called producer and consumer surpluses, namely welfare concepts which were proposed by Alfred Marshall in his seminal work *Principles of Economics*, first published in 1890. Thus, in the case of trade policy, relying on surpluses and referring to the 'small country case', it is recommended to remove tariffs barriers imposed on the imports of commodities because it should increase welfare and, in theory at least, the losers of such a trade policy orientation can be compensated with the use of adequate transfers from winners.

Despite extensive use, the concepts of surpluses still raise key-questions that may alter the case for free trade:

- (i) In his *Principles*, Marshall draws the line between two supply curves, one for output expansion and one for output contraction, with two different elasticities; such a distinction is not taken into account when discussing the welfare impacts on producers of trade liberalization; referring to them would reduce the benefits of free trade.
- (ii) From a purely semantic perspective, the concept of producer, as presented in Marshall's work, seems to be broader than what is proposed in the dominant economic discourse; in other words, workers should be seen as producers.
- (iii) Assuming workers are fully considered as producers, at least their wage rents should also be taken into account when discussing the impacts of trade liberalization.
- (iv) Considering the unemployed, wage losses may not fully reflect the decline of welfare created *inter alia* by the loss of jobs, which means that the welfare consequences of liberalization may go beyond the loss of income and rents.

These issues are presented and discussed in this note.

In particular, following a short overview of existing free trade agreements and ongoing trade negotiations (section 1), the traditional case for trade liberalization is presented in section 2. The importance of the traditional case is underlined, referring to WITS (World Integrated Trade Solutions) – a trade liberalization simulation tool proposed on the website of the World Bank (section 3). The two Marshallian supply curves are considered, as well as their implication for the assessment of the welfare impacts of trade liberalization (section 4). Following the work of Marshall, the workers, fully recognized as producers, with their wages and corresponding surpluses, must be added to the welfare analytical framework (section 5). To some extent, combining profits and wages losses means that value-added changes are taken into account; such a new perspective, more in line with Marshall's theory, leads to new conclusions about the welfare impacts of trade liberalization – eventually, it would not provide strong arguments for trade liberalization and could even support protectionism (section 6). Referring to value-added to assess the welfare costs of trade liberalization can be related to Corden's concept of effective protection (Section 7).

Evidence about the dynamic of wages and the cost of unemployment, for the unemployed, in leading economies, is provided in sections 8 and 9, respectively. Reported facts underline the need to move welfare analysis beyond the traditional surpluses and rents when discussing the impact of free trade agreements and, subsequently, consider a paradigm that would include, for instance, Sen's capabilities (section 10).

All graphs, figures and tables are presented in the Annex.

1. Free trade agreements in the global economy

FTAs are nothing new. One of the first well-known FTA is the so-called ‘Cobden-Chevalier Treaty’ which was concluded between the UK and France in 1860 – it was initiated by Cobden to consolidate peaceful relations between the two former belligerents and, as a result, remove the threat of a French invasion of UK. Considering regional trade agreements, the German 1834 *Zollverein* (customs union) is the traditional historical reference; it was also perceived as a major step toward the 1871 German unification and, moreover, it is often associated with the academic work of the German-American economist Friedrich List (1789-1846), who advocated protectionism to support the development of ‘infant industries’ – by adopting such a policy, Germany could become one of the leading industrial powers before WWI, alongside the UK and the US.

Considering the post-WWII period, overall, 124 FTAs have been notified to GATT between 1948 and 1995. Since the creation of the WTO in 1995, more than 400 agreements have been added.

More recently, efforts are being made to merge progressively bilateral FTAs and replace them by regional trade agreements. Such important moves include negotiations for a Trans-Pacific Partnership (TPP) Agreement between ASEAN countries and six other WTO members, and the decision to achieve the African Tripartite Agreement between three regions (COMESA, EAC and SADC).

FTAs first concentrated on trade in goods, in particular non-agricultural ones. Following the creation of WTO with the conclusion of the Uruguay Round, trade in services and non-tariff barriers (which include *inter alia* technical standards, sanitary and phytosanitary measures, customs procedures and formalities, and international payments regulations) are now being addressed. For NTBs, there are also attempts to measure tariff-equivalents with CGEMs (Computable General Equilibrium Models).

In other words, the number and the coverage of FTAs have increased during the last two-three decades – as a result, the average rate of protection for the world is presently very low (see graph 1 in the Annex).

2. Trade liberalization and welfare: the dominant paradigm

In addition to Ricardo’s law of comparative advantage, several frameworks have been proposed to justify free trade. In that respect, one of the most popular tools for the study of the economic,

trade and welfare impacts of trade liberalization is based on ‘partial equilibrium comparative statics analysis’. The partial equilibrium perspective considers only the effects of a given policy action – e.g. the removal of an import duty – in the market directly affected. It does not take into account the interactions between the various markets in a given economy. One of the advantages of such an approach is that it mainly refers to the concept of rent or surplus, in monetary terms, for both producers and consumers. In addition, this approach avoids an aggregation bias corresponding to situations where tariff removal would create nonexistent welfare benefits because of not taking into account the conditions related to single products (For more details, see Amjadi and al., 2011).

Referring to figure 1, presenting the small country case, seen as a price-taker on world markets, the removal of a tariff T imposed on an imported good lower its price on the domestic market from $(P_w + T)$ to P_w . As a result of tariff removal, domestic production falls from Q_2 to Q_1 and consumption increases from Q_3 to Q_4 . In terms of welfare, the so-called producers lose profits or area (1), because of the lower price and reduced sales. The state loses all its revenue measured by the area (3). Consumers or buyers gain [(1) + (2) + (3) + (4)]. In total, there is a net welfare gain for the small importing country equals to the sum of the traditional welfare triangles (2) and (4) – it is a positive value. Thus, the outcome of the proposed standard analysis justifies the removal of the import duty or the full and unequivocal adoption of free trade.

3. WITS and the free trade bias

Relying on the traditional welfare paradigm, as presented in the previous section, WITS is an on-line tool developed jointly by four organizations, namely: UNCTAD, UNSO, WTO and the World Bank. It can be used free-of-charge for estimating *ex ante* impacts of the removal of import duties. These impacts relate to trade diversion and creation, price, tariff revenue, consumer surplus and welfare changes.

Surprisingly, WITS says little or virtually nothing about domestic supply conditions. The exclusion of producers could reflect a pro-free trade bias and express the liberalization agenda of the organizations involved in the development of WITS – this seems obvious for WTO and the World Bank.

Also, a World Bank document on import price elasticities, that could be connected with WITS, does raise questions: the reference model or equation that is used for the calculation of elasticities is the same for all goods, countries and years, which may represent an oversimplification, not taking into account specific features (Kee and al., 2004); furthermore, a graph displaying the import demand elasticities versus the logarithms of the GDP shows the US

with a GDP that is lower than the Chinese and Indian ones, which is odd indeed (See graph 2, in the Annex).

4. Non unique supply curves and producer's loss of welfare

Figure 2, reflecting Marshall's views, as they are presented in the Appendix H of the *Principles*, and limited to the domestic supply side, shows two supply curves. S1 does correspond to output expansion, created by a price increase. S2 is the supply curve corresponding to a price decline, following for instance the removal of an import duty – it has a smaller price-elasticity than S1. Such a difference between elasticities can be explained by the fact that the economies that were associated with organizing higher output levels are not totally lost when output levels contract because of the fall in price paid to the producers, etc.

The welfare implication of such a distinction between the two supply curves is straightforward: with S2, the loss of welfare corresponds to [(1) + (1')], which is larger than (1). In other words, by introducing S2, the costs of trade liberalization for the producers is larger than the traditional one, as reported in figure 1. It also means that the case for trade liberalization is somehow softened. However, when adding the demand side and the state; in terms of welfare, the overall impact remains positive, which (still) supports a liberal orientation for the trade policy regime.

5. The workers seen as producers and their surpluses

Considering producers per se, in his *Principles of Economics*, Marshall mentions both 'producers' and the workers, who are seen as: (i) direct producers, with their wages, and (ii) indirect producers, or owners of capital.

"While national income or dividend is completely absorbed in remunerating the owner of each agent of production at its marginal rate, it yet generally yields him a surplus which has two distinct, though not independent sides. It yields to him, as consumer, a surplus consisting of the excess of the total utility to him of the commodity over the real value to him of what he paid for it..."

Another side of the surplus which a man derives from his surroundings is better seen when he is regarded as producer, whether by direct labor, or by the accumulated, that is acquired and saved, material resources in his possession.

As a worker, he derives a worker's surplus, through being remunerated for all his work at the same rate as for that last part, which he is only just willing to render for its reward; though much of the work may have given him positive pleasure.

As capitalist (or ... as owner of accumulated wealth in any form) he derives a saver's surplus through being remunerated for all his saving..."

Source: A. Marshall, *Principles of Economics*, Appendix K, "Certain Kind of Surplus", Macmillan, 8th ed., 1920.

In other words, *stricto sensu*, workers' surpluses would first correspond to pleasure given by work and their remuneration. Overall, and despite some semantic 'vagueness', when considering Marshall's work, wages should include a category of surplus reflecting the importance of workers as producers – what they are in fact.

6. Adding all surpluses and the case for protectionism

Wages are now added to profit when analyzing the welfare impacts of the removal of import duties. In other words, the wage element must be removed from the supply curve S and what remain are the industry marginal costs – or IMC in figure 1 – related to various inputs, not the factors of production, which does not prevent suppliers from continuing their quest for a maximum profit along the supply curve S (for the sake of simplicity, there are no separate supply curves, as presented in section 4).

Again, the full elimination of the import duty affects firms' profits, state revenues and consumers' welfare – the sum of all impacts corresponds to the traditional welfare triangles, (2) and (4) in figure 1.

Referring to workers, the loss of wages corresponds to the difference between the supply curve and the industry marginal cost curve IMC related to the use of inputs. Thus, the wage change caused by the reduction of production from Q2 to Q1 corresponds to [(2) + (5)], a result which raises questions:

- What is the corresponding loss of welfare?
- Should 'all-of-wages' taken into account or just corresponding rents, referring to labor supply conditions?

There is no straight answer to these questions.

Considering wage rents, *a priori* no one knows where the workers affected by liberalization come from, i.e. to what segments of the labor supply they can be associated with, and what are the corresponding rents. However, it can be assumed that these rents are positive values, which means that the workers' rent-based loss of welfare represents a non-nil fraction of [(2)+(5)]; more formally, the workers' loss of welfare equals: $\{ \alpha [(2) + (5)] \}$, with ' $0 < \alpha < 1$ '.

When adding wage rents, the total welfare change caused by the elimination of an import duty is: $\{(2) + (4) - \alpha [(2) + (5)]\}$, which can be positive, nil or negative, depending on the actual value of α , an unknown parameter. If all 'all-of-wages' could be seen as rents (in which case $\alpha = 1$ – an extreme and 'absurd' case, perhaps), the total welfare change would correspond to $[(4)-(5)]$,

with a corresponding cost for producers that is equal to the value-added change. In other words, the (lower) higher is α , the (higher) lower is the case for free trade.

Moreover, workers could also lose their jobs and stay unemployed for long periods of time, and for some of them, without unemployment benefits. Such desperate situations, which go far beyond ‘partial equilibrium comparative statics analysis’, imply that welfare losses could be much larger than wage rents, and for some workers they could correspond to ‘all-of-wages’, even more, etc.

To be conclusive, by adding wage rents and the (un)employment status of the workers to the welfare analysis of the impacts of trade liberalization, the case for free trade weakens considerably; there could eventually be a relevant argument for protectionism. In fact, there seems to be no ‘magic’ algebraic formula or combination of ‘pleasant’ geometric shapes (triangles and/or more complex ones) to capture the final welfare change and allow for a firm and final decision about the orientation of the trade policy regime.

7. Linkages with effective protection

To some extent, referring to value-added to assess the welfare costs of trade liberalization can be related to the concept of effective protection. Thus, as proposed by Corden in 1966, trade policy theory makes an important distinction between nominal and effective protections, and their corresponding rates. Corden (2005) also mentions an article written by Clarence Barber (1955), a Canadian economist, in which the expressions ‘effective protection’ and ‘effective level of protection’ were apparently used for the first time.

The nominal rate of protection (NRP) for a given industry is the relative increase in price caused by the imposition of an import tariff. The corresponding effective rate of protection (ERP) is the relative increase of domestic incomes (mainly wages and profits), or value-added, caused by the protective measure. In quantitative terms, NRP and ERP normally correspond to different measures; ERP is generally higher than NRP. The concept of effective protection could have led to a corresponding measure of welfare, relying on value-added. In that respect, it is worth observing that Corden spent time doing research at LSE, one of the bastions of ‘Welfarism’ (Sen’s expression; see hereafter).

8. Recent evidence about wages

The relationship between trade and wages is a complex one. It seems that past studies are not fully conclusive. In this section, we report recent evidence about wages dynamic in developed countries. Trends are definitely worrying and, to some extent, they can be related to the ongoing globalization process. Also, considering the evidence for the US and other advanced

countries, for the first time after WWII, the younger generations might be confronted with declining living standards in the long run. In addition, in most Western countries, there are also increasing inequalities, which undermines social consensus and stimulates the rise of populism and xenophobia.

After WWII, real wages in US manufacturing grew in line with productivity for about three decades, including the ‘golden sixties’. After the first oil shock in 1973, wages dynamic started being disconnected from productivity growth. Thus, according to Bivens and Mishel (2015), net productivity grew by 1.33% percent each year between 1973 and 2014, which is significantly above the annual low 0.20% change for the median hourly compensation (see table 1 for more details).

The large discrepancy between most wages and productivity corresponds to growing inequalities among workers and between social classes – with a large share of productivity gains going straight “in the pockets of extraordinarily highly paid managers and owners of capital” (Bivens and Mishel, 2015, p. 23), which could reflect a dramatic shift of bargaining power between workers and their representatives, namely the trade unions, and the ruling elites, and institutional changes on labor markets.

In addition, linkages are made with international trade and the new global economy to explain wage dynamics and inequalities. In the 1960s, US manufacturing was first confronted with growing competition from Japan and European economies. For the more recent years, the rise of China as a major producer and key-exporter, and the threat of offshoring production are perceived as factors to explain the significant decline of manufacturing and the pressuring of wages in the US (Levy and Kochan, 2012). Considering services, progress with computers, telecoms, and data gathering and processing, also allows profitable offshoring investments and operations in low wages countries such as, for instance, India.

A similar phenomenon is observed in Germany, the leading and largest economy in the EU. Despite higher education levels, German employees are confronted with stagnant or declining wages since the 1990s. As a result, the share of wages in national income reached a ‘historical low’ in 2007 and 2008, with 61% (Brenke, 2009). Furthermore, for the most recent years, favorable labor market conditions, with a comparatively low unemployment rate in the EU context, do not help improve workers earnings (DIW Berlin, 2015).

In Japan, for both men and women, real wages increased during the 1990s. During the 2000s, real wage started declining, especially for the ‘middle wage workers’ (Yokoyama and al., 2016). UK displays similar features (Bell, 2015), etc.

As mentioned, the reported changes and tendencies can be attributed to several factors, in particular the opening of national economies, with the lowering of trade barriers, for both goods and services. After years of negotiation, China became also a WTO member in 2001, which means it benefits from the Most-Favorable-Nation (MFN) status in terms of market access and national treatment, contributing to more competition in the global economy and the subsequent decline of Western industries. Moreover, China is involved in trade disputes against Western countries, rendering much more difficult the protection of companies and workers in these countries. Such hard facts underline that the social implications of trade liberalization can hardly be predicted with the traditional welfare approach relying on Marshallian triangles only and require a broader paradigm to be more conclusive about the linkages between trade and the well-being of people.

9. The high costs of unemployment

In addition to flat real incomes, some countries are enduring high levels of unemployment, which can also be related to trade and may correspond to high costs, especially for the unemployed.

Assessing the welfare costs of unemployment is a difficult exercise, which must take into account various factors such as the actual loss of income and the worsening of self-esteem, other psychological dimensions, health conditions, and in some cases the voluntary termination of life – or suicide.

Relying on Milton Friedman's permanent income hypothesis and data provided by the German Socio-Economic Panel on the former territories of East Germany over the period 1992-2005, Knabe and Räetzel (2007) conclude that the non-pecuniary costs of unemployment can amount to 2.3 times the loss of income.

Considering mental health per se, several studies underline the negative impact of unemployment on the psychological balance of the unemployed, especially in the 30 to 50 or 55 age range. Males are also seen as more vulnerable than females (IWH, 2009). Unemployment may lead to schizophrenia and hospitalization. The impact of unemployment on physical health is another field of investigation; there is an interface between mental health and the physical one – with unemployment, stress increases considerably and poor diets prevail, contributing inter alia to heart diseases; moreover, being unemployed may delay the use of health cares because of pecuniary considerations and lead to risk-taking behaviors. The unemployed may also end up living in the street, just become homeless, and lose any positive status in the society. Such living conditions may imply that the unemployed is not anymore part of the labor force, there could be no more job search activity and survival depends on the generosity of others, life expectancy is also shortened (NCH, 2007).

The worst possible cost of unemployment, related to marginalization and extreme despair, is suicide:

"In June 2009, Christelle Pardo, pregnant and with her five month old baby in her arms, jumped to her death from the balcony of her sister's flat in Hackney.

Her Jobseeker's Allowance had been stopped because of her pregnancy and this meant that she also lost her Housing Benefit: the local authority was demanding that she return £200 in overpaid HB. She had been turned down for other benefits – her appeals had been turned down twice; her last call (for help) ... was made just the day before her suicide."

Source: TUC, "The Costs of Unemployment", 2010, page 1.

With adequate support, the Christelle Pardo case could have ended differently – her poor fate is not an exception also. Quantitative studies do show that, on average, one in five suicides is associated with unemployment (University of Zurich, 2015). In Japan, recession led to a sharp increase in the total number of suicides, about 30,000 in excess for more than ten years after 1998. These changes are supported by regression analysis; thus, referring to two models (see table 2), when unemployment increases, the number of suicides increases; the correlation coefficient is also interpreted (by the authors of the study) as quite 'high' for model 1, however it is low for model 2, which adds the number bankruptcies as explanatory variables – the low significance of the correlation coefficient for model 2 is explained by the strong correlation (or multicollinearity) between the two explanatory variables in model 2 (Chen and al., 2012, page 85).

Since 2008, Greece is confronted with a sharp economic and financial crisis and 40% of the households have at least one member who is unemployed; moreover, youth unemployment overtakes 60%. Here also, the impact of socio-economic conditions on suicide is significant; in addition, the use of antidepressants, divorces and HIV cases are increasing (Madianos and al., 2015).

The welfare costs of unemployment can reach very high levels indeed, especially for unemployed people, and their relatives and families. The consideration of health and life (or death) factors underlines the need to add new dimensions beyond the traditional welfare triangles, wages and their rents, when analyzing the consequence of trade policies.

10. Moving welfare analysis beyond rents

Considering issues like mental and physical health, homelessness, and life expectancy, including the voluntary termination of life – or suicide – because of despair, seems to correspond to paradigms developed, among others, by Sen, Rawls and Nozick. According to

Sen, it is even most surprising that welfare economics has been unable to integrate such dimensions that are very common for development economics:

"One of the extraordinary features of standard welfare economics has been the neglect of information about health, morbidity and longevity. Though these variables have often been taken seriously in the development literature ..., they have typically been ignored in welfare-economic treatises."

Source: Sen, as quoted by Atkinson, 'The Contributions of Amartya Sen to Welfare Economics', 1998, page 8.

Sen proposes an approach based on capabilities to go beyond what he calls 'welfarism' – capabilities refer to the scope of the choice an individual has to function normally. They also relate to the possibility a person has to achieve his/her potential, his/her 'dreams' perhaps. After being turned down for social benefits, it seems that Mrs. Pardo was not anymore in a position to live normally.

Rawls focuses on the worst positions in the society, which should determine public choice – a 'max-min perspective'. Such extreme positions relate first to the access to primary goods, defined as "things that every rational man is presumed to want" (Atkinson, 1998, page 8). Again, Mrs. Pardo and her little child seemed to be in one of the worst possible situations.

Nozick's perspective is different. He considers the way income distribution has been "brought about" (Atkinson, 1998, page 8) – to what extent it is legitimate. Such an approach may help clarify the evolution of income distribution in many countries over the last two or three decades; in that respect, the growing discrepancy between productivity and wages, with fast growing bonuses for the 'principals' (owners) and their 'agents' (managers), is worth analyzing – in addition to growing pressures from trade.

These paradigms may definitely suggest new approaches to analyze the full (or most) impacts of trade liberalization policies, moving above or beyond the traditional welfare triangles and wage losses. It implies that social sciences must merge their views when studying the consequences of policy choice on the life of individuals and connections within societies. Such a vision requires a certain emphasis on altruistic thinking and values – for complementing the egoistic perspectives found in conventional economics textbooks.

Final remarks

- I) Marshall's traditional welfare triangles are widely used in academia and economic policy circles to justify the removal of trade barriers.

- II) Referring to a new reading of the *Principles*, the traditional interpretation of Marshall's work is questionable.
- III) Considering Marshall's seminal work, there is a distinction between two supply curves, one for output expansion, and one for output contraction; as the removal of an import duty would normally lead to a lower price on the domestic market of a traded commodity, the output contraction curve should be used for assessing welfare changes, which implies a higher loss of surplus for producers (namely the firms) and, as a result, weakens the standard case for free trade.
- IV) Workers are not taken into account in the traditional welfare analysis, which refers only to firms, consumers and the state.
- V) A candid reading of Marshall's work helps identify workers as producers also, with their own surplus or rents.
- VI) When adding workers and their surpluses to the traditional welfare analysis, the case for free trade may vanish because the welfare impact of the removal of an import duty could be negative – an impossible outcome with the traditional welfare triangles.
- VII) Even if the wage-related rent is unknown, for most workers, it can be assumed that losing a job and being unemployed has welfare consequences. For instance, in the case of long term unemployment and assuming there is no unemployment benefit, the loss of welfare should perhaps be measured by at least the loss of income.
- VIII) The last argument would imply that welfare analysis should move beyond rents and explicitly take into account, for instance, Sen's capabilities related to incomes and wealth. According to Sen, such a move overtakes the so-called traditional 'welfarism'.
- IX) Considering the evidence, for the US, Germany and Japan at least, wages have – at most – remained flat for decades, a phenomenon that may have been partly induced by the further opening of their economies. In some countries, unemployment can also reach high level, which may also be related to trade and has tremendous welfare implications.
- X) All in all, Marshall's concepts should definitely be reconsidered to better assess the welfare consequences of economic policies, in particular existing and future trade agreements, at all levels – bilateral, regional and multilateral, within WTO. Such deals have lasting consequences and given the WTO framework and international public law, they can hardly be challenged. Furthermore, as policy-related welfare analyses should move beyond rents, it implies "breaking the wall" between social sciences, combining at least economics, sociology (with a reference to social classes) and psychology (for mental health and behavioral issues). In that respect, the European Commission *Handbook for trade sustainability impact assessment* could be seen as a very positive step toward more comprehensive and balanced analyses of free trade agreements. However, as indicated by the conditions of the TTIP negotiations between the EU and the US, the real challenge seems to be the effective use of such a relevant document (Giegold, 2015).

*A preliminary version of this document was commented by Eithne Murphy (Department of Economics, National University of Ireland, Galway) and Neil Hart (Australia). See:
http://etdiscussion.worldeconomicsassociation.org/?wea_paper=marshall-producers-surplus-and-value-added-a-case-for-protectionism-a-short-note*

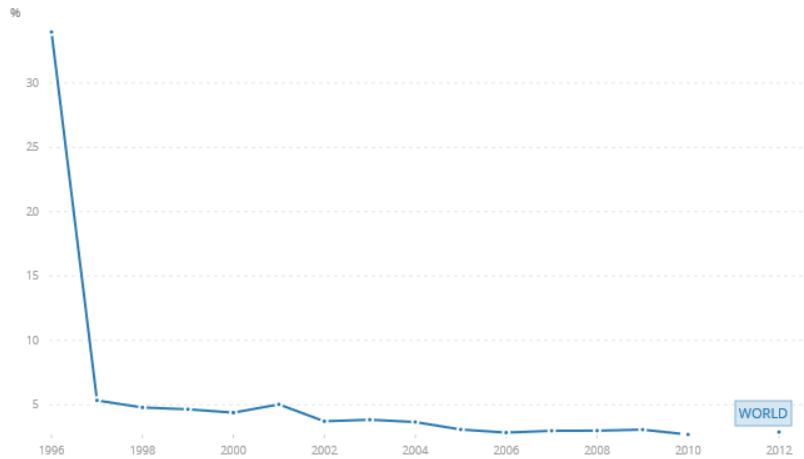
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Annex: Graphs, Figures and Tables

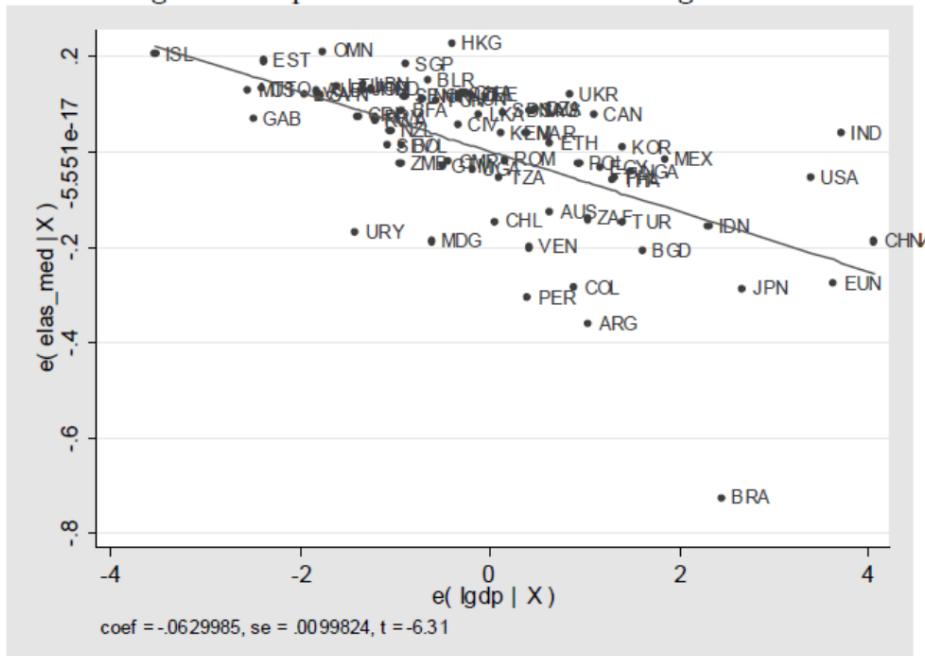
Graph 1: Average nominal rate of protection for the world



Source: World Integrated Trade Solution – WITS. The World Bank website.

Graph 2

Figure 3: Import Demand Elastities vs Log of GDP



Source: H. L. Kee and al. (2004), page 21.

Figure 1: Welfare impact of trade liberalization – the traditional producer surplus versus value-added

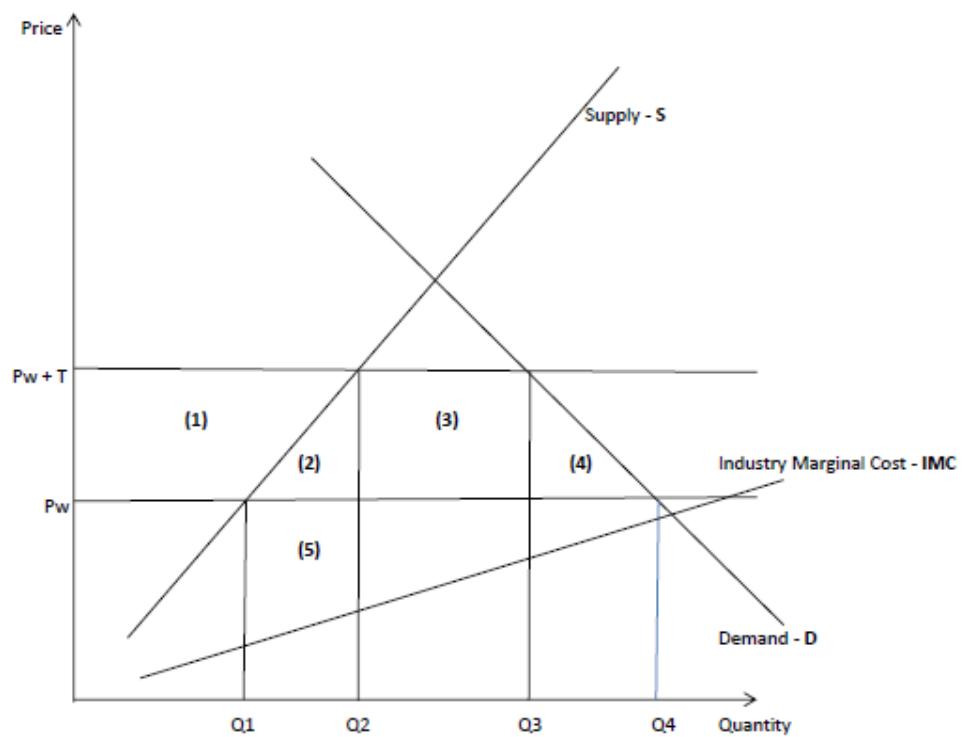


Figure 2: Marshall' supply curves

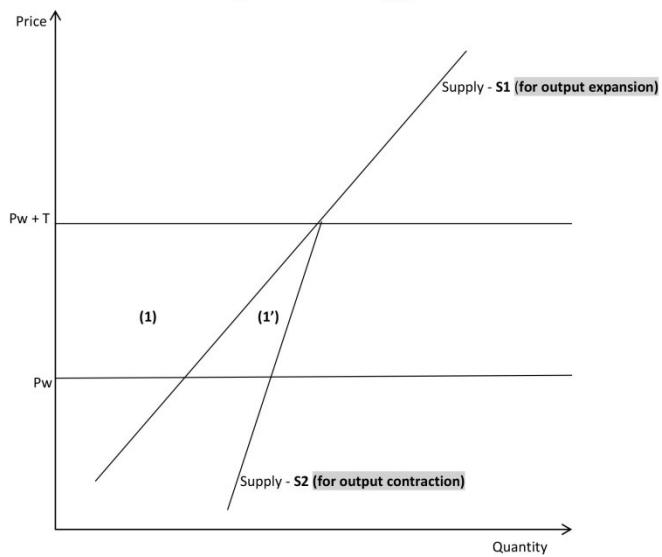


Table 1: Median hourly compensation and productivity growth in the US, 1973–2014
 (Yearly change, %)

Reference variables	1973–2014	2000–2014	2007–2014
<i>Median hourly wage</i>	0.09	0.03	-0.30
<i>Median hourly compensation</i>	0.20	0.13	-0.30
<i>Net productivity</i>	1.33	1.41	0.91
<i>Net productivity–median compensation gap</i>	1.13	1.28	1.22

Source: J. Bivens and L. Mishel (2015), page 8.

Table 2: Regression analysis – suicides and unemployment rates in Japan using quarterly panel data

Dependent variable: Number of male suicide victims per 1000		
Reference period: 1991 QI-2005 QII		
Variables	Model 1	Model 2
<i>Unemployment rate</i>	0.424*** (0.106)	0.354*** (0.106)
<i>Number of bankruptcies</i>	--	0.072 (0.023)
<i>Constant</i>	0.012*** (0.004)	0.008** (0.004)
<i>Number of observations</i>	376	376
<i>R-squared</i>	0.083	0.111
Notes:		
<ul style="list-style-type: none"> - Between parentheses, standard errors; - *** (**) means 1% (5%) significance level. 		

Source: J. Chen and al. (2012), page 85.