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# INSIGHTS FROM THE 19TH CENTURY WAVE OF BILATERAL TRADE AGREEMENTS FOR THE WTO ERA

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*The world trading system is now dual. Preferential (i.e., discriminatory) trade agreements (PTAs) coexist with the non-discriminatory GATT-WTO system. PTAs have proliferated since the mid-1980s and most observers believe that they are here to stay. However, history shows that two previous waves of PTAs receded. This article investigates the reasons for the end of trade liberalization during the first wave of preferential agreements in the 19th century, in order to get insights for the current world trading system. It argues that there are strong similarities in the factors that triggered the proliferation of preferential agreements in the 19th century and at the end of the 20th century. In the absence of an international organization like the WTO, the network of bilateral trade agreements containing the Most Favoured Nation (MFN) clause formed the backbone of the international trade architecture. For this reason and also because bilateral trade agreements can serve the goal of trade liberalization as much as the implementation of a protectionist policy, the network of bilateral agreements did not collapse with the global shift towards greater protectionism at the end of the 19th century. Instead, akin to the WTO today, not only did this architecture accommodate protectionist pressures during an economic crisis, but it also constrained them. In ensuring a safety net and respect for basic rules, the WTO is thus essential for the sustainability of the PTAs.*

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> *In the late 19th century, a network of treaties containing the most favoured nation (MFN) clause spurred major tariff reduction in Europe and around the world. These treaties ushered in a harmonious period of multilateral free trade that compares favourably with – and in certain respects was even superior to – the current GATT era.*
>
> *Douglas Irwin*[1]

To many observers, the WTO is in crisis. It has been successful in preventing a significant increase in protectionism in response to the economic and fiscal crisis that followed the financial crisis of 2007. It was also successful in preserving the relevance of both the existing rules and its dispute settlement system.[2] However, notwithstanding these successes and the limited Bali Agreement of December

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[1] Douglas Irwin, *Multilateral and Bilateral Trade Policies in the World Trading System: An Historical Perspective*, *in* JAIME DE MELO & ARVIND PANAGARIYA, NEW DIMENSIONS IN REGIONAL INTEGRATION 90-119 (1993) [hereinafter IRWIN].

[2] Patrick Messerlin, *The World Trade Regime, the WTO and Large Scale Crises: Perspectives after the Pittsburg G20 Summit* 22 (Groupe d'Economie Mondiale, Policy Brief, 2009) [hereinafter MESSERLIN, *The World Trade Regime*].

2013, the WTO failed at one of its core functions: facilitating multilateral negotiations to liberalize trade. With the Doha Round stalled, liberalization is taking place on a preferential (i.e., discriminatory) basis more than ever.

Such development mimics the outcome of the Uruguay Round when, partly due to the lack in progress in the negotiations, the United States turned to bilateral agreements -ushering a proliferation of preferential trade agreements (PTAs) on an unprecedented scale.[3]Since then, the nature of PTAs has evolved. While they used to be bilateral, they are now increasingly encompassing a large number of countries such as the US-engineered Trans-Pacific Partnership (TPP), the EU-engineered Economic Partnership Agreements, or the COMESA-EAC-SADC Tripartite Free Trade Area in Africa to name a few. Moreover, PTAs are not solely focusing on trade policy instruments anymore, but also target behind-the-border issues (i.e., mostly regulatory issues) that have proved difficult to negotiate in the Doha Round.[4]

The massive wave of PTAs triggered an impressive amount of debate and research that was not limited to economics but also attracted much attention from political scientists. After about 30 years of uninterrupted proliferation, most observers believe that PTAs area permanent feature of the international trading system. But are they really? The current wave of PTAs is not unprecedented: it is the third one and the two previous waves eventually receded.[5] It is worth having a fresh look at the rise and fall of previous waves to get an insight on the current development and assess if PTAs have indeed become the new norm.

This article focuses on the 19th century experience, highlighting the first wave of PTAs that was MFN-based and contributed to widespread globalization, in contrast to the second wave of PTA sin the 1930's that was protectionist in nature. Part I of this article describes the network of bilateral trade agreements in the 19th century. Part II compares the 19th century bilateral agreements with today's PTAs and highlights the similarities in the motivations to conclude trade agreements. Part III then turns to the reasons for the end of the trade liberalization. It shows that a network of trade agreements can form the backbone of the international trade architecture but, with no multilaterally agreed rules enforced by an institutional set up like the GATT/WTO, this network can be used for trade liberalization as much

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[3] Jagdish N. Bhagwati, *United States Trade Policy at the Crossroads*, 12(4) WORLD ECON. 439-471 (1989).

[4] To highlight a difference in nature between the 19th century trade agreement and today's, I will describe the 19th century agreements as "bilateral trade agreements" and current agreements as PTAs.

[5] IRWIN, *supra* note 1.

as for implementing protectionist policies. Finally, Part IV concludes by drawing some lessons from the 19th century experience relevant for the current trading system.

## I. A HUB-AND-SPOKE SYSTEM OF BILATERAL MFN PREFERENTIAL AGREEMENTS

> *What an extraordinary episode in economic progress of man that age was which came to an end in August 1914!*
>
> *John Maynard Keynes (1919)*

In 1919, pessimistic and in disagreement with the Treaty of Versailles, John Maynard Keynes published "The Economic Consequences of the Peace." The first chapter of the book, titled "Europe before the war", is filled with nostalgia in relation to the pre-World War I economic globalization.[6]

The backbone of this globalization was a network of bilateral trade agreements. This network was built in a few years, in the aftermath of the Cobden- Chevalier agreement of 1860 between the United Kingdom and France, post which trade agreements proliferated. As rightly observed, "with the Anglo-French treaty the trickle became a flood."[7]

European countries were linked by a dense network of bilateral agreements (Table 1). The network included the Ottoman Empire (present day Turkey), but Russia, Scandinavia, and Portugal were only marginally implicated. Forming a hub-and-spoke system, the network expanded to the rest of the world as illustrated in Figure 1.[8]

In fact, the world was organized around two hubs. Besides the main hub in Europe, there was another minor one -the United States. There was no agreement linking the two hubs and though three Latin American countries (Honduras, Nicaragua, and Venezuela) were the spoke of the two hubs, their commercial importance was too limited to connect them. As far as Asia was concerned, with

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[6] JOHN MAYNARD KEYNES, THE ECONOMIC CONSEQUENCES OF THE PEACE (1919).

[7] Charles P. Kindleberger, *The Rise of Free Trade in Western Europe, 1820-1875*, 35(1) J. ECON. HIST. 20-55 (1975) [hereinafter KINDLEBERGER, *The Rise of Free Trade*]; *see also* IRWIN, *supra* note 1.

[8] *See* Carsten Kowalczyck & Ronald J. Wonnacott, *Hubs and Spokes, and Free Trade in the Americas*, 35 (Cambridge, MA: NBER, Working Paper No. 4198, 1992) for a modern analysis of the impact on trade and foreign direct investment of a hub-and-spoke system.

the exception of Japan, there was no bilateral trade agreement with independent nations, while most of the rest of the world, notably Africa, was indirectly a spoke of the European hub through the colonial system.

**Table 1: Intra-European Agreements signed between1860-1870 (inclusive)**

| | Italy | Austria-Hungary | France | Future Germany | Belgium | Britain | Netherlands | Switzerland | Spain | Ottoman Empire | Russia | Sweden-Norway | Denmark | Liechtenstein | Portugal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Italy | | X | X | X | X | X | X | X | X | X | X | X | X | | |
| Austria-Hungary | X | | X | X | X | X | X | X | X | X | X | | | X | |
| France | X | X | | X | X | X | X | X | X | | | X | | | X |
| Future Germany | X | X | X | | X | X | | X | X | | | | | | |
| Belgium | X | X | X | X | | X | X | | | | | | | | |
| Britain | X | X | X | X | X | | | | | X | | | | | |
| Netherlands | X | X | X | | X | | | X | | X | | | | | |
| Switzerland | X | X | X | X | | | X | | | | | | | | |
| Spain | X | X | X | X | | | | | | | | | | | |
| Turkey | X | X | | | | X | X | | | | | | | | |
| Russia | X | X | | | | | | | | | | | | | |
| Sweden-Norway | X | | X | | | | | | | | | | | | |
| Denmark | X | | | | | | | | | | | | | | |
| Lichtenstein | | X | | | | | | | | | | | | | |
| Portugal | | | X | | | | | | | | | | | | |
| **TOTAL** | 12 | 11 | 10 | 7 | 6 | 6 | 6 | 5 | 4 | 4 | 2 | 2 | 1 | 1 | 1 |

Source: Author's assessment based on Robert Pahre's Trade Agreements Database.[9]
Note: Future Germany consists of any state that will be part of the German empire.

[9] ROBERT PAHRE, POLITICS AND TRADE COOPERATION IN THE NINETEENTH CENTURY 157-176 (2007) [hereinafter PAHRE].

**Figure 1: The Hub and Spoke System of the 1860s**
(Trade Agreements signed between 1860 and 1870 inclusive)


Source: Author's assessment based on Robert Pahre's Trade Agreements Database.[10]

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[10] *Id.*

## II. HOW DO THE 19TH CENTURY PROLIFERATION OF BILATERAL TRADE AGREEMENTS COMPARE TO TODAY'S PROLIFERATION OF PTAS?

For the purpose of the analysis presented in this article, it is important to highlight three important features of the 19th century bilateral trade agreements: (i) unlike present day PTAs, the 19th century bilateral trade agreements contained the MFN clause;(ii) then as now, the fear of being excluded played an important role in the proliferation of agreement; and (iii) unlike today's' bilateral agreements the 19th century trade agreements were not open-ended.

### *A. MFN Clause*

The unconditional MFN treatment was a crucial reason for the proliferation of bilateral agreements in Europe.[11] The unconditional MFN treatment, which is also at the core of the GATT/WTO system, implies that if a party to a trade agreement grants to a third party a more favourable treatment than the one granted to the partner, this treatment is automatically and without condition granted to the partner. Therefore, the unconditional MFN insures each party of the trade agreement against the risks of losing out if new concessions were granted to third parties in the future and is in practice. This is a powerful system that allowed Cunningham to call the MFN principle the "sheet-anchor of Free Trade" in the 19th century.[12]

In other words, the unconditional MFN was a way of multilateralising PTAs. It was a crucial reason for the proliferation of bilateral agreements and de facto turned the European network of agreements into a quasi-multilateral system; albeit a multilateral system without an arbitrator or dispute settlement system. In contrast, today's PTAs do not include the MFN principle, leaving it to be the cornerstone of the WTO system. As a result, PTAs establish diverse and sometimes incompatible rules and make the problem of erosion of preference more severe than it was in the 19th century.[13] In short, the proliferation of today's PTAs tends to fragment the world trading system while the proliferation of bilateral agreements was in the 19th century the basis of a quasi-multilateral liberalization.

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[11] IRWIN, *supra* note 1.
[12] WILLIAM CUNNINGHAM, THE RISE AND DECLINE OF THE FREE TRADE MOVEMENT 168 (1904) [hereinafter CUNNINGHAM].
[13] Jean-Jacques Hallaert, *Proliferation of Preferential Trade Agreements: Quantifying its Welfare Impact and Preference Erosion*, 42(5) J. WORLD TRADE L. 813-836 (2008) [hereinafter HALLAERT, PROLIFERATION].

### *B. Fear of Exclusion*

Even in those days, the use of the MFN clause was not new. In fact, it had been "a common practice of most nations since the beginning of the seventeenth century to insert in their commercial treaties a provision known as the most-favoured-nation clause."[14]In response to why this "common practice" suddenly triggered what had never happened before, i.e. a wave of bilateral trade agreements, I would argue that there were two main reasons.

First, the nature of the agreement was new. Robert Pahre's impressive database on the 19th century trade agreements clearly shows that before the 1860s, agreements had a limited scope.[15] Many were limited to ensure freedom of commerce and navigation.[16]Starting 1860s their scope became much broader as they were liberalising trade.

Second, there was the "fear of being excluded." The Cobden-Chevalier Treaty involved two major powers of the time: France and the United Kingdom. Thus, it sent the message that the rules of the trading system were changing. As a preference given to a partner in a trade agreement is a discrimination against non-partners, other countries feared being put at a comparative disadvantage and face trade diversion. Thus, they had strong incentives to sign an agreement to level the playing field.

This was recognized early and summarized clearly by Ashley's extremely detailed analysis of European commercial policy at the time: "the industrial powers *had no alternative* if they did not wish Great Britain to enjoy marked advantage over them *in the* French market" (Emphasis added).[17]Ashley refers to the fact that as the result of the Treaty, Great Britain would have a competitive advantage in exporting to France but not the reverse. Indeed, under the Treaty, France granted preferential

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[14] Jacob Viner, *The Most-Favored-Nation Clause in American Commercial Treaties*, 32(1) J. POL. ECON. 101-129 (1924).

[15] PAHRE, *supra* note 9.

[16] *See also* PERCY ASHLEY, MODERN TARIFF HISTORY: GERMANY – UNITED STATES – FRANCE 447 (John Murray ed., 1910) [hereinafter ASHLEY]; Olivier Accominotti & Marc Flandreau, *Does Bilateralism Promote Trade? Nineteenth Century Liberalization Revisited* 37 (London: CEPR, Discussion Paper No. 5423, 2006) [hereinafter ACCOMINOTTI & FLANDREAU].

[17] ASHLEY, *supra* note 16; *see also* Irwin, *supra* note 1; David Lazer, *The Free Trade Epidemic of the 1860s and Other Outbreaks of Economic Discrimination*, 51(4) WORLD POL. 447-483 (1999).

access to British exports, while Great Britain extended the improved market access granted to France to all partners.

Thus, the proliferation of bilateral agreements was in large part triggered by the fear of comparative disadvantage and reinforced by the unconditional MFN clause, much to the expectations of both France and the United Kingdom.[18]

France (or to be more accurate, Napoléon III and his advisors who were imputed for the much opposed Cobden-Chevalier Treaty. The treaty had so little support in the country that it was dubbed a *coup d'état douanier* – a custom coup)[19]wanted to stimulate the French industry through increased import competition and lower input costs. These are two important channels that the modern economic literature emphasises to explain the growth impact of trade.[20] The drop in grain prices and in textiles was another of Napoléon III's expected impact of the Cobden-Chevalier Treaty. It was desired to help reduce poverty and to avoid the riots triggered by starvation following poor harvest such as those of the winters of 1853-54 and 1857-58. Napoléon III had clearly understood the impact of trade on growth as well as the role trade can play in what is now called "food security" (open trade helps smoothen the human and political costs of a poor harvest).[21]

Turning to the United Kingdom's motivation, the Cobden-Chevalier Treaty was a reaction to the disappointment with the fact that other countries did not embrace unilateral liberalization as it had. Great Britain efforts at reciprocal tariff reductions had failed in the 1830s and 1840s, just as they had in the 1780s and 1790s.[22] This lack of progress set the stage for unilateral tariff reforms in the 1840s in Britain but few countries followed (the United States, Holland, Switzerland, Portugal and, to a limited extent, France). The global trade liberalization was limited. By extending the treatment granted to France in the Cobden-Chevalier Treaty to all its partners, the United Kingdom made the Treaty a tool of unilateral liberalization and

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[18] Gordon Wright, *The Origins of Napoleon III's Free Trade*, 9(1) ECON. HIST. REV. 64-67 (1938).
[19] *See* ERIC ANCEAU, LA FRANCE DE 1848 À 1870 : ENTRE ORDRE ET MOUVEMENT 256 (2002) [hereinafter ANCEAU]; *see also* KINDLEBERGER, *The Rise of Free Trade*, *supra* note 7.
[20] Jean-Jacques Hallaert, *A History of Empirical Literature on the Relationship between Trade and Growth*, 135 2006/3 MONDES EN DÉVELOPPEMENT 63-77 (2006); Jean-Jacques Hallaert, *Importing Growth: The Crucial Role of Imports in a Trade-Led Growth Strategy*, 49(1) J. WORLD TRADE L. 49-72 (2015).
[21] This is still relevant as pointed in Box 3.4 of the Task Force describing the experience of Bangladesh; *see also* UN MILLENNIUM PROJECT TASK FORCE, TRADE FOR DEVELOPMENT – ACHIEVING THE MILLENNIUM DEVELOPMENT GOALS 333 (2005).
[22] IRWIN, *supra* note 1.

provided incentives to other countries to do the same by fearing her comparative advantage in the French market.

The similarities between the Cobden-Chevalier Treaty and contemporary PTAs are worth being noted. The fear of being excluded has consistently played a very strong role in the proliferation of PTAs. As in the 19th century, it is the hegemonic economic power's disappointment with the lack of progress in trade liberalization that triggered it. When the United States embraced preferential trade agreements in the mid-1980s in reaction to the lack of progress in the Uruguay Round,[23] the fear of being at a comparative disadvantage in the access to its vast market induced many countries, including those (notably in Asia) that had never signed any PTA and were exclusive multilateralists, to negotiate PTAs.

Contemporaneously, the domino effect can also be illustrated with the reactions to the US-Korea PTA.[24] Shortly after its announcement in April 2007, Japan expressed its interest in reviving its suspended PTA talks with Korea, and China indicated its intention to speed up the feasibility study of a PTA with Korea. China also revived negotiations with Mexico in August 2007. Canada and the EU, both of which had not negotiated new PTAs for several years, changed their policy. In May 2007, the European Commission announced that it had launched negotiations with Korea and the Association of South East Nations (ASEAN). In June 2007, after reaching an agreement with EFTA, the Canadian trade minister claimed that his country was "back in the game."[25]

### *C. Fixed term of Agreements*

Another feature of 19th century bilateral agreements was that, unlike today's PTAs, they were not open-ended, but included an explicit expiration date. For example, the Cobden-Chevalier agreement was signed on 23 January 1860 for 10 years, with the option of extending it subsequently.[26]Although the Cobden-Chevalier agreement was initially extended, it was terminated by the French government in March 1872 and revived after a break by a new bilateral trade agreement in July 1872. This agreement remained in force until June 1877 and it is only after a five-

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[23] MESSERLIN*, The World Trade Regime, supra* note 2.
[24] Richard Baldwin, *A Domino Theory of Regionalism* (Nat'l Bureau of Econ. Research, Working Paper No. 4465, 1993), *available at* www.nber.org/papers/w/4465.
[25] HALLAERT, PROLIFERATION, *supra* note 13.
[26] "The treaty was to hold good for ten years, and could be continued, unless one year's of its termination was given by either party, for another ten years", *see* ASHLEY, *supra* note 16.

year break that another France-UK agreement was concluded which lasted for 10 years.

The uncertainty of the duration of a trade agreement has important implications for its impact. Investments are necessary to benefit from the opportunities opened by a trade agreement. However, uncertainty is not favourable to long-term investments as the termination of an agreement may render such investments unprofitable. Thus, uncertainty reduces the trade and growth impact of an agreement. It also reduces its adjustment cost. As there are incentives to favour investments with a rapid return,[27] the adjustment cost of the time-limited bilateral trade agreement is smaller than with open-ended PTAs. Moreover, the cost of the potential termination or non-extension of a time limited trade agreement is more limited.

Nonetheless, especially in light of a strand of literature that argue that the trade liberalization of the 19th century had only a small economic impact,[28]the consequences of limited-time dimension of the bilateral trade agreements should not be overestimated.

There is evidence that the export sector responded to the opportunities opened by the bilateral trade agreements.[29]Trade grew not only because of increased traditional exports (for which investment is largely limited to capacity expansion) but also because of export diversification (which often requires new and often more uncertain investments).

This can be illustrated with the case of France. Wine producers were one of the main beneficiaries of the Cobden-Chevalier Treaty, which effectively eliminated the preferential advantage granted by Great Britain to Portuguese and Spanish wines. The British import tariff remained high but the gap between French wines

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[27] However, this effect can potentially be somewhat mitigated by the proliferation of bilateral agreement: an investment may serve to seize the opportunities opened by several bilateral agreements and remain profitable even if some of these agreements are terminated. The magnitudes of these various forces remain to be determined empirically.

[28] *See, e.g.,* Accominotti & Flandreau, *supra* note 16; Paul Bairoch, *Commerce Extérieur et Développement Economique de l'Europe au XIXe Siècle* 355 (1976); Arthur Lewis, *The Rate of Growth of World Trade*, *in* THE WORLD ECONOMIC ORDER: PAST AND PROSPECTS 11-81 (S. Grassman & E. Lundberg eds., 1981).

[29] Charles P. Kindleberger, *Foreign Trade and Economic Growth: Lessons from Britain and France, 1850 to 1913*, 14(2) ECON. HIST. REV. 289-305 (1962) [hereinafter KINDLEBERGER, *Foreign Trade and Economic Growth*]; Stéphane Becuwe, Bertrand Blancheton & Christopher M. Meissner, *Stages of Diversification: France, 1836-1938* 28 (Cambridge, MA: NBER, Working Paper No. 2177, 2015) [hereinafter BECUWE ET AL.].

and other wines was partly close.[30] As a result, "total imports of French wine rose by 600 percent in the decade following the 1860 treaty" and "by 1882, French wine imports to Britain surpassed those from either Portugal or Spain," its traditional and dominant suppliers.[31] However, the outbreak of phylloxera (a microscopic insect that feeds on the roots and leaves of grapevines) affected the wine industry drastically. By 1875, over 40 percent of French grape vines and vineyards were devastated.[32]As a result, when the discussion on the end of the treaty took place, wine growers had no incentives to oppose protectionist interests.

Moreover, the impact of trade liberalization on non-traditional exports can be measured by export diversification. Using a highly disaggregated data set, it is shown that the diversification of French exports increased dramatically in the 1860s.[33] The concentration of exports, measured by the Herfindhal index,[34]was high and stable (varying between 8 and 11) before the treaty (1836-1858) then dropped rapidly to 6 by 1865 and then to slightly above 4 by the mid-1870s. It remained at this level until the end of the century.

It is striking that export diversification occurred as soon as the wave of bilateral agreements started and that it was this rapid. This tends to support the idea for a bias for investment with rapid return and suggests that such diversification was more the result of the fall in tariffs than of the fall in other trade costs permitted by technological improvements in sea and rail transport, and in communication. These technological innovations reduced trade costs dramatically, but their impact was felt much later as they require a substantial amount of investment. Nonetheless, one should keep in mind that the increase in trade should not be fully ascribed to trade agreements. Trade agreements reduced an important trade cost, but other trade costs were reduced through technological innovations, such as air and sea transport, communication, refrigeration etc.

Moreover, export diversification was not reversed when protection increased at the end of the century. This suggests that the initial investments continued to have an impact or that other trade costs were reduced so massively that they more than offset the increase in custom tariffs. An interesting avenue for future research

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[30] John Vincent Nye, *The Myth of Free-Trade Britain and Fortress France: Tariffs and Trade in the Nineteenth Century*, 51(1) J. ECON. HIST. 23-46 (1991) [hereinafter VINCENT NYE].
[31] *Id.*
[32] KINDLEBERGER, *Foreign Trade and Economic Growth*, *supra* note 29.
[33] BECUWE ET AL., *supra* note 29.
[34] The index ranges from 0 to 100 with 100 being a specialization in a single product.

would be to assess the relative importance of the various trade costs on trade expansion and export diversification.

## III. WHAT TRIGGERED THE END OF THE 19TH CENTURY TRADE LIBERALIZATION?

Only a decade after the Cobden-Chevalier Treaty, trade liberalization implemented through a network of bilateral agreements started to unravel. Bilateral agreements continued to be negotiated, but changed in nature.

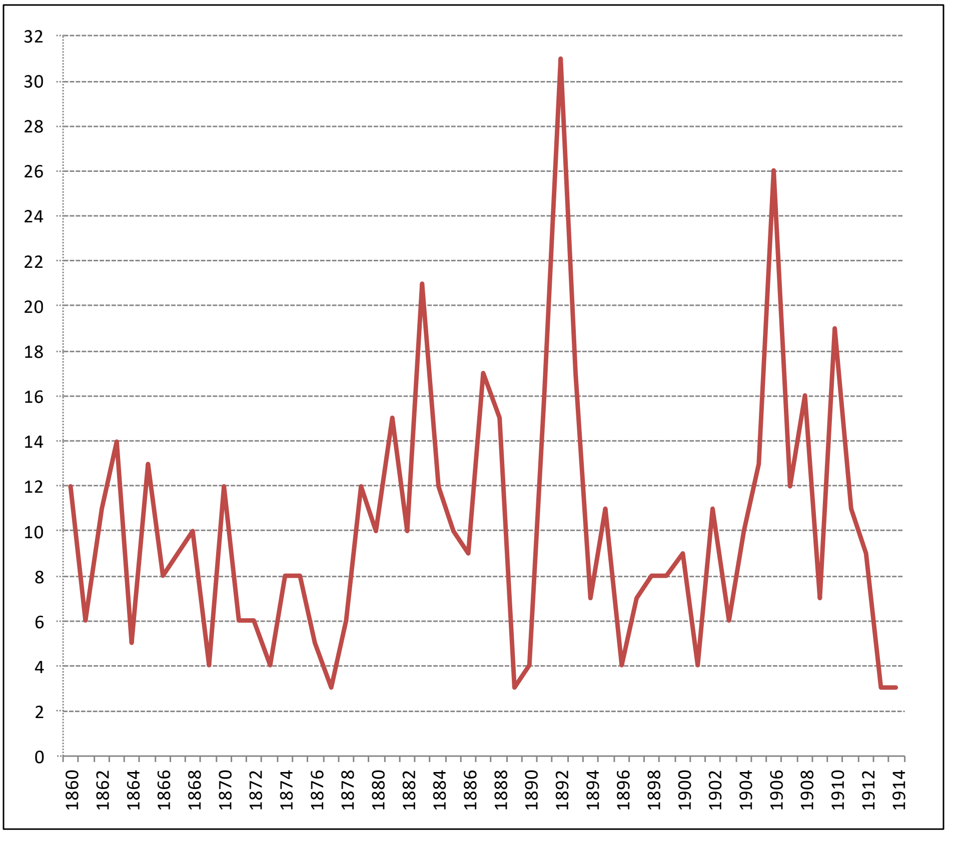
As shown in Figure 2, the number of ratified bilateral trade agreements declined during 1870-77but rebounded afterwards. This rebound reflects a progressive change in the nature of the trade agreements. Many of the late 19th century agreements did not liberalize trade but instead, translated into treaties that reflected more protectionist trade policies. Two striking examples are the spikes in the number of bilateral agreements in 1892-93 and 1906. They are largely explained by a flurry of bilateral agreements in which partner countries accepted France's new minimum tariff (one-third of all agreements of both 1892 and 1893) and German higher tariff (one-fifth of all agreements of 1906).

The network of bilateral trade agreements formed the institutional framework of the international trade system and, notwithstanding the shift towards more protectionist policies, it was maintained until the First World War. In the absence of an international organization like the GATT/WTO,[35]a network of bilateral trade agreements can form the backbone of the international trade architecture. However, without an explicitly expressed and multilaterally agreed set of rules and no organization to maintain them, this network can be used to liberalize trade as much as to implement national protectionist policies.

This part will investigate the causes of this change in the nature of the trade agreements with the purpose to identify the factors that are still relevant for today's wave of PTAs and for the trading system as a whole.

**Figure 2: Number of ratified bilateral trade agreements, 1860-1914**

[35] Strictly speaking, the GATT was not an international organization. Nonetheless it played the role of one.




Source: Author's calculation based on Pahre's database.[36]

*A. Factor 1: The fiscal and political impact of wars.*

Nowadays, it is easy to underestimate the fiscal dimension of trade liberalization as tariff revenue has become largely irrelevant for most countries' budget. This approach, however, tends to forget that for some developing countries facing difficulties to tax the informal and the agricultural sectors, tariffs remains a major source of public revenue. This reliance on tariff revenue affects some countries' capacity (notably in Africa) to engage in trade liberalization, be it unilateral, multilateral or preferential.[37]

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[36] PAHRE, *supra* note 9.
[37] Jean-Jacques Hallaert, *Economic Partnership Agreement: Tariff Cuts, Revenues Losses, and Trade Diversion in Sub-Saharan Africa*, 44(1) J. WORLD TRADE L. 223-250 (2010); Jean-Jacques

(continued)

Back in the 19th century, the fiscal reliance on tariff revenue was widespread. Such was the case of countries such as the United States where customs duties were almost the only source of revenue which were under the authority of the federal government.[38]In Europe, the United Kingdom had largely shifted from customs revenue (customs tariffs reached a peak in the United Kingdom in 1840, i.e. 20 years before the start of the start of the proliferation of bilateral trade agreements) to other forms of revenue such as income, property and estate taxes.[39]Even in that case, one argument against the Cobden-Chevalier Treaty in the United Kingdom was that it was uncertain whether the increase in consumption following the Treaty would be large enough to offset the loss in customs revenue.[40]In France, there had been a substantial tariff rationalization in the first half of the century, but the Sainte-Beuve's proposal in 1851 for a tariff reform (involving tariff cuts and the elimination of prohibitions) coupled with a tax rebalancing (through an income tax) was defeated in Parliament by the protectionists, led by Adolphe Thiers.[41] The first steps towards an income tax were limited in scope and took place after the decline of the wave of bilateral trade agreements: it started in the first years of the 1870s (a tax on incomes from real estate was created in 1872 and an income tax from the stock exchange in 1896) and an income tax was established only during the First World War.[42]

Wars were also a reason for reversing the tariff cuts agreed in the bilateral agreements. Wars were frequent at the time of the proliferation of bilateral trade agreements. To name a few, there was the Civil war in the USA in 1861-1865, the second German-Danish war of 1864, the Austro-Prussian war of 1866, and the Franco-Prussian war of 1870. In France, for protectionists like Thiers, tariffs were needed not just because of their belief in the benefit of protection but also to pay for the large cost of reconstruction and the indemnity to be paid to Germany after the defeat of 1870. To address the fiscal issue, Thiers proposed in 1871 to increase

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Hallaert, *Increasing the Impact of Trade Expansion on Growth: Lessons from Trade Reforms for the Design of Aid for Trade* 41 (Paris: OECD, Working Paper No. 100, 2010).

[38] CUNNINGHAM, *supra* note 12; Douglas Irwin, *Changes in U.S. Tariffs: Prices or Policies?* 28 (Cambridge: NBER, Working Paper No. 5665, 1996); Douglas Irwin, *Higher Tariffs, Lower Revenues? Analyzing the Fiscal Aspects of the "Great Tariff Debate of 1888"*, 58(1) J. ECON. HIST. 59-72 (1998).

[39] CUNNINGHAM, *supra* note 12; Vincent Nye, *supra* note 30; JOHN VINCENT NYE, WAR, WINE, AND TAXES: THE POLITICAL ECONOMY OF ANGLO-FRENCH TRADE, 1689-1900 174 (2007).

[40] Gabrielle Cadier, *Les Conséquences du Traité de 1860 sur le Commerce Franco-Britannique*, 7(3) HISTOIRE, ÉCONOMIE ET SOCIÉTÉ 355-380 (1988).

[41] ASHLEY, *supra* note 16.

[42] *Id.*

tariffs on sugar and coffee; to re-establish tariffs on raw materials that had been eliminated by Napoléon III; and introduce export duties and a vessel surcharge. The National Assembly followed the proposal (except for the export duties) and in fact, went further by increasing duties on more commodities. The duties on raw materials were opposed by manufacturers, triggering a political crisis. Eventually the tariff reform did not bring in the expected fiscal revenue in large part because the duties on raw materials voted by Parliament were limited because until bilateral trade agreements limited the implementation of the tariff change. For this reason, the treaties with the United Kingdom and Belgium were denounced in March 1872. New treaties with both countries were negotiated a few months later. However, these included a pledge from France to not impose the new tariff on raw materials. "The numerous exemptions from the shipping surtaxes, and the practical impossibility of doing anything with the proposed duties on raw materials, at last brought the National Assembly to recognise the uselessness of the two enactments, and in July, 1873, both were repealed."[43]Bilateral trade agreements had contained the rise in protection and, as such, were increasingly seen as an obstacle to a needed economic policy and the trade agreements with both the United Kingdom and Belgium stayed only in force for 5 years.

Wars also contributed to the end of the trade liberalization of the 1860s because they brought to power new political elites that were, in some countries, protectionist. Notably, the French-Prussian brought to an end the Second Empire in France. In consequence of the defeat, Napoléon III's policies (including his trade liberalization policy) were discredited. Thiers, a convinced protectionist, led France; the major opponent to the Cobden-Chevalier Treaty, the textile industrialist Pouyer-Quertier, became Finance Minister;[44] and politicians once in favour of free trade but now advocating protectionism, such as Ferry[45] were to direct the policy of France up to the end of the century. Reinforcing the protectionist sentiment was the feeling that the continuation of the bilateral trade agreement was imposed by Germany. In the Frankfurt Treaty ending the French-Prussian war, the French authorities tried to negotiate nonrenewal of the bilateral trade agreement with Prussia but eventually, France had to provide MFN treatment to the new German Empire. This provision was described as "Sedan economic"; Sedan was the name of the city where the French army experienced a major defeat in the war.[46]

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[43] *Id.*
[44] ANCEAU, *supra* note 19; JÉRÔME GRONDEUX, LA FRANCE ENTRE EN RÉPUBLIQUE 1870-1893 224 (2000) [hereinafter GRONDEUX].
[45] JEAN-MICHEL GAILLARD, JULES FERRY 730 (1989).
[46] GRONDEUX, *supra* note 44; PIERRE GUIRAL, ADOLPHE THIERS 622 (1986).

Wars were also accompanied by an increase in nationalism which in turn tended to favour protectionism. This was the case in particular with Germany which in 1879, significantly increased its customs tariffs to secure the home market for German industrialists. As argued by Cunningham, "It would be [...] a mistake to suppose that the return to protection was merely incidental; there was a very deep and close connection between the outburst of militarism and the reversal of economic policy."[47]

There was a fiscal dimension to Germany's move toward a more protectionist policy. Germany faced a sizeable fiscal imbalance triggered by the rapid growth of expenditures. Bismark implemented a "reversed" tax rebalancing: he reduced the high direct taxes and increased indirect taxes in the form of customs duties. Fixing the fiscal imbalance this way was rational given the internal politics.[48]Through the mid-century, Germany had been a major grain exporter in the European markets but in the 1870s the competition from the United States and Russia increased. With an increased dependence on the domestic market, landowners became more appreciative of a protective tariff and shifted in their stance from supporting free trade to protection. As the Junkers were also dominating the German bureaucracy, "protective tariffs were the mortar that held together the ruling political coalitions on the right, but the economic impact of tariffs remained a subject of dispute."[49]Eventually, the 1878 elections brought to Parliament a protectionist majority that wanted protection for heavy industry and grain, paving the way to the new tariff of 1879.

The Ottoman Empire is another illustration of the importance of fiscal difficulties in the end of the trade liberalization. The Ottoman Empire suffered from fiscal problems not due to tariff cuts but because of a terms-of-trade shock linked to the international drop in wheat prices: "The Ottoman government finances were [...] hurt because the government derived more than a quarter of its revenues from agricultural production in a country where close to 90 percent of all land under cultivation was for cereals."[50]

Finally, in Italy, fiscal difficulties were part of the broader macroeconomic imbalances. The fiscal position was deteriorating rapidly and Italy had a large debt

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[47] CUNNINGHAM, *supra* note 12.
[48] ASHLEY, *supra* note 16; Steven B. Webb, *Agricultural Protection in Wilhelmian Germany: Forging an Empire with Pork and Rye*, 42(2) J. ECON. HIST. 309-326 (1982) [hereinafter WEBB].
[49] Webb, *supra* note 48.
[50] Sevket Pamuk, *The Ottoman Empire in the 'Great Depression' of 1873-1896*, 44(1) J. ECON. HIST. 107-118 (1984) [hereinafter PAMUK].

and balance of payment problems. To address these problems, and also because customs tariffs accounted for more than 20 percent of total revenue, Italy increased its tariffs as early as 1878.[51]Supporting the argument that the nature of the bilateral trade agreements had changed, two-thirds of the rebound in the number of bilateral trade agreement experienced in 1879 (Figure 2) could be traced back to Italy. None of the 8 bilateral trade agreements signed that year remained in force beyond the end of 1880.

The case of Italy points that beyond the fiscal issues, protection was a response to an economic crisis while the case of Germany points to the impact of increased external competition.

### B. *Factor 2: Protectionist responses to an economic crisis and the emergence of a new trade giant*

Between 1873and 1896, Europe faced what was called at the time the "Great Depression." The economic crisis started by a sharp price decline of agricultural products. Then the crisis spread to the rest of the economy, triggering banking and stock exchange crises around the world. In the1870s, 1880s, and 1890s, the world experienced many more banking crises and external defaults than in previous decades (Annex I).

The drop in the prices in agricultural products was not as much the result of a reduction in tariffs than the outcome of a sharp and sudden increase in competition from the United States and to a lesser extent Russia, allowed by technical innovations. The railway had connected remote places of the United States to the East coast allowing cereals of the great plains of the U.S. Midwest to be exported at low cost thanks to innovation in sea transport. The reduction in intercontinental transport cost from 1870 to 1914 was "unprecedented, dramatic, and worldwide [...] especially when declines in overland rates are taken into account."[52]

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[51] Frank J. Coppa, *The Italian Tariff and the Conflict Between Agriculture and Industry: The Commercial Policy of Liberal Italy, 1860-1922*, 30(4) J. ECON. HIST. 742-769 (1970) [hereinafter COPPA]; KINDLEBERGER, *The Rise of Free Trade, supra* note 7.

[52] RONALD FINDLAY & KEVIN O'ROURKE, POWER AND PLENTY - TRADE, WAR, AND THE WORLD ECONOMY IN THE SECOND MILLENNIUM 624 (2007) [hereinafter FINDLAY & O'ROURKE].

The impact was large and sudden enough to "obsess contemporaries"[53] and be called a "grain invasion." The real volume of U.S. exports of processed foodstuffs (primarily wheat) increased by 346 percent from 1871 to 1879-1881.[54]Primarily as a result of the entry of American wheat into the international markets, world wheat prices collapsed. The grain invasion has been extensively studied and if estimates in the drop of cereals prices differ, studies concur that it was dramatic.[55] According to Pamuk, world wheat prices collapsed by more than 60 percent between 1873 and 1894.[56] O'Rourke estimates that the *real* price drop of wheat between 1870-74 and 1909-13 reached 35.3 percent in Britain, 33.3 percent in Denmark, 23.2 percent in Sweden, 22.5 percent in France, and 21.2 percent in Germany.[57]

The collapse in grain prices was so dramatic that it overshadowed the impact of improved transportation for other goods. For instance, the increase in imports of silk from Japan and China affected the exporting textile and apparel sector,[58]and, at the end of the century, the progress in refrigeration allowed exports of meat from the American continent to Europe.[59]

The grain invasion was a major reason for the return to protection in France, Germany, Austria, and Italy. These countries were displaced of their export markets and became increasingly dependent on their domestic market where external competition was also being felt. As a result, calls for protection rose. One important export market was the United Kingdom. Kravis notes that "in the case of wheat […], the shares of the new countries in United Kingdom imports rose rapidly, while the shares of two of the traditional suppliers (France and Germany) declined and that of a third (Russia) revealed no trend."[60]Between the 1840s and the 1890s the United States share registered a gain of 39 percentage points, while the combined shares of Germany and France declined by 36 percentage points.

Another reason for the increase in demand for protection was the distributional impact of competition: the peasants (a large majority of the population in most

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[53] A.E. Musson, *The Great Depression in Britain, 1873-1896: A Reappraisal*, 19(2) J. ECON. HIST. 199-228 (1959) [hereinafter MUSSON].
[54] FINDLAY & O'ROURKE, *supra* note 52.
[55] *See* FINDLAY & O'ROURKE, *supra* note 52, for a review of literature.
[56] PAMUK, *supra* note 50.
[57] Kevin H. O'Rourke, *The European Grain Invasion, 1870-1913*, 57(4) J. ECON. HIST. 775-801 (1997).
[58] ASHLEY, *supra* note 16.
[59] Irving B. Kravis, *Trade as a Handmaiden of Growth: Similarities between the Nineteenth and Twentieth Centuries*, 80(320) ECON. J. 850-872 (1970) [hereinafter KRAVIS].
[60] *Id.*

countries) were not the only ones to suffer from a drop in revenue (and of high interest rates as a result of a gold shortage from the 1870s to 1886 when gold was discovered in South Africa),[61]as in many countries, landowners and aristocrats experienced a drop in their rent as well. This led to a change in the political economy of trade policy in France, the United Kingdom and Germany. Even agricultural producers in Britain suffered:

> *"For nearly thirty years after the repeal of the Corn Laws British imports did serve mainly to supplement domestic production. Domestic agriculture enjoyed prosperity; acreage in cultivation actually expanded, and rents and land values rose. But then the situation changed swiftly; British wheat production dropped by 60 per cent between 1873 and 1894 and the United States accounted for nearly 80per cent of the increase in United Kingdom imports between 1870s and 1890s".*[62]

Finally, for some countries, the American competition in food stuffs made pointless the bilateral trade agreements. Italy[63]and Austria had engaged in bilateral trade agreement to boost their agricultural exports. This was now unrealistic. Cunningham notes that "Austria had been content to remain an agricultural country and to receive her manufactured wares from England in exchange for raw products; but in the early seventies it *became impossible* (emphasis added) to pursue this scheme, as her purchasing power was diminishing. [...]Austrian dealers [...] could no longer export on such terms as to purchase English manufactures at reasonable rates, and they determined to take the course of developing native manufactures, so that the country can be independent of the variations which arose from complications and developments in distant parts of the globe."[64] In other words, the development of unfavourable terms-of-trade that triggered fiscal difficulties in the Ottoman Empire was also felt in other countries like Austria where they took the form of a balance of payment problem.

Under these circumstances and in the absence of the possibility of devaluation,[65] protection was perceived as a possible solution. The economic, political, and social cost of maintaining a relatively open trade policy was high. Without any international organization like the WTO able to accommodate and limit the

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[61] DANI RODRIK, THE GLOBALIZATION PARADOX 346 (2011).
[62] KRAVIS, *supra* note 59.
[63] COPPA, *supra* note 51.
[64] CUNNINGHAM, *supra* note 12.
[65] Devaluation was both outside of the accepted economic policy interventions and impossible under the gold standard.

protectionist pressures, protectionism swept across Europe and bilateral trade agreements were renegotiated to allow its effective implementation. However, as illustrated above by the renegotiation by France of the treaty with the United Kingdom and Belgium following the 1871 tariff increase, renegotiation could be difficult and limited the scope for protection.

### *C. Factor 3: Disappointment with the international trade architecture or suspicion of an uneven playing field.*

There was also a widespread feeling that the network of bilateral agreements was unfair and benefitted other parties in the agreements more. This affected even the strongest proponent of free trade: Great Britain. As in other European countries, agriculture was severely depressed in the United Kingdom but the reaction was different. According to Musson, few called for agricultural protection because "the memory of the corn laws and dear bread was still too strong"[66]and, according to Bernstein, because "few Englishmen [...] shed tears over the harm done to the landed aristocracy by grain and meat from the New World".[67]

Things changed when competition affected the manufacturing sector, notably steel, sugar refining, and jewellery. "What did shake free-trade beliefs [...] was the growing influx of foreign manufactured goods. British industry had to face foreign competition not only abroad but even in the home market. While her industrial rivals erected tariff barriers against British goods, curtailing their import, exports of foreign manufactures to Britain steadily grew, thanks to British free-trade policy."[68] American competition and the rise in protection in Europe were met with cries for "fair trade" and "reciprocity." It was argued that the international trade system was inadequate because it did not ensure a level playing field: "The rest of the world had not, as was hoped by Cobden and Bright, adopted the free-trade gospel, and it would be ruinous, it was argued, for Britain to remain an open market when her competitors were strongly protectionist."[69] As often in that case, the same claim of unfairness was made by countries of the other side of the fence. Cunningham argues that "By 1880, the failure of Cobden's effort to induce other countries had become conspicuous. In so far they have tried it, they had come to the conclusion it did not suit them."[70]Following Friedrich List's argument on protecting infant-

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[66] MUSSON, *supra* note 53.
[67] WILLIAM J. BERNSTEIN, A SPLENDID EXCHANGE: HOW TRADE SHAPED THE WORLD 367 (2008).
[68] MUSSON, *supra* note 53.
[69] *Id.*
[70] CUNNINGHAM, *supra* note 12.

industry,[71]other countries urged that free trade suited England (the most advanced country) but was not equally advantageous to all nations at the same time.

Whatever the accuracy of these claims, they betray a lack of confidence in the international trade architecture. Moreover, they are strikingly similar to what we experience today-China's trade performance appears as much as a threat to the United States as the United States'(and Germany's) trade performance appeared as a threat to the United Kingdom in the late 19thcentury. Calls for "fair trade" were also routinely launched in the United States in the face of growing competition from Japan in the 1980s and more recently, competition from China. The United States repeatedly claims that China is not playing by the rules. These claims were listed in the 2006 United States Representative report on US-China relations as "barriers to some U.S. exports; failure to protect intellectual property rights; failure to protect labor rights and enforce labor laws and standards; unreported and extensive government subsidies and preferences for its own industries; environmental concerns; spotty compliance with some international trade rules; and a large and growing imbalance in our bilateral trade flows."[72] In early 2016, a U.S. presidential candidate revived the idea of taxing imports from China to supposedly offset the "unfair" advantage of currency manipulation and address the trade imbalance between the US and China.[73]This idea is not new. Already in 2006, the draft Schumer-Graham bill proposed a 27½ percent surcharge on imports from China unless decisive steps were taken to revalue the Chinese currency. This idea went nowhere, partly because if accession to the WTO imposes some obligations on China, or renders it liable to an adverse WTO dispute settlement body decision, it also protects China against some outright retaliation and protectionist measures. This partly explains why the American policy vis-à-vis China has evolved. The United States now prefers to promote a "mega-PTA" that would exclude China: the Trans-Pacific Partnership (TPP). Ironically, the WTO rules may have prompted a major PTA.

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71 MATTHIAS HILGERT, INTERNATIONAL TRADE: FRIEDRICH LIST'S THEORY OF THE INFANT INDUSTRY ARGUMENT (2005).

72 UNITED STATES TRADE REPRESENTATIVE, U.S.-CHINA TRADE RELATIONS: ENTERING A NEW PHASE OF GREATER ACCOUNTABILITY AND ENFORCEMENT—TOP-TO-BOTTOM REVIEW 29 (Washington D.C.: USTR, 2006), https://ustr.gov/sites/default/files/Top-to-Bottom%20Review%20FINAL.pdf .

73 Donald J. Trump, *Ending China's Currency Manipulation*, WALL ST. J., (Nov. 9 2015), http://www.wsj.com/articles/ending-chinas-currency-manipulation-1447115601; *Donald Trump Favours High Tariffs on Chinese Exports,* BBC NEWS, Jan. 7, 2016, http://www.bbc.com/news/business-35258620.

## IV. CONCLUSION: LESSONS OF THE 19TH CENTURY EXPERIENCE FOR TODAY'S WTO-BASED INTERNATIONAL TRADING SYSTEM

The network of bilateral trade agreements that underpinned trade liberalization in the 1860s survived the rise in protectionism and only collapsed because of World War I. It survived because it formed the international trade architecture of the time, and as such was valued. Countries could have denounced trade agreements and implemented their protectionist agenda freely. Instead, they chose to maintain the network of agreements even though negotiating the practical implementation of the protectionist measures constrained how far protection could go. The benefits of an international trade architecture where negotiations limit the risks of retaliation and of trade wars were clearly understood.

This remains true today. Though PTAs proliferate and undermine the WTO system like "termites in the system",[74] the WTO remains essential for PTAs, as it ensures a safety net. At the WTO, discussions can be held and disputes can be settled without resorting to damaging trade wars. In other words, even in a world where most trade deals are reached in a preferential setting, the WTO is needed to maintain a stable trading system even if its rules constrain (slightly) what can be agreed in preferential agreements. Ironically, PTAs need the WTO and the WTO system makes sustainable the very PTAs that undermine it.

Another lesson of the 19th century that still holds relevance in the 21st century is the fact that technological innovations favour the emergence of new trade giants. The dramatic drop in trade costs due to sea and land transport innovations, communication, and refrigeration allowed an "invasion" of Europe by U.S. products. This was a powerful reason for the rise in protectionism. More recently, new technological innovations such as ICT have reduced trading costs to an extent that they allowed the international fragmentation of trade along the so-called Global Value Chains. These Global value chains have organized themselves around three regional hubs: Germany, the United States, and China that is progressively replacing Japan as the hub of the Asian value chain (Annex II).

The emergence of a new trade giant threatens the leading trade powers and undermines their confidence in the international trade system. In the 19th century, the emerging trade giant, the United States was an outsider to the network of bilateral agreements (and alien to the unconditional MFN). As a result, the international trade system had no means to diffuse tensions. The WTO was more successful at containing protectionist pressures because the emerging trade giant,

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[74] JAGDISH N. BHAGWATI, TERMITES IN THE TRADING SYSTEM - HOW PREFERENTIAL AGREEMENTS UNDERMINE FREE TRADE 139 (2008).

China, is a part of the system. The rules of the international architecture (not just the WTO, but also the IMF when it comes to retaliation against alleged currency manipulation) constrain possible retaliations against China as much as they constrain China's means of export promotion.

However, similar to the 19th century, PTAs can be used as much for liberalization as for protection. This is to some extent the purpose of the Trans-Pacific Partnership promoted by the United States. The TPP will foster trade and regulatory reforms in the Pacific Rim but will exclude China, despite its core position in Asia.

Regulatory reform is arguably the main challenge for today's trade system. It is needed to reap the benefit from the international fragmentation of production. Baldwin argues that "the WTO has not kept pace" and was not able to deliver the required regulatory changes.[75] The trade facilitation agreement reached in December 2013 at the WTO Ministerial in Bali though systematically important (as well as symbolically important as it is the first multilateral agreement reached not only in the Doha Round but also since the inception of the WTO) remains limited to customs issues. This is arguably too little. PTAs have delivered some regulatory changes but, because each of them is governed by different and sometimes inconsistent set of rules, they end up fragmenting the world trade rules and thus, do not support the division of production across a large number of countries. Mega-PTAs focusing mostly on regulatory aspects and encompassing most, if not all of the countries involved in the regional value chains may help solve the problem. However, this is not without risks. Political and diplomatic risks arise if mega-PTAs are used to exclude emerging trade giants. There are also economic risks-some models show that "welfare is U-shaped in the number of trading blocks, and that welfare is minimised for a small number of blocs – which suggests that current trends could indeed be adverse"[76]In these models, world welfare would be high if either the trade system was exempt of PTAs, or if there were many PTAs. It would be the lowest if the trade system is organized around a small number of mega-PTAs. Therefore, the world would be better off if regulatory reforms that are needed to support the new form of trade (based on global value chains) was negotiated in a multilateral way, even if that proves to be more difficult and lengthy.

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[75] Richard Baldwin, *WTO 2.0: Global Governance of Supply-Chain Trade* 24 (London: CEPR, Policy Insight No. 64, 2012).

[76] Paul R. Krugman, *Regionalism vs. Multilateralism: Analytical Notes*, *in* JAIME DE MELO & ARVIND PANAGARIYA, NEW DIMENSIONS IN REGIONAL INTEGRATION 75-79 *(1993).

Finally, it is worth repeating that the system of PTAs also needs the WTO system considering that some critical trade issues, such as agriculture subsidies, cannot be dealt with in a meaningful way in a preferential trade agreement, but only in a multilateral setting.

## ANNEX I: ECONOMIC AND FINANCIAL CRISIS IN THE 19TH CENTURY

| Part I | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Countries | 1850-1859 | | | 1860-1869 | | | 1870-1879 | | |
| | External Debt Default | Banking Crisis | Worst Output Decline 1/ | External Debt Default | Banking Crisis | Worst Output Decline 1/ | External Debt Default | Banking Crisis | Worst Output Decline 1/ |
| **Hub** | **3** | **3** | **3** | **1** | **3** | **4** | **2** | **8** | **3** |
| Austria-Hungary | | | | X | | | | X | |
| Belgium | | | | | | | | X | |
| Britain | | X | | | X | | | X | |
| Denmark | | X | X | | | | | X | X |
| France | | | X | | | | | X | |
| Germany | X | X | | | | | | | |
| Italy | | | | | X | X | | | |
| Netherlands | | | | | | | | | |
| Norway | | | | | | | | | |
| Ottoman Empire | | | | | | | X | | |
| Portugal | X | | | | | | | | |
| Russia | | | | | X | | | X | |
| Spain | X | | | | | X | X | | X |
| Sweden | | | | | | X | | X | |
| Switzerland | | | X | | | X | | X | X |
| | | | | | | | | | |
| **Spoke** | **3** | **0** | **0** | **3** | **0** | **0** | **8** | **2** | **0** |
| Argentina | X | | | | | | X | | |
| Bolivia | | | | | | | | | |
| Brazil | | | | | | | | | |
| Chile | | | | | | | | | |
| Colombia | X | | | | | | X | | |
| Costa Rica | | | | | | | X | | |
| Ecuador | | | | X | | | | | |
| El Salvador | | | | | | | | | |
| Guatemala | | | | | | | X | | |
| Honduras | | | | | | | X | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Japan | | | | | | | | X | |
| Mexico | X | | | X | | | | | |
| Nicaragua | | | | | | | | | |
| Paraguay | | | | | | | X | | |
| Peru | | | | | | | X | X | |
| Uruguay | | | | | | | X | | |
| Venezuela | | | | X | | | | | |
| | | | | | | | | | |
| **Out of PTA Network** | **0** | **1** | **1** | **1** | **4** | **1** | **2** | **3** | **2** |
| Australia | | | | | | | | | |
| Canada | | | | | X | | | X | X |
| China | | | | | X | | | X | |
| Dominican Rep | | | | | | | X | | |
| Egypt | | | | | | | X | | |
| Finland | | | | | | X | | | |
| Greece | | | X | | X | | | | |
| Haiti | | | | | | | | | |
| Ireland | | X | | | | | | | |
| New Zealand | | | | | | | | | X |
| Tunisia | | | | X | | | | | |
| USA | | | | | X | | | X | |
| | | | | | | | | | |
| **Percentage** | | | | | | | | | |
| Total | 14% | 9% | 9% | 11% | 16% | 11% | 27% | 30% | 11% |
| Hub | 20% | 20% | 20% | 7% | 20% | 27% | 13% | 53% | 20% |
| Spoke | 18% | 0% | 0% | 18% | 0% | 0% | 47% | 12% | 0% |
| Out of PTA Network | 0% | 8% | 8% | 8% | 33% | 8% | 17% | 25% | 17% |

| Part II | | | | | | |
|---|---|---|---|---|---|---|
| Countries | 1880-1889 | | | 1890-1899 | | |
| | **External Debt Default** | **Banking Crisis** | **Worst Output Decline 1/** | **External Debt Default** | **Banking Crisis** | **Worst Output Decline 1/** |
| **Hub** | **1** | **5** | **1** | **1** | **8** | **3** |
| Austria-Hungary | | | | | | |
| Belgium | | | | | | |
| Britain | | X | | | X | |
| Denmark | | X | | | | |
| France | | X | | | | |
| Germany | | X | | | X | |
| Italy | | X | X | | X | X |
| Netherlands | | | | | X | X |
| Norway | | | | | X | |
| Ottoman Empire | | | | X | | |
| Portugal | | | | | X | |
| Russia | X | | | | X | |
| Spain | | | | | | X |
| Sweden | | | | | X | |
| Switzerland | | | | | | |
| | | | | | | |
| **Spoke** | **2** | **2** | **0** | **10** | **5** | **2** |
| Argentina | | X | | | X | |
| Bolivia | | | | | | |
| Brazil | | | | X | X | X |
| Chile | X | | | X | | |
| Colombia | X | | | | | |
| Costa Rica | | | | X | | |
| Ecuador | | | | X | | |
| El Salvador | | | | X | | |
| Guatemala | | | | X | | |
| Honduras | | | | | | |
| Japan | | X | | | | X |
| Mexico | | | | | X | |
| Nicaragua | | | | X | | |
| Paraguay | | | | X | X | |
| Peru | | | | | | |
| Uruguay | | | | X | X | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Venezuela | | | | X | | |
| **Out of PTA Network** | **0** | **2** | **2** | **1** | **5** | **2** |
| Australia | | | X | | X | X |
| Canada | | | | | | |
| China | | X | | | X | |
| Dominican Rep | | | | X | | |
| Egypt | | | X | | | |
| Finland | | | | | | |
| Greece | | | | | X | X |
| Haiti | | | | | | |
| Ireland | | | | | X | |
| New Zealand | | | | | | |
| Tunisia | | X | | | X | |
| USA | | | | | | |
| **Percentage** | | | | | | |
| Total | 7% | 20% | 7% | 27% | 41% | 16% |
| Hub | 7% | 33% | 7% | 7% | 53% | 20% |
| Spoke | 12% | 12% | 0% | 59% | 29% | 12% |
| Out of PTA Network | 0% | 17% | 17% | 8% | 42% | 17% |

Source: Author's calculation based on Reinhardt.[77]

[77] Carmen M. Reinhart, *This time is Different Chartbook: Country Histories on Debt, Default, and Financial Crises* 127 (Cambridge, MA: NBER, Working Paper No. 15815, 2010).

## ANNEX II: GLOBAL VALUE CHAINS

| Imports 2011 | From | Austria | Belgium | Czech Rep | France | Germany | Italy | Netherlands | Poalnd | Spain | UK | Ireland | Russia | Brazil | USA | Canada | Mexico | Australia | China | Taiwan POC | Japan | Korea | India | Indonesia |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| By | | | | | | | | | | | | | | | | | | | | | | | | |
| Austria | | | | | | | 0.5% | | | | | | | | | | | | | | | | | |
| Belgium | | | | | | | 0.4% | 0.5% | | | | | | | | | | | | | | | | |
| Czech Rep. | | | | | | | 0.3% | | | | | | | | | | | | | | | | | |
| France | | | | | | | 1.2% | | | | | | | | | | | | | | | | | |
| Germany | | 0.4% | | 0.4% | 0.3% | 0.6% | 0.4% | 0.7% | 0.3% | | 0.5% | | | 0.5% | | | 0.6% | | | | | | | |
| Italy | | | | | | | 0.8% | | | | | | | | | | | | | | | | | |
| Netherlands | | | | | | | 0.4% | | | | 0.3% | | | 0.3% | | | | | | | | | | |
| Poland | | | | | | | 0.3% | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Spain | 0.3% | 0.3% | | | | | | | | | | | | | | |
| UK | | 0.5% | 0.4% | | | | | 0.6% | | | | | | | | |
| Ireland | | | | 0.4% | | | | 0.4% | | | | | | | | |
| Russia | | | | | | | | | | | | | | | | |
| Brazil | | | | | | | | | | | | | | | | |
| USA | | 0.6% | | 0.6% | 0.3% | | | | 2.1% | 1.4% | | 1.9% | | 0.6% | 0.3% | 0.4% |
| Canada | | | | | | | | 1.5% | | | | | | | | |
| Mexico | | | | | | | | 1.1% | | | | 0.3% | | | | |
| Australia | | | | | | | | | | | | 0.4% | | | | |
| China | | 0.8% | | | | 0.5% | 0.3% | 1.4% | | | 1.0% | | 1.1% | 1.3% | 1.3% | |
| Taiwan POC | | | | | | | | | | | | | | 0.4% | | |
| Japan | | | | | | | | 0.5% | | | 0.5% | 0.9% | | | 0.4% | |

| | | | |
|---|---|---|---|
| Korea | 0.4% | 0.8% | 0.4% |
| India | | 0.5% | |
| Indonesia | | | |

(Share of imported intermediates goods and services in percent of total trade in intermediaries, 2011)
Sources: WIOD database and author's calculation.
Note: Imports of intermediates by the row country from the column country as a share of total trade in intermediates reported in the WIOD database.17 countries identified in the WIOD database with no bilateral trade above 0.3 percent in either period, as well as the rest of the World, are not shown.