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Something Rational in the State of Denmark? The Case of an Outsider in the Cobden-Chevalier Network 1860-1875

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Something rational in the state of Denmark?

The case of an outsider in the Cobden-Chevalier network 1860-1875[1]

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Abstract: We examine the case of an important outsider to the Cobden-Chevalier network of bilateral treaties in the second half of the nineteenth century. We attempt to explain this through a study of the structure of Danish trade and protection. We demonstrate, in contrast to previous accounts that have considered Danish trade policy somewhat irrational, that Denmark was right to remain outside. She had little to gain from concluding treaties, since her main trading partners offered free trade for her exports, agricultural goods, and she needed her own tariffs for revenue purposes.

JEL codes: N7

Key words: Bilateral treaties, Cobden-Chevalier network, Denmark

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1. Introduction

The network of bilateral trade treaties that emerged in the aftermath of the Anglo-French Cobden-Chevalier Treaty of 1860 is regarded as the institutional backbone of international trade policy cooperation in the second half of the nineteenth century. It consisted of more than fifty bilateral agreements between Western and Central European countries that were interlinked by the unconditional most-favoured nation clause (MFN). The resulting level of political cooperation and commercial liberalisation in Europe was unsurpassed until the coming of the European Economic Community and forms a key component of the idea of a European free trade era during the 'first globalization'. The network was mainly linked together by commercial treaties of European countries with France, Germany, Belgium, and Italy.

An important outsider to this story was, however, Denmark. During the period of the rapid expansion of treaty-making in Europe, 1860 to 1875, Denmark concluded only three commercial treaties with minor trading partners: Belgium in 1863, Italy in 1864, and Switzerland in 1875. In fact, by 1875 it was the only fully independent European country that had failed to sign a commercial agreement with France.

The question might then be asked as to why Denmark failed to participate. The importance of understanding this is twofold. First, Denmark is often pointed to as an exemplar of success in the first era of globalization, with her transformation from being an exporter to an importer of grains used to feed a growing production and export of animal products: particularly butter to England. This process took off during the Cobden-Chevalier era. Second, and related to the first, the Danish "national tradition of liberalism" is a recurrent theme in Danish history, and often considered to be a large part of the reason for her economic success (Henriksen 1993, p. 156). And yet this did not seem to have been accompanied by a spirit of internationalism, since Denmark chose to stand outside the free trade network of the mid-nineteenth century.

2. Our approach

While scholars have recognized the special role of Denmark (see for example the classic economic history by Hansen 1984, p. 184), no clear explanation for why Denmark remained immune to the "free trade epidemy" (Lazer 1999) that infected the rest of Europe has yet been presented. Moreover, when Danish trade policy is discussed, it is often seen as somewhat irrational. Although Denmark followed others with a move towards free trade with the tariff act of 1863, the structure of the remaining protection seems rather illogical. This was even more so after the loss of the Duchies of Schleswig-Holstein in 1864, which seemed to make the seemingly illogical tariffs even more absurd. Was there method in the madness, however? We thus attempt to assess whether her lack of enthusiasm for international treaty-making can be understood by examining the information available to policymakers at the time, and using the methodology described in Lampe (2009b), who provides a more formal way of assessing which bilateral pairs would have been advantageous for Denmark.

By this, we contribute to a wider field: Through this case-study of non-cooperation, insights can be gained into the margins of political and economic co-operation and the potential benefits to be obtained from it. Co-operation is marked by decisions, and not an inescapable process of *Weltgeist* on its way to crown history with reason. Decisions should be taken on the basis of existing information, valuing potential benefits. Recent studies of the post-1945 world trade regime established through the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO) have shown that the benefits for the average member – in terms of increased trade flows – might be insignificant (Rose 2004), while the core members who established the rules of the system and retained important bargaining power during its evolution gained significantly (Gowa and Kim 2005, Westermeier 2008). Similar results have been obtained in recent studies of the first round of the Cobden-Chevalier network (Accominotti and Flandreau 2008, Lampe 2009a).

Hence, for countries at the margin, the decision to cooperate or not might make only a small difference. Up to now – as Robert Pahre emphasises in his recent study of what he denominates 'the agreeable customs of 1815-1914' – "unfortunately, cases of noncooperation have received little or no attention" (Pahre 2008, p. 12). Pahre uses a variety of datasets that span the entire 19th century and include a wide range of countries in and outside Europe. He mostly uses it for quantitative analysis of several theoretical hypotheses, but without any emphasis on Denmark.

Nevertheless, for the second-best solution of bilateral cooperation to be necessary, there must be failures to obtain first-best solutions, i.e. unilateral/multilateral free trade. While we cannot assess the reasons why tariffs existed in all potential partner countries, their distribution across commodities might be important, taking into account the specific production and export structure of the Danish economy, which was basically agricultural. Since it takes two to tango or to conclude a bilateral treaty, we also need to consider the Danish tariff from the point of view of potential treaty partners. Finally, second-best solutions once established might lead to negative outcomes for third parties, i.e., a bilateral treaty establishing mutual preferential tariff rates between the United Kingdom and France might harm Danish producers and exporters to each of these countries. This might lead to a "domino effect" of bilateralism (Baldwin 1995), in which Danish export interests might plead the government to negotiate equal (or better) treatment abroad. Apart from Danish and foreign tariff rates we therefore also have to assess potential discrimination from foreign co-operation.

We thus divide the following as follows: Section 3 looks at the structure of Danish imports and exports, and tariff barriers to both in order to examine the potential gains from division of labour from bilateral treaties. Section 4 provides a more formal assessment of the optimal choice of parties for bilateral treaties, using the results of Lampe (2009b). Section 5 concludes.

3. An assessment of the potential gains from treaty making

Background

Before 1863, Danish tariffs were based on a tariff law of 1797 which, for its time, was fairly liberal and has been considered a clear break with Mercantilist thinking. (Scharling 1905, p. 260, Becker-Christensen 1988, p. 518-20) The process of liberalization continued over the years with various reforms, with a particularly significant one in 1838, always in the direction of tariff reductions, including the introduction of zero-tariffs for unprocessed grain in 1846 (Fode 1989, pp. 156-159).

The major reform came in 1863, but despite the timing, it is not clear that the conclusion of the Cobden-Chevalier treaty in 1860, despite attracting initial attention and even admiration, was particularly important for the movement towards tariff reform in Denmark. This seems in fact to have had roots going rather farther back in time. (Winding 1959)

The 1863 tariff law, which came into force on 1 April 1864, generally led to lower protection, although it was implicitly formulated so that government revenue would not be affected. (Hansen 1984, p. 193) The structure of protection after the tariff reform of 1863 has often been considered to be somewhat irrational, since it imposed a duty by weight on industrial goods, thus offering the highest protection to crude and simple products, which was presumably a disadvantage for a country looking to industrialize. Moreover, falling prices meant that the incidence of this protection was increasing over time (Hyldtoft 1999, p. 182). Whatever the case, the significance of the 1863 law was overshadowed by the loss of Schleswig-Holstein to Prussia in the war of 1864: this meant that two-fifths of the home market was lost (Hyldtoft 1999, p. 58). This made the 1863 tariffs, which seem in part to have been intended to support the somewhat more industrialized areas in the Duchies, obviously anachronistic.[2] However, despite being a frequent topic of debate, and occasional suggestions for amendment, there was simply not the necessary political consensus for change (Hyldtoft 1999, p. 183, Scharling 1905, pp. 571-583), and it was not until 1908 that substantial changes were made to the structure of protection (Hansen 1984, p. 194).[3] This being despite the fact that participation in the European trade agreements movement offered a way to adjust the tariff law. Although three treaties were signed, as mentioned above, this opportunity was not seized since they were all pure most-favoured nation agreements, i.e. they stipulated non-discrimination only, but did not involve the reduction of duties on any item. A French proposal for a trade treaty including

[2] Although Hornby (1969) claims that industry protection was a liberal myth.

[3] Notable exceptions were the so-called *Krigsskat* (War Tax) of 5 August 1864, which raised duties on "luxury goods", namely sugar and molasses, tea, coffee and coffee surrogates (chicory), tobacco, wine, cider and spirits, to pay for the war (Scharling 1905, p. 570), and the Law of 1891 which reduced duties on sugar, chocolate and crude oil. (Scharling 1905, p. 583)

actual tariff reductions was declined in 1867 (Scharling 1892, Gerlach 1911, pp. 156-160).[4] As Scharling wrote in 1905 "there is no other land which has held back as much from concluding tariff treaties as Denmark in order to maintain its freedom to alter its tariff rates as it sees fit – and there is no other land which has been so reluctant to make use of its freedom to change its tariff rates"[5]. The 1863 law thus provides the context within which the choice of the Danish government not to participate in the Cobden-Chevalier network can be understood.

The structure of Danish trade and its implications

The old "customs union literature" following Viner (1950) suggests that trade policy cooperation between two countries might be beneficial if it increases bilateral trade, and hence deepens (bilateral) division of labour or makes more product varieties available. Scope for increased division of labour results from the exploitation of differences in economic structure deriving from Ricardian (technological) or Heckscher-Ohlin (factor endowment) comparative advantages. Since Ricardian comparative advantages are not tangible, we will focus in the following on relative endowments, as visible from the import and export structures of Denmark and potential partners.

Being a small country, as Denmark was at least since the loss of the Duchies in 1864, involves on the one hand from a 'new trade theory' perspective that anticipated positive effects of bilateral trade opening due to economies of scale are relatively low for potential partners. From a more traditional point of view one might argue that nineteenth-century trade was more determined by division of labour and inter-industry trade than by 'new trade theory' which was formulated to explain the growing intra-industry trade of developed countries since approximately 1960 (Persson, forthcoming). Hence, political-economy considerations might provide better insights:

[4] Gerlach, 1911, p. 156-162: „Nur einmal in dieser ganzen Zeit zeigte man sich geneigt, von dem Prinzip der Zollautonomie abzugehen, während man im Jahr 1867 einem von Frankreich angebotenen Handelsvertrag mit bestimmten Tarifsätzen für verschiedene Waren, insbesondere Galanteriewaren, Seide, Weine, abgelehnt hatte: Dänemarks Ausfuhr nach Frankreich war sehr gering, andererseits war das finanzielle Interesse Dänemarks an dem Zolle auf diese Artikel (man denke nur an die Kriegssteuer) zu groß."

[5] Scharling (1905, p. 569): "Der er næppe noget andet Land, der saa bestemt som Danmark har vægret sig ved at afslutte Tariftraktater for a kunne bevare sin Frihed til at forandre sine Toldsatser efter Forgodtbefindende, - og der er næppe noget andet Land, der saa lidet har benyttet sin Frihed til at forandre Toldsatserne." (cf. Scharling 1892, p. 275)

Treaty-making involves large fixed costs of information-gathering, consultation of parliamentary bodies and appeasement of lobby-groups, etc.[6] Additionally, the inclusion of the unconditional most-favoured nation clause implies that bilateral preferences made once will transmit automatically to subsequent treaty partners. Both together suggest that governments who are concerned about (at least) balancing additional imports with additional exports resulting from bilateral preferences will seek cooperation with countries of equal size first and avoid making preferences to smaller countries which later might fall to bigger ones. Small countries like Denmark who provided a relatively limited outlet, are therefore in a relatively unfortunate position.[7]

Given that the governments of the time were neither in possession of national account data nor of econometric techniques to calculate trade potentials, they might have gained insights from population statistics, or, more likely in the light of the suggested political-economy explanation, from their own trade statistics, which provided information on the most important outlets for domestic exports. Table 1 depicts the share of exports that went to Denmark for the most important European countries in 1857, according to their statistics, and contrasts them with the corresponding shares of Danish exports to these countries according to Danish statistics. From this, it is suggested that the United Kingdom, Sweden, and Norway were 'large markets' for Denmark, but of these, only Norway seems to have found that Denmark was an important market itself.[8] Nevertheless, to see whether Scandinavian integration would have made sense, we have to take into account other points like potential for division of labour and discrimination suffered through autonomous and preferential treaties.

[6] See for example the credit program and the large industrial inquiry Napoleon III offered to French industry in the context of the Cobden-Chevalier treaty of 1860 (Dunham 1930).
[7] Lampe (2008) elaborates on this based on Pahre (2008), Horn and Mavroidis (2001), and others.
[8] Also, an important amount of trade was with Germany, but most of it was with free ports which serve mostly as points of transshipment.

Table 1: Denmark and its trade partners

Country	Share of Exports to Denmark (%)	Share of Danish Exports (%)	Share of Exports Denmark, Slesvig, and Holstein (%)
Austria-Hungary	0.01	see note	see note
Belgium	0.13	0.15	0.57
France	0.12	0.87	0.54
German Zollverein	n/a	8.33 (incl. ports), 2.98 (only Prussia, Hannover, Lauenburg)	41.76 (incl. ports), 2.54 (only Prussia, Hannover, Lauenburg)
Italy (any territory)	0	see note	see note
Netherlands	0.45	3.48	3.78
Norway	17.00	18.25	9.16
Portugal	0.40	0	0
Russia & Finland	3.16	1.20	0.70
Spain	0.45	0.06	0.03
Sweden	3.38	12.89	6.57
Switzerland	n/a	n/a	n/a
United Kingdom	0.73	43.78	30.34

Sources: As in Lampe (2009b), appendix 3.

Note: For Switzerland and the Zollverein no useful data was available for contemporaneous observers, while for the Russian Empire the data has been taken from British consular reports which were compiled based on Russian and Finnish statistics. For Portugal, exports via Porto and Lisbon have been summed up, as no proper export statistics existed for that year. For Austria-Hungary, the share of seaward exports given in the proper statistics has been multiplied with the share of exports to Denmark in the statistics of the most important port, Trieste. For Denmark, all European ports on the Mediterranean and the Black Sea are summed up in one position whose share is 0.03% for Denmark proper, and 0.02% for the customs area.

This would mean that integration with large and nearby trading partners (like the UK in the case of Denmark) in principle should be more desirable than with remote and insignificant ones (say, Greece). The fact that the evolution of the Cobden-Chevalier network took place in Europe, while other institutional arrangements (the so-called reciprocity clause, see Bairoch 1989, p. 39) prevailed in the Western Hemisphere, justifies that in the following we focus on Europe.[9] Admittedly, Heckscher-Ohlin gains from trade were also conceptually unknown to contemporaneous observers and decision-makers. Nevertheless, we can assume that they were

[9] Additionally, except for the Danish Virgin Islands (St. Thomas, St. John, and St. Croix), the Americas were completely unimportant in Danish foreign trade, according to Danish trade statistics for the 1860s.

aware of the types of goods they were producing and exporting domestically, and for which goods domestic demand exceeded domestic supply, leading to importation. So, although the exact potential benefits of division of labour and difference in factor endowments were probably unknown, governments could assess “revealed comparative advantages” from the import and export structures of their own country, and of others.

Table 2 shows Denmark’s 25 most important export and import commodities in the first year after the war of 1864. It adds information on the top three sources of imports and destinations of exports.

Table 2a: Denmark’s main exports (1865, Mio. Rigsdaler)

Item	Value	Exported to
Barley, not milled	10.5	England (53%), Norway (30%), Slesvig/Holstein (10%)
Butter	4.0	England (63%), Norway (20%), Slesvig/Holstein (11%)
Wheat, not milled	3.5	England (68%), Slesvig/Holstein (15%), Belgium (6%)
Oats, not milled	2.9	England (81%), Slesvig/Holstein (13%), Netherlands (2%)
Rye, not milled	2.6	Slesvig/Holstein (32%), Sweden (21%), Netherlands (21%)
Bacon and ham (Pork)	2.0	England (55%), Norway (16%), Sweden (12%)
Wool	1.8	England (66%), Sweden (19%), Norway (6%)
Oxen, bulls and cows	1.4	Slesvig/Holstein (67%), England (21%), Lübeck (5%)
Hides and skins, raw (not tanned)	1.4	England (35%), Slesvig/Holstein (26%), Sweden (16%)
Seeds, Rapeseed and other oil seeds	1.3	Prussia (30%), Slesvig/Holstein (16%), Netherlands (12%)
Wheat, milled (flour)	1.0	Sweden (60%), England (15%), Norway (9%)
Horses	1.0	Slesvig/Holstein (57%), Hamburg (36%), Lübeck (2%)
Seeds, other (neither oil nor linseed)	0.8	Sweden (95%), Norway (2%), Slesvig/Holstein (1%)
Barley, milled (flour)	0.7	Iceland (36%), Norway (27%), Sweden (16%)
Pigs	0.4	Slesvig/Holstein (73%), Lübeck (13%), Norway (6%)
Train oil, cart grease, dubbing, etc.	0.4	Sweden (40%), Prussia (35%), Slesvig/Holstein (13%)
Meat, sausages, entrails, and tongues	0.4	Norway (68%), Sweden (6%), England (6%)
Peas, not milled	0.3	England (41%), Slesvig/Holstein (21%), Norway (11%)
Spirits, which can be graded (Rum, Brandy, etc.), in casks	0.3	Iceland (25%), Sweden (13%), England (8%) [“other destinations” 34%]
Oil/Linseed cake	0.3	England (85%), Sweden (10%), Prussia (4%)
Stones, raw (excl. millstones and grindstones), and articles thereof	0.2	Slesvig/Holstein (63%), Lübeck (9%), Sweden (8%)
Rye, milled (flour)	0.2	Sweden (31%), East Indies/China/South Sea (26%), Norway (13%)
Waste, other (neither oil cake nor rags)	0.2	England (66%), Sweden (12%), Hamburg (9%)
Bones and teeth, raw, complete, crushed, grinded	0.1	England (95%), Sweden (3%), Netherlands (1%)
Seeds: Linseed	0.1	Slesvig/Holstein (68%), Norway (8%), Danish West Indies (7%)

Table 2b: Denmark's main imports (1865, Mio. Rigsdaler)

Item	Value	Imported from
Textile manufactures (including yarns), of vegetable fibres	5.6	England (57%), Hamburg (15%), Lübeck (14%)
- Cotton textiles	*2.6*	
- Linen textiles	*1.3*	
- Cotton yarns	*1.2*	
- Linen yarns	*0.5*	
Textile manufactures (including yarns) of animal fibers	5.5	Lübeck (33%), England (24%), Hamburg (21%)
- Woolens and worsteds	*5.2*	
- Woolen and worsted yarns	*0.3*	
Wood, other (neither oak, boxwood, pockwood nor black popular), raw	4.9	Norway (60%), Sweden (33%), Prussia (4%)
Sugar, molasses, and syrup	2.5	Danish West Indies (29%), Foreign West Indies (23%), England (19%)
Wood, wrought	2.0	Sweden (58%), Prussia (12%), Slesvig/Holstein (12%)
Silk and Silk wares	1.5	Lübeck (44%), Hamburg (34%), Slesvig/Holstein (4%)
Oils and fatty oils (elaines)	1.1	Russia (28%), Lübeck (16%), England (15%)
Train oil, cart grease, dubbing, etc.	0.8	Greenland (51%), Iceland (33%), Belgium (7%)
Iron and steel, other, wrought (neither bars nor rails, plates, hoops, nails, spikes, anchors or chains)	0.8	England (71%), Lübeck (7%), Slesvig/Holstein (7%)
Iron and steel, hoops and bars	0.8	Sweden (50%), England (46%), Slesvig/Holstein (1%)
Seeds, other (neither oil nor linseed)	0.6	Prussia (28%), Lübeck (22%), England (22%)
Hides and skins, raw (not tanned)	0.5	Slesvig/Holstein (24%), England (22%), Sweden (18%)
Horses	0.4	Sweden (84%), Slesvig/Holstein (11%), Iceland (3%)
Rye, not milled	0.4	Prussia (75%), Russia (14%), Slesvig/Holstein (5%)
Glassware	0.4	Belgium (69%), Lübeck (7%), Netherlands (6%)
Wool	0.4	Iceland (53%), England (17%), Slesvig/Holstein (13%)
Seeds: Linseed	0.4	Russia (47%), Sweden (18%), England (17%)
Hides and skins, wrought (tanned, tawed, etc.)	0.3	Slesvig/Holstein (42%), Lübeck (26%), Hamburg (13%)
Oxen, bulls and cows	0.3	Sweden (68%), Slesvig/Holstein (32%), England (0.2%)
Fish: Salted herring	0.3	Norway (98.8%), Sweden (0.4%), Prussia (0.2%)
Fish: Dried or salted	0.3	Iceland (46%), Færøer (42%), Norway (10%)
Tanning substances	0.3	Sweden (53%), Norway (26%), Prussia (10%)
Wheat, not milled	0.2	Sweden (79%), England (8%), Prussia (7%)
Cheese	0.2	Slesvig/Holstein (62%), Netherlands (30%), Lübeck (3%)
Iron and steel: Rails, ties, and chairs	0.2	England (86%), Netherlands (6%), Slesvig/Holstein (4%)

Source: Values have been calculated based on the average quantities of imports for domestic consumption and exports of domestic production, respectively, in the fiscal years 1864-65 and 1865-66 from Statistisk Bureau (1865, 1866); as Danish authorities did not report values or prices, these have been valued by prices for imports of corresponding items in Hamburg in 1865 (Handelsstatistisches Bureau 1866). Items of wood are potentially overvalued in the export tables due to guesstimates on the internal composition of broad items made for pricing. Trade statistics in neither fiscal year report detailed accounts on textiles, the breakdown in Table 4b was made based on sub-category shares in imports of the corresponding items reported for 1863.

We see that, rather unsurprisingly, Denmark was an exporter of agricultural products to an overwhelming extent. Most of these exports were to England and to neighbouring countries. Imports consisted mainly of manufactures, especially textiles and iron wares, imported from England and through German ports, as well as certain raw materials and food items mostly entering from neighbouring countries, Danish possessions (sugar from St. Thomas, train oil from Greenland, and fish and wool from Iceland), and in the case of oils and oilseeds, Russia. Another point that becomes visible from this overview is that information on origin and destination of trade flows was far from perfect, since the German ports of Hamburg and Lübeck figure as very prominent trading partners for Denmark, which were surely not the actual places of production and consumption for most goods sent too and from them.[10]

But if we believe the contemporary information, Denmark might be an interesting treaty partner for Sweden and Norway, especially concerning wood and fish (salted herring). Another candidate might be England, although the English market was far more important for Danish agriculture than the Danish for British industrial producers. In any case, a bilateral trade agreement would have only made sense if bilateral trade was harmed by high tariffs and/or preferential market access for third-country producers in Denmark and its potential partner markets, i.e. substantial (and discriminatory) barriers to trade.

Tariff barriers to trade

We turn now to the possibility of tariff reductions. There were no discriminatory tariffs in Denmark, except preferential rates for certain woods from Finland for which a non-unconditional MFN treaty concluded with the Russian Empire in 1831 had established a rate of 3 rigs(bank)daler per commerce load.[11] So, discrimination on the Danish market was probably

[10] Also trade with England and Schleswig-Holstein might include flows of commodities traded through their ports (London, Liverpool, Altona, etc.).

[11] This preference was formally revoked on January 1, 1896 (Gerlach 1911, 157).

not a problem for its trading partners. However, certain tariffs were relatively high, especially those established for revenue purposes. Table 3 shows ad valorem equivalents of Danish specific tariffs on articles that were either important export articles of the European countries that were central to the treaty network evolving around Denmark, or important in Danish imports and exchange with direct neighbours (i.e. sugar and salted herring).[12]

Table 3: Ad valorem equivalents of Danish tariff rates (per cent, 1865)

Category/item	
Wheat	0.0
Rye	0.0
Meals and Flours	0.0
Wine	12.9
Spirits	31.5
Sugar	24.3
Salted herring	3.9
Raw hides and skins	0.0
Wrought hides and skins (leather, etc.)	6.3
Leather wares	4.0
Wood and timber, unwrought (except from Finland)	3.4
Wool	0.0
Wollen yarn	4.4
Woolens and worsteds	12.7
Cotton yarn	3.2
Cottons	9.5
Linen yarn	4.7
Linens	10.3
Silk, Silk wares, and other high-value textiles	10.4
Glassware	9.5
Pig iron	0.0
Bar iron and steel	3.6
Ironware (rough)	7.7

Source: Item-specific tariff revenues in 1864-65 and 1865-66 from Statistisk Bureau (1865, 1866) divided by values as calculated in notes to Table 4. For yarns and cloth, items in a broader category have been weighted by special import shares for the fiscal year 1865-66 reported in Statistisk Bureau (1870; Statistics for 1869-70, p. X), assuming

[12] The tariff rates given in Table 3 are not identical to the ones used in the calculations reported in Tables 5 and 6, for two reasons: Lampe (2008) uses French benchmark prices, not Hamburg prices as done here, and the rates calculated here weight items in a category by Danish import shares, not by uniform "average" trade shares in Europe, as done by Lampe (2008). For example, raw silk, has a far lower weight in the silk and silk wares aggregate using Danish data, because Denmark seems to be a final product importer to a higher extent than other European countries. The 1864-65 and the 1865-66 tables both only report total imports of 2 pounds, i.e., 1 kg, of raw silk.

that 25% of those textiles of vegetable fibres which are not identified as linens were of flax, hemp or linen. Calculations for wine, spirits, and sugar exclude *Krigsskat* (war tax surcharge).

The results show that in general tariffs were not very high. Tariffs on foodstuffs and industrial raw materials were essentially zero, except for a very few items (like fish, or – not reported here – cheese).[13] Tariffs on manufactured goods were in the ten percent range common in Europe in this period (see Lampe 2008, Table 13), as were the 3 to 6 percent equivalents on semi-manufactures. The most striking exception to the "moderately low tariffs" rule were sugar and spirits, which were taxed as luxury goods, and whose tariffs to approximately two thirds complimented internal production taxes. Additionally, for these commodities, as well as for wine, coffee, tea, tobacco and tobacco surrogates, war finance surcharges (*Krigsskat*) in the range of 50% were established in 1864,[14] and maintained for several decades. Hence, producers of the commodities subject to war surcharges should have been the most interested in reducing the effective tariffs on these items. Sugar, tobacco, tea, and coffee were not produced to a large extent in Europe, and colonial producers had relatively little bargaining power. However, wines, spirits, and liqueurs were important French export products, and important items in French treaty making since the Cobden-Chevalier treaty (Lampe 2009a, Lampe 2009b, Nye 2007, pp. 100-105, Marsh 1999, etc.), not only with Britain, but also with smaller countries like the Netherlands (Smit 1921), Switzerland (Brand 1968) and Sweden (Fahlbeck 1892), where French negotiators attempted to negotiate even for changes in internal taxation schemes, since they affected effective tariff rates. The French treaty initiative outlined in the introduction has to be seen in this context. The Danish response, a "no" based on revenue dependence on tariffs and surcharges on wines, spirits, and the other products, is perfectly understandable at first sight. But still, the budget perspective does not tell the full story about potential benefits of such a treaty or treaties with other countries mentioned above. In particular, failure to prevent domestic exporters from suffering discriminatory tariff rates abroad might cause harm to the

[13] Wood is a heterogeneous category, in which oak, boxwood, pockwood, black popular and firewood were admitted free of duty, while other sorts were subject to duty per commerce load or cubic foot.

[14] „Kriegssteuer auf den Brennereibetrieb und die Waaren-Einfuhr in Dänemark", Preußisches Handels-Archiv 1864/I, 187-188.

entire economy (and, consequently, the government budget), as securing of equal or preferential market access might help economic recovery after the war, and long-term development.

Table 4 addresses the question as to whether Denmark suffered high tariffs abroad. As we can see, especially the important Scandinavian trading partners did not levy substantial tariffs on Danish products. The only countries in which Danish products were subject to high duties (and even prohibitions) were the relatively small and remote markets of Portugal and Spain. Furthermore, it seems unlikely that e.g. Spain would have revoked its prohibition on barley imports due to bilateral negotiations with Denmark. Russia had relatively high tariffs on grains and bacon and ham, but was effectively more a provider of these commodities to Denmark than vice versa.

Table 4. Ad valorem equivalents of duties on Danish export products in foreign countries

	Austria-Hungary	Bel-gium	France	Zoll-verein	Italy	Nether-lands	Nor-way	Por-tugal	Russia, Poland, Finland	Spain	Swe-den	Swit-zer-land	UK
Barley	4.6	3.4	1.7	0.0	2.9	0.9	>0.1	12.5	8.5	prohibited	0.0	1.7	3.6
Butter	4.3	1.8	1.0	2.4	0.7	0.0	0.0	27.2	5.8	36.3	0.0	0.5	0.0
Wheat	7.2	2.7	4.0	0.0	2.3	0.6	>0.1	14.9	8.1	prohibited	0.0	1.4	2.8
Oats	4.7	3.5	1.7	0.0	3.0	1.5	>0.1	12.7	9.7	prohibited	0.0	1.7	3.6
Rye	7.9	3.9	1.9	0.0	3.3	0.9	>0.1	17.7	8.2	prohibited	0.0	1.9	4.1
Bacon and Ham	7.2	0.7	0.3	2.5	6.2	1.3	0.0	24.8	14.5	48.7	0.0	4.2	0.0
Wool, raw	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.1	1.3	25.9	0.0	0.2	0.0
Oxen, Bulls, and Cows	1.6	0.2	0.4	1.8	0.0	0.0	0.0	0.4	0.0	5.7	0.0	0.1	0.0
Hides and skins, raw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	9.6	0.0	0.0	0.0
Rapeseed	>0.1	0.0	0.1	0.0	0.1	>0.1	>0.1	0.1	0.0	>0.1	0.0	>0.1	0.0
Weighted Average	4.5	2.4	1.5	0.6	2.3	0.7	>0.1	13.6	7.0	22.7	0.0	1.4	2.2

Source: Specific tariff rates from Hübner (1866) in local currency converted into GBP using (Schneider, Schwarzer and Zellfelder 1991 and Nelkenbrecher 1867) divided by prices for imports from Denmark in British foreign trade tables (Board of Trade 1866). "Oxen, Bulls, and Cows" is the average of separate calculations for Oxen and Bulls, and Cows. "Hides and skins, raw" is the average of separate calculations for wet (salted) and dry skins. Weighted averages have been calculated based on Danish export values in 1865 as underlying Table 4a. The items in this table amount to more than 80 percent of total Danish exports as given in Hansen (1984, table 11). The weighted average of Spanish tariffs has been calculated by substituting prohibitions with 1.5 times the highest tariff in another country (i.e., Portugal).

Was Denmark discriminated against? Of the countries in Table 4, only Austria-Hungary, France, Italy, and Switzerland actually applied discriminatory tariffs in 1865, which were based on preferential rates for treaty partners, and non-preferential ("autonomous") rates for non-treaty partners. The United Kingdom, the Netherlands, Sweden and Norway, Belgium, and the Zollverein had generalised their preferential rates by the end of 1865, so that they also applied to Denmark, although Denmark had suffered discrimination most importantly in Belgium between 1861 and the conclusion of the Danish-Belgian Treaty of 1863. Russia and Spain had concluded treaties before 1865, but not granted any preferences in them, so that the treaties only assured its partners future non-discrimination. Portugal concluded its first treaty only in 1866, in which it agreed some preferential rates for imports from France, which were not generalised afterwards.

The discrimination suffered by Denmark in Austria-Hungary was probably the highest, since all grains, meals and flours entered free of duty for treaty partners versus the specific rates paid by Denmark underlying the ad valorem equivalents in Table 4. A small discrimination was also given in the rates for living horned cattle, while the rates on hides, skins, and meat were the same for all countries.[15] In France, tariffs on grains, meals and flours were not bound by international treaties, and except for fresh meat, tariff rates in 1865 were the same for treaty-parties and non-treaty parties for Denmark's most important export products.[16] Switzerland had discriminatory tariffs on important Danish products, i.e., all sorts of butter and meat (incl. bacon and ham), which was probably an incentive to conclude the Swiss-Danish treaty of 1875. Italy, which had a treaty with Denmark since 1864, applied discriminatory tariffs on fresh butter, fresh meat, dyed wool, and oilseeds.[17]

[15] Preferences were given to certain imports over land borders with neighboring Italian places to facilitate exchange between places close to the border.

[16] However, discrimination arose from additional duties on imports in non-French ships for non-treaty partners. These were important for the shipping sector and a likely reason for Norwegian participation in the Franco-Swedish treaty of 1865 (Fahlbeck 1892). Discrimination at the commodity level became possibly more important afterwards: Gerlach (1911, p. 160) mentions that at one point in time specific duties on salted pork from Denmark were 4.50 Francs per 100kg higher than for treaty partners. In 1892, Denmark was granted MFN status by France (Gerlach 1911, 161).

[17] However, the much more important items, salted butter and salted and smoked meat, as well as all other products of Table 5 received equal treatment wherever they entered from.

This overview suggests that Denmark would not really have been able to gain (in terms of additional exports) from concluding treaties with other countries. It concluded pure MFN treaties with Belgium, Italy, and Switzerland, where it probably suffered most discrimination, although for a relatively small trade volume, and lost nothing, because it only promised future non-discrimination. Treaties with countries that applied high tariff rates on important items for Danish export did not actually present important outlets for Danish production. A treaty with France seems to have threatened loss of revenue and internal taxation capacity, while actual discrimination was relatively low. This was most importantly the case because Denmark was not an important exporter of manufactured goods, on which France still applied high duties and prohibitions to "non-co-operators".[18] Denmark's most important trade partners, the United Kingdom and the German states, had relatively low and non-discriminatory tariffs, and the Zollverein and Sweden both lowered tariffs in 1865. Because of this Denmark enjoyed remarkably low barriers to the export of her agricultural products. (Hansen 1984, p. 184) When Germany autonomously reintroduced grain duties in the late 1870s, Denmark had already started a reorientation of its agriculture towards dairy products, and even if this had not been the case, the negotiation mass of Denmark in bilateral talks with Germany would likely not have been sufficient to make the neighbour reconsider its steps. Closure of the German market was not answered with a tariff war, but with a further movement towards England.

Of course, Britain, where imports of Danish manufactures came from, might have pressed for Denmark to lower the tariffs on these products. But there is no evidence that anyone in Britain and Denmark ever contemplated making a treaty. After all, there were older treaties concluded in 1661, 1670, and 1824, which actually referred to non-discrimination in shipping and questions of "freedom of commerce", but were mutually interpreted as implying MFN treatment, since both countries did not apply discriminatory tariffs anyway (Gerlach 1911, p. 158). Besides, Denmark could probably rely on Britain not to become protectionist.

[18] Of course, France could have threatened to impose discriminatory duties especially on Danish products, but this would have involved the enacting of specific rules of origin and certification procedures, which would have caused control costs.

4. Were Danish trade policy choices rational? A statistical assessment

To investigate whether the considerations made in the preceding paragraphs are in line with existing quantitative literature and theories on international co-operation, we make use of estimates of the determinants of cooperation in the Cobden-Chevalier network between 1858 and 1875 presented by Lampe (2009b). Based on Pahre's theory of endogeneous trade policy cooperation and related theories on the neo-classical "economic fundamentals" (distance, factor endowment, market size) of preferential treaty-making (Baier and Bergstrand 2004) and systemic international interaction due to trade diversion fears (dependence of later PTAs on earlier, Baldwin 1995), he estimated a logistic regression model with the aim of explaining the determinants of mid-nineteenth century bilateralism. Table 5 shows the results of his exercise for his favoured 'eclectic approach'.

Table 5: Determinants of bilateral MFN trade treaties, 1858-1875

Variable	Coefficient (robust p-value)
Natural	1.14 (0.002)
dLLR	0.44 (0.082)
GDPs	0.23 (0.042)
dGDP	-0.67 (0.000)
$MinTariff_{-1}$	3.67 (0.008)
$MinPolity2_{-1}$	0.17 (0.000)
$MaxPartnerPTAcoverage_{-1}$	2.56 (0.003)
Time	1.52 (0.004)
$Time^2$	-0.15 (0.008)
$Time^3$	0.005 (0.010)
Constant	-4.81 (0.148)
Pseudo-r^2	0.18
Log-pseudo-likelihood	-160.70
N	988

Source: Lampe (2009b, Table 2).

Note: Dependent variable: *Treaty* (yes=1, no=0) between a dyad (e.g., Spain-Denmark) in a given year; *Natural*: inverse of log(distance); *dLLR*: difference of log land-labour ratios in 1857; *GDPs*: sum of log GDPs in 1857; *dGDP*: difference in GDPs; $MinTariff_{-1}$: lagged bilateral minimum of both countries' tariff rates in 21 commodity groups, weighted by the others' export shares in these groups; $MinPolity2_{-1}$: lagged bilateral minimum of both countries' *Polity2* scores (autocractic=low, democratic=high); $MaxPartnerPTAcoverage_{-1}$: bilateral maximum of each countries' treaties in force in the preceeding year multiplied by treaty partners' import shares (excl. of exports to dyad partner) in 1857; *time*, $time^2$, $time^3$: linear, quadratic, and cubic time trends; for details see Lampe (2009b, appendix 1 and 3).

These results show that bilateral welfare optimization-led trade-creation considerations interacted with strategically oriented political-economy forces. On the one hand, bilateral welfare maximisation resulting from a potentially large common market formed by two partners of equal size and comparably low transport costs (distance) were important.[19] However, also high (partner) tariffs and the amount of previous treaties concluded played an important part, which makes clear that there was an important element of strategic interaction in the network. Notably, and importantly for the case of Denmark, the difference in market sizes is negatively signed, reflecting the fact that large countries have little to gain from integration with small countries, while the latter have presumably lower bargaining power to 'force' the former to cooperate.

We can use these figures to calculate the predicted odds for treaty conclusion for every dyad and year involving Denmark by

$$\mathrm{logit}(p) = -4.81 + 1.14\ \mathit{Natural} + 0.44\ \mathit{dLLR} + 0.23\ \mathit{GDPs} - 0.67\ \mathit{dGDP} + 3.67\ \mathrm{Min}(\mathit{Tariff}_{-1})$$
$$+ 0.17\ \mathrm{Min}(\mathit{Polity2}_{-1}) + 2.56\ \mathrm{Max}(\mathit{PartnerPTAcoverage}_{-1}) + 1.52\ \mathit{Time} - 0.15\ \mathit{Time}^2 + 0.005\ \mathit{Time}^3$$

and

$$p = \frac{\mathrm{e}^{\mathrm{logit(p)}}}{1+\mathrm{e}^{\mathrm{logit(p)}}}$$

Table 6 presents the results of this exercise. We see that Denmark did actually conclude more treaties than the model would predict, and that the model scores fairly well in the sense that the countries Denmark concluded treaties with are those with the highest (maximum) odds, Belgium, Switzerland, and Italy. Only for Germany do we get values similar to those, but slightly below the maximum for Italy. This suggests that non-cooperation was certainly not irrational, and in fact seems to have been the optimal policy decision.

[19] Note, however, that trade volumes or trade shares had no consistent and robust effect on treaty conclusion probability. This suggests that the mechanisms might have been more complex than outlined above.

Table 6: Maximum predicted probabilities of treaty-making for Denmark per (potential) partner

Potential Partner	Maximum odds (*p*) (and year)
Austria-Hungary	0.13 (1875)
Belgium	0.37 (1864)
France	0.12 (1875)
Germany	0.21 (1875)
Italy	0.23 (1875)
Netherlands	0.09 (1875)
Portugal	0.02 (1875)
Russia	0.02 (1875)
Spain	0.06 (1875)
Sweden & Norway	0.08 (1875)
Switzerland	0.37 (1875)
United Kingdom	0.06 (1875)

Source: Calculated from the data underlying Lampe (2009b), using the coefficients of Table 5.

In comparison to the sample mean, dyads involving Denmark had slightly smaller distances (Copenhagen is relatively centrally located), smaller differences in the land-labour ratio, smaller common markets and higher differences in market sizes. The bilateral customs duty minimum was below average (10.0% vs. 14.2% over the 21 commodity groups underlying Lampe 2009b), the bilateral minimum level of democracy was higher, and the maximum coverage with previous treaties was lower. Given the signs of the coefficients in Table 1, only the relatively central location and the relatively high policy score for dyads involving Denmark were positive for treaty-making. On the other hand, regarding bilateral welfare optimization, the observation that Denmark offered a relatively small market both decreased the potential use of integration and the interest of countries with larger markets to cooperate. The same is true for its medium land-labour ratio which seems to offer a smaller opportunity for Heckscher-Ohlin gains from integration. Finally, the fact that Denmark had relatively low tariffs *and* few treaties meant that bilateral discrimination and trade diversion fears were not relevant.

5. Conclusion

Denmark's non-participation was thus to be expected and seems to have been an optimal policy outcome. Her main trading partners, such as the UK, were free-traders in agricultural goods anyway, and although other countries, such as France, might have wished for a reduction in her tariffs on alcohol, for example, they had little to bargain with and besides, Denmark needed the revenue.

A question for future work remains, however. We have now explained Denmark's decision not to participate in the Cobden-Chevalier network. What remains to be answered, however, is the question of whether the structure of her protection was rational. As noted above, many scholars have assumed that it was not. In the light of this study, however, we might be more inclined to reconsider their conclusions.

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