

From the Zollverein to the Economics of Regionalism

Switgard Feuerstein*

University of Heidelberg and GEP, University of Nottingham

JEL F15; N93; B00

Zollverein; customs union; economics of regionalism; European integration; preferential trade; sequencing.

Received: 05.02.2012

Revision received: 12.11.2012

Accepted: 25.01.2013

Summary

The paper is a contribution to the special issue “150 years Journal of Economics and Statistics”. The starting point is a series of articles on the nature and the history of the German Zollverein by Gustav Fischer in the early volumes of the Journal. Both the perception of the Zollverein and the economics of preferential trade are traced over time. The focus is on the analogies between the Zollverein and the European Community and on the expansion of the Zollverein in view of the modern theory of sequencing in forming a trade bloc.

1 Introduction

When Viner (1950) wrote his seminal study *The customs union issue*, the topic was widely discussed and there were various plans for economic integration, but no notable customs union existed at that time. The main historic example of a customs union of sovereign states was the German Zollverein, a union of most German states realising free trade among each other and having a common tariff system applied to imports from outside countries from 1834–1871¹. The early volumes of the *Jahrbücher für Nationalökonomie und Statistik* contain a series of articles on the nature of a customs union based on the history of the German Zollverein authored by Gustav Fischer (1864, 1866, 1867).

In contrast to the situation in 1950, the number of customs unions and free trade areas has recently exploded, and nearly 300 of such preferential trade agreements (PTAs) are currently in force and many more are negotiated or in the stage of planning (WTO 2011). Accordingly, research on preferential trade has increased, and the WTO World Trade Report 2011 focuses on PTAs as a special theme. The increase of PTAs is often referred

* I thank two anonymous referees for helpful comments which have improved the paper. Moreover, I am grateful to Marcus Müggenburg of the Archive of the Friedrich Schiller University Jena for providing me with information on Gustav Fischer.

¹ The Zollverein was reformed in 1866/67, and after German unification in 1871, the German Reich was in charge of trade policy, although the Zollverein treaties formally remained in force.

to as regionalism, a term that is common but not precise, as countries forming a PTA need not necessarily be geographically close to each other.

This contribution to the anniversary issue of the *Jahrbücher* aims at linking Fischer's (1864, 1866, 1867) arguments developed in view of the Zollverein to the modern discussion of preferential trade agreements. After introducing Gustav Fischer and his articles in section 2, both the perception of the Zollverein and the literature on the economics of preferential trade are traced over time. Since there exist excellent surveys on the literature of regionalism since the seminal book of Viner (1950), the survey focuses on early discussions and in particular on the recent theory of sequencing when forming a trade bloc, which will subsequently be applied to the Zollverein.

Corresponding to Fischer's contributions, two topics are selected to be discussed in more detail. The Zollverein, which preceded the political unification of Germany, has long been discussed as a model for the European Community. Section 4 takes up this point in view of Fischer's second article which deals with the nature of a customs union and the institutions of the Zollverein. Fischer's first article contains a history of the Zollverein which emphasises the sequence of accession and often points out how the joining of one state affected the situation of others and their decision and eventual negotiations to join the Zollverein. Thereby, Fischer's work is related to the modern theory of sequencing, that includes Baldwin's (1995) domino theory and the theory of negotiating free trade by Aghion et al. (2007). In section 5, the history of forming and expanding the Zollverein is recapitulated in view of the modern theory, making use of recent work of Ploeckl (2010). Moreover, possible domino effects in the Cobden-Chevalier network of bilateral commercial treaties in the nineteenth century are briefly discussed. Finally, section 6 concludes the paper.

2 Gustav Fischer and the Zollverein

2.1 Gustav Fischer and his articles

The starting point of the paper is a discourse written by Gustav Fischer in the first volumes of the *Jahrbücher für Nationalökonomie und Statistik* with the title "Ueber das Wesen und die Bedingungen eines Zollvereins" (On the nature and the conditions of a customs union), published between 1864 and 1867. Gustav Fischer² (1803–1868) studied law and political sciences (Rechts- und Staatswissenschaften) in Jena and Göttingen, and he became professor at the University of Jena³ in 1834. He was one of the two founders of the Department of Political Sciences (Seminar für Staatswissenschaften)⁴ at the University of Jena in 1850 and one of its two directors. From 1860 onwards, the second director was Bruno Hildebrand (1812–1878), the founder and editor of the *Jahrbücher*. In 1848/49, both Gustav Fischer and Bruno Hildebrand, who at that time was a professor at the university of Marburg, were members of the Frankfurt national assembly.

² The information on Gustav Fischer was provided by Marcus Müggenburg of the Archive of the Friedrich Schiller University Jena.

³ Both Jena and Buttstädt, the town where Gustav Fischer was born, belonged to the Duchy of Saxe-Weimar-Eisenach, which was one of the Thuringian principalities.

⁴ On the ground of this experience, Fischer (1857) advocates the formation of departments of political sciences. According to Fischer, the "Staatswissenschaftliche Seminar" in Jena was the only one at a German university at that time.

Professor Gustav Fischer should not be confused with the founder of the Gustav Fischer Verlag in Jena, who was more than 40 years younger (1845–1910) and born in Hamburg. After 1953, the *Jahrbücher* were published in the Gustav Fischer Verlag, which by that time had moved to Stuttgart.

The German Zollverein was formed in 1834 as a true customs union of German sovereign states. It had predecessors, and it gained members in the course of time. Prussia was the dominant country, always having more than 50 % of the population of the Zollverein. Eventually, the German Reich was formed in 1871 and the central government became responsible for trade policy.

In his articles, Gustav Fischer aims at investigating the nature and the conditions of a customs union in general, as in spite of the extensive literature on the German Zollverein existing at that time, this question had hardly been discussed (Fischer 1864: 317 f.). His discourse consists of two articles, each of which appeared in two parts in different issues and the second one even in two different volumes of the *Jahrbücher*. Altogether, the articles have more than 250 pages, which amounts to the size of a book.

The first article has the subtitle “Die Idee eines deutschen Zollvereins und ihre Ausführung geschichtlich entwickelt” (The idea of a German customs union and its implementation considered historically, vol. 2, 1864, 317–385 and 397–432) and contains a thorough treatment of the genesis of the German Zollverein and its development, in particular its various enlargements. In his introduction, Fischer (1864) points out that customs unions had only emerged among German states in the nineteenth century, and hence such a historical part of the discourse is worth the effort to understand the nature of a customs union. Indeed, in a review on new publications about the Zollverein in the *Preussische Jahrbücher* (1865), Fischer’s (1864) article is described as a valuable and clear contribution, that is the first complete history of the Zollverein written with large conscientiousness and exhaustive use of all published sources.

The subtitle of the second article is “Das Wesen eines Zollvereins und der Unterschied desselben von anderen Arten der Zollgemeinschaft unter mehreren Staaten” (The nature of a customs union and the difference to other kinds of customs communities among several states, vol. 7, 1866, 225–304, and vol. 8, 1867, 252–350). This article characterises and discusses the concept of a customs union (Zollverein) and distinguishes it from other kinds of common customs areas, namely a common tariff system within a federal state and a customs accession (Zollanschluss), where one state joins a customs area without receiving a vote on the future development of the tariff system. In the discussion on the Zollverein, there had been confusion on these concepts, and Roscher (1870: 207) writes that it is the merit of Fischer (1866) to be the first to discuss the difference between a customs union and a customs accession.

Fischer intended to write a third article on the conditions for the formation and the viability of a customs union, as announced in the title of the series. Moreover, he wanted to write on the role of Austria and to explain the distinction of a customs union from a customs area in a federal state in more detail. He could not finish this third article due to his death in March 1968. A fragment of the intended article was published in the *Jahrbücher* posthumously in the same year. In Fischer (1868), he points out that a common tariff of the North American states was only introduced with the Federal Constitution in 1789.

The United States were one example for the observation that a customs community had never existed in a confederation of states, but had only been realised when the confed-

eration was transformed into a federal state (Fischer 1867: 281). This argument was well-known and is already contained in List (1841): “All examples which history can show are those in which the political union has led the way, and the commercial has followed” (cited from Viner 1950: 95, who lists a number of examples and provides a comprehensive discussion).

3 Literature on the Zollverein and on Preferential Trade

3.1 The perception of the Zollverein

In particular the first of Fischer’s two articles had some immediate impact. Fischer’s article inspired Aegidi (1865) to write a detailed study on the history of the run-up to the Zollverein, which in turn was reviewed by Fischer (1865) in the *Jahrbücher* in an article of 40 pages length. Fischer assessed large parts of Aegidi’s book as good. But there was a dispute on the statement of Aegidi (and several Prussian authors) that already at the time of the Prussian customs reform in 1818, Prussia had the plan of founding a German customs union – an opinion that Fischer considers as being absurd (Fischer 1864: 342 footnote; 1865: 383 ff.), and he is supported in his view by Roscher (1870).

Weber (1869) refers to Fischer (1864), which he calls an excellent article, many times in his book on the Zollverein. The interest in the Zollverein in the late 1860s is also reflected in several reviews of the literature on the Zollverein and of its publications in the *Jahrbücher* (e.g. *Jahrbücher* 1868). Weber’s book is reviewed in 1870.

At that time, there had been debates on various aspects of the Zollverein since its founding with a variety of different views. Hahn (1982: 13–14) points out that the bulk of the present-day patterns of interpretation of the Zollverein already emerged in the contemporary discussion. However, most of this knowledge sank into oblivion rapidly after 1866 (Hahn 1982). After the political unification of Germany in 1871, the view that the Zollverein was a vehicle for achieving national unity dominated for decades, and Viner (1950: 98) still took it for granted “that Prussia engineered the customs union primarily for political reasons, in order to gain hegemony or at least influence over the lesser German states.” However, the simplifying picture that the Zollverein from its beginning had the aim of national unification is meanwhile attributed to Prussian historiography represented in particular by Treitschke (1897), which interprets the Zollverein *ex post* based on the result of German unification. Wolfram Fischer (1960) points out that it was economic and financial interests from which the Zollverein originated. He concludes his case study on the Zollverein stating that “To-day we are in a better position than the generations before us to see it (the Zollverein) in its proper perspective: not as the glorious beginning of a glorious history, but as a system of expedients set up to meet urgent needs.” Similar reasonings can be found in Henderson (1981), Hahn (1982) and Dumke (1984).

At the end of the 19th and the beginning of the 20th century, economists’ research interest in the Zollverein remained limited. Preferential trade was, however, discussed in the context of commercial treaties and of the most favoured nation clause (MFN clause). The Cobden-Chevalier Treaty between Britain and France in 1860 started a wave of bilateral negotiations among other European states who aimed at equal market access to the contracting parties. This process resulted in a network of bilateral MFN-treaties in Europe and in fairly free trade among European countries (see section 5.4). However, towards the late 19th century, when these treaties were renegotiated, the attitude towards more

open trade had changed and the MFN clause started to be granted only with limitations (WTO 2011: 49 f.). In the *Jahrbücher*, there are two contributions on the question of the MFN clause, namely Grunzel (1893) and Posse (1928). Both authors refer to recent events diluting the MFN clause and strongly advocate to include the unconditional MFN clause into commercial treaties.

There were also ongoing discussions on the idea of forming customs unions among European states, summarised in Pentmann (1917). After World War I, when trade policies had become more protectionist, there existed numerous proposals and attempts to reach preferential trade agreements or to found customs unions, but no agreements were reached. Overviews on those plans can be found in United Nations (1947), Viner (1950) and Machlup (1977). Henderson (1966) covers plans to found customs unions in Central Europe from 1840-1940. The *Jahrbücher* contain an article by Zwiedinek-Südenhorst (1926), who discusses and advocates a German-Austrian customs union.

The interest in the Zollverein itself increased again when the 100th anniversary of its founding approached. In 1927, the Friedrich-List-Gesellschaft took the initiative to prepare an edition of documents of the founding of the Zollverein covering the years 1815–1834, which appeared as Eisenhart Rothe et al. (1934). In the *Jahrbücher*, Zwiedinek-Südenhorst (1935) reviews this edition and in particular the introduction written by Oncken. Both Oncken and Zwiedinek-Südenhorst keep some distance from the Prussian historiography, but the discussion sticks to the question on who deserves the merit of being the creator of the Zollverein – Prussian statesmen or Friedrich List or who else. Fischer (1864: 341) considers the Badian statesman Nebenius as the intellectual father of the Zollverein (see section 4).

A differentiated and more sober interpretation of the Zollverein was presented by Henderson (1939)⁵. His well-founded study is based on a large amount of material, including the edition of Eisenhart Rothe et al. (1934), own research in archives in Vienna and London and also the above-mentioned book by Weber (1869), which he cites several times as a general reference. Henderson (1939: 94) also cites Fischer (1864), albeit only with a translation of the short description of the night of the January 1, 1834, when the Zollverein came into effect.

Viner's (1950) book on *The customs union issue* is mainly known for its contribution to the theory of customs unions (see section 3.2), but it also covers historical and political aspects. Viner often refers to the Zollverein since “the German Zollverein was the pioneer and by far the most important customs union, and generalisations about the origin, nature and consequences of unification of tariffs tend to be based mainly or wholly on the German experiment” (page 97). The book contains a bibliography on customs unions, which contain the articles of Gustav Fischer (1864, 1866, 1867) in the *Jahrbücher*, but they are not directly cited⁶.

Interest in the Zollverein revived in the context of the beginning European economic integration. An early contribution that explicitly refers to the Zollverein as a model for European integration is Schmölders (1954), followed by Fischer (1960), Henderson

⁵ There are two more editions of Henderson's book, which are actually reprints. The second edition was published in 1959, and a third edition appeared in 1984, the year of the 150th anniversary of the German Zollverein. Together with Hahn (1984), Henderson's book is still the standard history of the Zollverein.

⁶ The same applies to the books by Aegidi (1865) and Weber (1869) and to the article of Roscher (1870).

(1981) and Dumke (1984). Some analogies and differences of the design of the Zollverein and the European Economic Community will be considered in section 4. In the preface to the second edition of his book on the Zollverein in 1959, Henderson briefly discusses what can be learnt for the European Common Market. One aspect he emphasises is that the “German experience of the nineteenth century shows that the successful working of a customs union does not require member states to be of approximately equal size or to have reached the same stage of economic development”. The post-war discussion on European integration is, however, not reflected in the *Jahrbücher* and there are no articles on this question⁷. The same is true for the evolving theory of customs unions briefly discussed in the next subsection, and none of the books by Viner (1950), Balassa (1962), Meade (1955) or Machlup (1977) was reviewed in the *Jahrbücher*. Finally, Dumke (1981, 1994) introduced a new assessment of the economic effects of the Zollverein, estimating them to have been quite small, which implies that also its relevance for industrialisation was limited. His interpretation of the Zollverein is that the primary reason for its formation was tariff revenues, based on economies of scale in tariff administration in a larger customs area. Moreover, those revenues were received without consent of the parliaments, which was an advantage for the reigning monarchs.

The Zollverein remains a classical example for a customs union of several sovereign states, and recently Baldwin (2006) has referred to the Zollverein as an example for his theory of domino effects (see section 5).

3.2 The economics of regionalism

The theory on preferential trade agreements (PTAs) is generally considered to begin with Viner (1950), who introduces the concepts of trade creation and trade diversion and shows that the welfare effects for the participating countries are generally ambiguous. Viner's book is on *The customs union issue*, but the effects of trade creation and trade diversion do not only apply to customs unions but to preferential trade in general, whenever a country imposes lower tariffs on goods of the contracting parties than on goods of other countries.

According to the rules of the GATT, reciprocal PTAs must take the form of free trade areas or customs unions. However, historically PTAs did not introduce free trade among the contracting parties, but commercial treaties in general only determined to lower tariffs for certain goods produced in the partner countries (e.g. the treaties of the Cobden-Chevalier network briefly discussed in section 5.4). Nevertheless, part of the literature formulates the economics of preferential trade referring to customs unions, regardless of whether the results apply only to customs unions or hold more generally.

Early contributions

Pomfret (1988, chapter 6) discusses some contributions written earlier than Viner (1950), stating that some of them recognise the possibility of trade diversion already, but none of them spells out the consequences for the welfare effects of forming a customs union. However, O'Brien (1976) tracks the notion that due to trade diversion, preferential trade agreements may be harmful to the participating countries back to Adam Smith, who opposed the Methuen Treaty between England and Portugal signed in

⁷ The register of the years 1929–1985 of the *Jahrbücher* contains only two entries for “European Community”, which refer to very specialised problems.

1703. O'Brien also reports discussions on whether the Cobden-Chevalier Treaty in 1860 was beneficial to England or not, in which the relative amount of trade creation and trade diversion involved in the treaty was an issue⁸. Trade diversion was sometimes also mentioned in the context of the Zollverein. Dumke (1981: 262) points out a discussion carried out in newspapers and reported in the *Zollvereinsblatt* (1846) in which it is argued that the southern German states suffer from trade diversion, as Prussia and Saxonia have displaced France and England as a supplier of manufactures. O'Brien (1976: 551 f.) recalls that England regarded the Zollverein at first with suspicion fearing exclusion from the markets, but after some years a number of British writers acknowledged that the external tariffs of the Zollverein were sufficiently low to make it mainly trade-creating.

However, this knowledge on preferential trade and on the possibly dominating welfare effects of trade diversion sunk into oblivion (similar to the variety of approaches of interpreting the Zollverein), and "the early twentieth-century literature is disappointing" (O'Brien 1976: 541 f.). Before Viner's book was published in 1950, it was generally believed that preferential tariff reductions are better than no tariff reductions and are always beneficial to both countries involved, being possibly harmful only for third countries. This is true in spite of the fact that Viner (1931) had already published on the topic. For example, Haberler (1933, chapter 20.5) denies Viner's conclusions (see also Viner 1950: 53, footnote 12).

Traditional and current theory

Viner's (1950) formulation of the concept of trade creation and trade diversion inspired a comprehensive literature on the theory of preferential trade. As there are excellent surveys on the theory of customs unions and regionalism, for instance Krauss (1972), Panagariya (2000) and WTO (2011), its development is only sketched very briefly. In the 1950s, the discussion was particularly vivid, and a comprehensive bibliography can be found in Balassa (1962).

Traditionally, the static effects of a customs union, consisting of trade creation, trade diversion and terms of trade effects, and dynamic effects emerging from an increased market, are distinguished. The latter comprise economies of scale internal to the firm, external economies of scale, fiercer competition and reduction of risks and uncertainty from foreign transactions (Kreinin 1964). The theory has also been extended to analyse the effects on outside countries, and the growing incentive to impose tariffs on imports from third countries according to the optimal tariff reasoning as the customs area becomes larger.

Since the 1990s, the focus of the literature has shifted to another kind of dynamics, namely the effects of forming preferential trade agreements on the global trading system. A first question is, whether PTAs hamper or foster multilateral trade liberalisation, whether PTAs are stumbling blocs or building blocs to reaching global free trade, as Bhagwati (1991) has formulated it. Jagdish Bhagwati is the most prominent economist who see the growing regionalism as a threat to the multilateral process (see e.g. Bhagwati/Panagariya 1996 and Bhagwati 2008). The main representative of the opposite view that PTAs are building blocs on the way to world-wide free trade is Richard Baldwin (2006).

⁸ O'Brien (1976) in particular refers to McCulloch, a Scottish economist who lived from 1803–1864.

A further question is how the recent wave of new preferential trade agreements can be explained, leading to theories of endogenous formation of PTAs. Brief surveys of this literature are contained in Egger and Larch (2008) and Baldwin and Jaimovich (2012). Part of the literature deals with the question of sequencing in forming and expanding trade blocs. As the theory of sequencing will be applied to the Zollverein in section 5, it is explained in more detail in the next section. Endogenous formation of PTAs in the historical context of the nineteenth century is considered in Pahre (2008).

3.3 Sequencing in forming a trade bloc

Domino theory

When explaining the growing regionalism and the expansion of existing preferential trade agreements, Baldwin (1995) argues that there is kind of a domino effect. Both the enlargement and the deepening of integration of a trade bloc change the situation for the outsiders, who may be induced to apply for membership. Thus there is a feed-back effect, which can be explained by trade diversion. When a preferential trade area grows, third countries will be affected by additional trade diversion and joining the trade bloc becomes more attractive. If becoming a member of the trade bloc is not feasible – for political reasons or because the union countries do not admit the country – a free trade agreement with other countries could become more attractive (Egger/Larch 2008). Classical examples for the latter are the founding of the EFTA in 1960 in response to the EEC (Kreinin 1960) and the Tax Union in nineteenth century Germany (see section 5).

Baldwin formalises his idea of a domino effect by analysing the incentive for outsiders to seek entry. He combines a version of the model that Krugman (1991) uses in investigating economic geography issues with the political-economy (protection-for-sale) model of Grossman and Helpman (1994). Countries are symmetric economically, but potential entrants differ in political resistance to membership in the trade bloc. Countries with larger non-economic costs of entry require a larger economic advantage to seek accession. The initial equilibrium is characterised by the feature that the economic benefit of being in the trading bloc of the marginal member equals its political costs. Baldwin assumes an exogenous shock disturbing the equilibrium, and gives the European single market initiative as an example. The advantages of joining the trade bloc increase by the shock, and according to the political economy model firms in the outside country at the margin will lobby for entry. The enlargement increases the benefits of membership for the remaining outsiders which may now offset political costs for the next potential member. Thus a domino effect emerges, which may lead to a new equilibrium size of the trade bloc or to global free trade. Of course, the basic idea of the model can be applied to other asymmetries of the countries, as e.g. different economic situations or different size.

Panagariya (2000) points out two criticisms of the model. A first limit is that trade barriers are modelled as iceberg transport costs, thus the revenue aspect of tariffs is not considered. Secondly, Baldwin assumes that insiders admit every country that wants to join and does not consider whether insiders have an incentive to block entry. Baldwin only looks at the demand side of joining a trading bloc and neglects the supply side. Moreover, it can be criticised that an exogenous shock is necessary to begin the process of expansion.

The domino theory has been tested empirically by Sapir (2001) and more recently by Baldwin and Rieder (2007), Egger and Larch (2008) and Baldwin and Jaimovich (2012) for the current regionalism and by (Lampe 2011) for the nineteenth century. These studies use long series of country pair data and all find some support for the domino theory. In the interpretation of the results it has to be watched out, however, that joining a trade bloc and forming a new bilateral preferential trade agreement is not the same (Baldwin/Jaimovich 2012).

Negotiating free trade

Aghion et al. (2007) also tackle the question of sequencing, but they do not only take the perspective of potentially acceding countries, but consider both the demand and the supply of joining a trade bloc. They assume that a leading country can negotiate on forming a free trade area with the other countries. The leading country has the choice whether to negotiate at all and with whom to negotiate, and it may bargain sequentially or multilaterally. In the negotiations, it makes “take it or leave it” offers. Aghion et al. model a transferable-utility game (meaning that some kind of side-payments or concessions are possible) with three countries.

Two concepts turn out to be crucial: Grand coalition sub-additivity and coalition externalities. Grand coalition sub-additivity means that regardless which coalition structure prevails, the sum of the payoffs is lower than in a world with global free trade. Coalition externalities occur, when forming a free trade area has effects on the payoff of the outside countries, which are usually thought of to be negative, but which may also be positive. As long as grand coalition sub-additivity holds, global free trade will be realised in equilibrium. In this sense, preferential trade agreements are neither stumbling blocs nor building blocs of multilateral liberalisation. With grand coalition superadditivity, the structure of coalition externalities only determines, whether the leading country prefers to negotiate sequentially or multilaterally. If there are coalition externalities in at least one of the follower countries, the leader prefers sequential bargaining. The reason is that the offer to a country that is negatively affected by a free trade agreement of the other two countries may be lower than in a multilateral negotiation.

The condition of grand coalition sub-additivity is satisfied in many trade models, when countries aim at maximising welfare. It may cease to hold, however, when there are political costs of joining a trade bloc or if the payoff function of the government is not welfare, but corresponds to a different political objective, which may be influenced by special interest groups or – as may be relevant for the Zollverein – may focus on tariff revenue. In this case, the process of negotiating need not lead to global free trade, and in the model of Aghion et al. (2007), PTAs may both be building blocs or stumbling blocs for global free trade. As it is well developed on which assumptions and conditions the results depend on, the brief remark by Baldwin and Jaimovich (2012) that Aghion et al. (2007) “show that almost anything can happen” does not describe the contribution adequately.

In section 5, the history of the Zollverein is discussed in view of the theory of sequencing. To apply the theory of negotiating of Aghion et al. (2007) to the German Zollverein, Ploeckl (2010) generalises some results to the case of more than three countries. Generally, when the leading country has decided to bargain sequentially, countries whose accession will have strong negative externalities on the other potential member countries will be likely to be early in the sequence. Such an order of bargaining makes negotiations a better deal for the leading country.

4 On the nature of a customs union

In his second article, Gustav Fischer (1866, 1867) thoroughly characterises the nature of a customs union (Zollverein) and distinguishes it from other kinds of common customs areas. To this end, he refers to the terms of the Zollverein, of the Bavarian-Wuerttemberg customs union and the Tax Union (see section 5). He both considers issues which he assesses to be essential for a customs union and issues that seem desirable for the free movement of goods, but are not constituting for a customs union. Starting from some key points made by Fischer, this section discusses some analogies and differences in the institutions and the functioning of the Zollverein and the European Community.

Fischer distinguishes a *customs union* from a common tariff system within a federal state and from a *customs accession* (Zollanschluss)⁹, where one state joins a customs area and participates in the tariff revenues without receiving a vote on the future development of the tariff system¹⁰. Today's distinction between a customs union and a free trade area is not focussed on, but Fischer (1866: 244 ff., footnote 36) discusses plans to ensure the free movement of goods without a common customs system in a five-page footnote. His judgement is that such a system is not practical.

Fischer (1866: 303) defines a *customs community* (Zollgemeinschaft or Zollverband) as “an association of sovereign states contracted for a limited period to ensure free movement of goods by a common system of border tariffs and to share the tariff revenues commensurately”¹¹. This definition is close to what nowadays is called a customs union (Viner 1950: 5). The only difference is that Fischer emphasises that the agreement should be for a limited time (see below). Viner (1950: 7 ff.) attributes this definition to Cavour in 1857 in an exchange of diplomatic notes with Austria¹². However, Fischer (1864: 340) refers to a memorandum of Friedrich Nebenius written already in 1820, in which for the first time the nature of a customs union was developed and its feasibility was shown (later published as Nebenius 1833).

As already mentioned above, Fischer distinguishes between a *customs union* and a *customs accession*. Therefore, he regards two additional features as belonging to the definition of a customs union. First, all changes in tariffs have to be decided unanimously, giving each member a veto, and second, the members keep their independent customs administration. Indeed, the central administration of the Zollverein was a small office in Berlin. As Henderson (1981: 502) puts it “in no way does the European Economic Community differ more from the Zollverein than in the size of its civil service”.

Moreover, Fischer considers a limited time period for the agreements as essential for the nature of a customs union¹³, as a treaty for an unlimited time would be incompatible with the sovereignty of the member states. Otherwise some sovereignty would be surrendered to the union forever, which would only happen if the members formed a federal

⁹ There have been many German terms for customs unions and variants thereof, and the exact use of them is ambiguous. The translation “customs accession” follows Viner (1950: 83).

¹⁰ Customs accessions in this sense took place, when the small enclaves joined the Prussian customs system between 1819 and 1829. A present-day example is Turkey, which in the customs union with the European Union does not take part in the determination of the EU trade policy.

¹¹ The quotations from Fischer's articles were translated by the author.

¹² Austria had a commercial treaty with Sardinia ensuring reciprocal most-favoured-nation treatment with the exemption of a “complete customs union”. Cavour argued on the side of Sardinia, that the customs union between Austria and Modena was not complete.

¹³ At the beginning in 1834, the contract period of the Zollverein was eight years, and it was twelve years afterwards.

state with a common customs system, which would make the customs union redundant (Fischer 1867: 346 f.). Nevertheless, Fischer assumes that an exit from a customs union would hardly actually happen. The requirement that exiting the union has to be possible seems noteworthy in view of the fact that in the European Union the right to withdraw was only introduced in the Treaty of Lisbon in 2009. It is also interesting in view of the current discussion on Greece in the European Monetary Union, for which there are no rules for a possible exit.

Fischer (1867: 256 ff.) understands the difficulties emerging from giving a veto to each member of the union, and discusses the veto (and proposals to change that rule) in length. However, the right to veto is indispensable for him. One reason he gives – besides the sovereignty of the members – is that the administration of a state would not conscientiously conduct a law, which was imposed on it by majority vote and to which it had not agreed voluntarily. Henderson (1981) uses the same reasoning referring to the European Economic Community and points out that for a long time votes were made only unanimously although the Council of Ministers formally could decide by qualified majority. “But there was no means by which a member of the Community could be forced to accept a decision by a ‘qualified majority’. In practice it was necessary to secure a unanimous vote ...” (Henderson 1981: 496).

In the Zollverein, however, the right to veto a decision and the limited duration of the agreements were linked, and the possibility to exit mitigated the problems emerging from vetos. If a decision was vetoed by one or more states, Prussia could wait until the renewal of the treaties, and the other states had the choice of accepting the change or leaving the Zollverein. Prussia acted like this several times, and in practice, a threat to use the veto could only delay decisions for some years (Henderson 1981: 495; Fischer 1867: 338 ff.). Two examples will be given in section 5.3.

Fischer (1866) also discusses issues that are not essentials of the customs union, but that in modern terms would refer to measures ensuring the functioning of the internal market. For instance, within the Zollverein, a harmonisation of weights and measures took place, and there was also a reform of coinage. Moreover, similar commercial laws are desirable within a customs union, and the treaties of the Zollverein expressed the intention to move in that direction, which however did not happen (page 294 ff.). Moreover, Fischer’s discussion on the desirable harmonisation of indirect taxes resembles very much the arguments in the lead-up to the internal market of the European Union before 1992 (page 277 ff.). The only excise tax that was unified within the Zollverein and jointly collected was the tax on beet root sugar. It was introduced in 1841, since the tariff revenue from imported cane sugar had fallen, and the tax rate was increased several times until 1858 to ensure that the revenue replaces the loss in tariffs (page 283 f. including footnote 76).

The taxing of sugar illustrates that in the Zollverein, tariffs were to a large extent fiscal tariffs¹⁴. Henderson (1981: 503) highlights the fiscal aspect of tariffs by pointing out that “In Prussia for example, just before the establishment of the Zollverein, the revenue from

¹⁴ Note, however, that most European countries introduced fiscal policies for developing their own sugar production during the nineteenth century, combining tariffs, taxes, and direct and indirect subsidies for transportation, production or export. In 1864, France, Belgium, the Netherlands (the greatest exporters) and Great Britain (the largest importer) agreed upon a Sugar Convention limiting export subsidies. The Brussels Convention of 1902 was signed by a larger group of countries including Germany. The Sugar Convention is an early example of multilateralism. For details see Moura Filho (2006). The German sugar tax was abolished only when the European Single Market was introduced in 1992.

customs duties was a little over 40 per cent of total revenue.” For Wolfram Fischer (1960: 67), the intended purpose in levying tariffs is one of the major differences between the Zollverein and the European Community. Whereas in modern times, tariffs are introduced to protect industries, in the nineteenth century, the revenue aspect was dominant. In the Zollverein, tariffs were mainly levied on mass consumption goods, such e. g. coffee, tea and colonial food stuff. After a comprehensive reasoning based on data on the Zollverein, Dumke (1994: 22) concludes “that the tariff ... of the Zollverein ... was primarily a tariff for revenue”. These results are in line with Fischer (1866: 251 ff.), who also emphasises the relevance of tariff revenue after discussing both protective and fiscal tariffs.

5 Sequencing in the Zollverein

Among the examples Baldwin (2006, footnote 13) gives for domino effects in forming a trade bloc, he also refers to the Zollverein and cites Viner (1950, chapter V.3). Explaining the foundation and expansion of the Zollverein is indeed a relevant application of the modern theory of sequencing in forming customs unions. However, the cited chapter in Viner’s book only contains a brief summary of the history of the Zollverein based on Henderson (1939) as a principle source. These authors mostly explain why and in what order the German states would request to join the Zollverein, thereby looking at the demand side of membership. Ploeckl (2010) adds the aspect of supply of membership applying a generalised model of Aghion et al. (2007) to the Zollverein (see section 3.3.). He analyses how the structure of negative externalities explain which sequence Prussia as the leading country chose for the negotiations. Moreover, he points out that the negative externalities explain why Prussia did not opt for multilateral negotiations and in general only negotiated with the other states one by one. Negative externalities can for instance emerge from trade diversion and subsequent fall in trade volume and a loss in tariff revenue. Revenues may also be affected by the diversion of trade routes and thereby falling transit duties.

Many German states resisted to join the Zollverein in spite of financial and economic advantages of membership, because they feared to lose their sovereignty. This resistance can be interpreted as reflecting non-economic costs of membership as in the model of Baldwin (1995), and such costs would enter the pay-offs in the approach of Aghion et al. (2007).

The negative externalities, i. e. the worsening of the economic situation of the outsiders due to an accession of a state to the Zollverein, are already discussed by Fischer (1864), and his formulations describing the history of the Zollverein contain many elements of domino effects. Hence there is another example where the basic notion of a modern pattern of interpretation of the Zollverein already existed in the 1860s. In the following, the history of the Zollverein focussing on the sequencing of the accession of the German states is summarised, accentuating both Fischer’s work and the contribution of Ploeckl (2010)¹⁵.

¹⁵ A map of the Deutsche Bund (German Confederation) showing the German states in 1818, which may be helpful in following the arguments, can be found on http://commons.wikimedia.org/wiki/File:Deutscher_Bund.png or at the server for digital historical maps of the Leibniz Institute for European History Mainz (IEG), <http://www.iegmaps.de/mapsp/mapd820.htm>. Note that Prussia consisted of a western and an eastern part that had no connection. Moreover, Series 4 of IEG-MAPS contains maps on the economic unification of Germany 1828 to 1901, including the area of the Zollverein at different dates, <http://www.ieg-maps.uni-mainz.de/map4.htm>.

In addition, Austria's relation to the Zollverein and its vain attempts to join it are discussed in section 5.3, and section 5.4 considers possible domino effects in the Cobden-Chevalier network.

5.1 The lead-up to the Zollverein

Often, the first important date mentioned in the history of the Zollverein (not yet referring to the formation of a customs union) is 1818, when Prussia introduced a new border tariff system. Not only Germany was splintered into 38 sovereign states, but also Prussia was no uniform customs area. Before 1818, tariffs were not collected at the border, but customs duties were instead levied at places such as town gates, bridges, roads, crossings and the like. According to Fischer (1864: 329), there were 60 different systems of tariffs and excise taxes in Prussia, excise taxes were levied on 2775 different products, and there were import and export prohibitions. Trade within Prussia was impeded, revenues were low, administration costs high and smuggling was widespread. The new tariff law introduced free trade within Prussia and a tariff to be collected at the external borders. Internal duties could only be levied when a service was rendered, as e.g. a bridge toll (Henderson 1939: 40). The southern states Bavaria (1807), Wuerttemberg (1808) and Baden (1812) had conducted similar reforms some years earlier already, but essentially the Prussian tariff (with some modifications) was to become the tariff of the Zollverein in 1834 (Hahn 1984: 12).

The first expansion of the Prussian customs area was the adoption of the tariff system by the enclaves within Prussia – which did however not result in a customs union but were customs accessions. To prevent smuggling from these enclaves and to simplify the administration, Prussia treated the enclaves as if they belonged to the Prussian customs area and levied transit duties at its borders on goods destined for the enclaves. At the same time, Prussia offered them a share of the tariff revenue according to the share in population when they joined the Prussian customs system. Although this offer was financially attractive for the enclaves and in spite of the pressure imposed by the transit duties, many enclaves resisted accession. They obviously had non-economic costs of accession, as they were concerned about their sovereignty. The treaties with the nine enclaves were signed between 1819 and 1830 (Fischer 1864: 354; Ploeckl 2010: 15). Attempts in the 1820s to form a customs union among several Southern German states failed. In 1827, the two largest of them, Bavaria and Wuerttemberg, negotiated a customs union, which came into force on July 1, 1828. Baden did not become a member, as it wanted to keep its low tariffs. Hesse-Darmstadt was also invited to join, but it was to become the first state which completely voluntarily entered a customs union with Prussia.

An important aim of Prussia was to connect its eastern and the western territories within a common customs area. Hesse-Darmstadt was negatively affected by the Prussian tariff reform, as it lacked free access to the large Prussian market. Moreover, its financial situation was bad. Hesse-Darmstadt had approached Prussia already in 1825 to form a commercial treaty, but at that time Prussia only wanted to negotiate jointly with Hesse-Darmstadt and Hesse-Cassel. The latter would have linked the two parts of Prussia but refused to negotiate for political reasons (Henderson 1939; Hahn 1984: 51). When Hesse-Darmstadt again asked for negotiations in January 1828, agreement on a customs union was reached quickly. Fischer (1864: 357) points out that the change in Prussia's attitude was probably due to the formation of the Bavarian-Wuerttemberg customs union. Hesse-Darmstadt adopted the Prussian tariff system, but retained full sovereignty and changes in tariffs had to be agreed upon by the two member states.

Hesse-Darmstadt benefited a lot from the customs union, as it received a share of the tariff revenue according to its population, which amounted to substantial financial transfers from Prussia. Moreover, the two Prussian territories were not connected by Hesse-Darmstadt and the common border was short. Hence for Prussia, the agreement was less profitable (Ploeckl 2010: 17).

Prussia thus entered the union with Hesse-Darmstadt in view of a future expansion of the customs union. “Only the confident hope that further states would join this customs union could make Prussia enter an agreement that on its own was financially more disadvantageous than advantageous for her” (Fischer 1864: 358). Most other German states reacted with displeasure on the agreement. Ploeckl (2010: 17 f.) emphasises the negative externalities on other states. The agreement between Prussia and Hesse-Darmstadt impeded an enlargement of the customs union between Bavaria and Wuerttemberg, and it put pressure on the other small German states around Hesse-Darmstadt.

As a reaction, several central and northern German states, among them Hesse-Cassel, founded the *Middle German Commercial Union* (Mitteldeutscher Handelsverein) in 1828. Geographically, it covered the market places Frankfurt and Leipzig, the roads to the North sea and all roads between the two parts of Prussia. As Fischer (1864) and Ploeckl (2010) both point out, the agreement included only some minor reciprocal facilitation of trade and some obligations referring to the maintaining and building of roads. It was no customs union and did not even ensure free trade among its members. The main term of the contract was that member states committed themselves not to join any customs union without the consent of the whole Union until 1834, when the agreement between Prussia and Hesse-Darmstadt expired. The objective was thus to prevent the customs union between Prussia and Hesse-Darmstadt (and also the Bavarian-Wuerttemberg one) from expanding. Ploeckl (2010: 18) interprets the Middle German Commercial Union as an attempt to mitigate negative coalition externalities, that might arise from further states joining the customs union with Prussia. Moreover, the Middle German Commercial Union tried to force Prussia to negotiate multilaterally. However, Prussia refused collective negotiations, which is in line with the theory of sequencing by Aghion et al. (2007) and Ploeckl (2010).

Fischer (1864) and Ploeckl (2010) somewhat disagree in what the next step was. Ploeckl considers Hesse-Cassel as the next element of the entry sequence focussing on negative externalities of the coalition between Prussia and Hesse-Darmstadt. In contrast, Fischer describes the joining of Hesse-Cassel as an effect of the rapprochement between Prussia and the Bavarian-Wuerttemberg customs union. Of course, these two reasonings do not exclude each other but can be understood as complements. The Bavarian-Wuerttemberg customs union was still small and had long customs borders, hence the efficiency gains of the customs union were small. Fischer (1864: 364) indicates that the administration costs of tariff collection amounted to 44 percent of the gross revenue to show the imperfection of that union. According to Fischer, approaching Prussia was substantially facilitated by the forming of the customs union between Prussia and Hesse-Darmstadt. Henderson (1939: 89) points out that Prussia, Bavaria and Wuerttemberg had a common distrust of the Middle German Commercial Union which also fostered the cooperation. In 1829, the two customs unions signed a comprehensive commercial treaty facilitating trade among the four states significantly. Moreover, the customs systems of the two unions were to be harmonised.

As a reaction, in October 1829 it was agreed within the Middle German Commercial Union that it was to be continued an additional six years until 1841 (Fischer 1864:

362). However, in this change of the contract Saxony insisted on a clause that it could leave the Middle German Commercial Union if the Bavarian-Wuerttemberg and the Prussian-Hessian customs unions merged.

The geographical location of Hesse-Cassel was crucial in the situation at hand. It controlled the traditional north-south trade routes and an important east-west road. Moreover, it separated the eastern and the western provinces of Prussia. Conversely, Hesse-Cassel was negatively affected by the union between Prussia and Hesse-Darmstadt. It faced higher tariffs at the border to Hesse-Darmstadt, and Prussia tried to increase the negative externalities by its road building programme, which made the north-south connection through Hesse-Cassel less important (Ploeckl 2010: 19; Hahn 1984: 60). Moreover, Hesse-Cassel was in a very bad economic condition. In 1831, Hesse-Cassel decided to defect with the treaty of the Middle German Commercial Union and to accept Prussia's offer to join the customs union.

The membership of Hesse-Cassel in the Prussian-Hessian customs union had very strong externalities in particular on the southern states, including Bavaria and Wuerttemberg. The area of the customs union was now connected, and as it spread from the very east to the very west of Germany, it split up the area of the Middle German Commercial Union and controlled all north-south roads. "All states located south of this customs area ... suddenly came into a desperate commercial situation." (Fischer 1864: 367). In contrast, an expansion of the customs union by other states would not have had similar negative externalities on Hesse-Cassel. Hence, as Ploeckl (2010: 19) convincingly emphasises, Prussia's negotiations with Hesse-Cassel complies well with his theory of an optimal sequence.

Next, the Bavarian-Wuerttemberg and the Prussian-Hessian customs union negotiated and agreed on merging and forming the Zollverein in March 1833. The revenue sharing according to population amounted to a strong financial transfer to Bavaria and Wuerttemberg, and they also received some political concessions (Ploeckl 2010: 20). This agreement in turn had externalities both on Baden and on Saxony and the Thuringian principalities. The latter two were surrounded by customs union area and at the Austrian border, trade was impeded by prohibitive tariffs. Hence Saxony and the Thuringian principalities had strong motives to join the Zollverein urgently (Fischer 1864: 372). According to Ploeckl (2010: 20 f.), an expansion of the Prussian-Hessian customs union by one of these areas would not have had comparable effects on Bavaria and Wuerttemberg. Moreover, the merger of the two customs unions allowed Saxony to use its exit clause from the Middle German Commercial Union and join the Zollverein. Saxony joined since it feared isolation, although the revenue sharing scheme put it at a disadvantage, as its share in imports was much higher than its share in population. Ploeckl (2010) further argues, that the externality of a membership of Saxony on the Thuringian states was larger than it would have been vice versa, explaining the order of negotiations. The Zollverein started on January 1, 1834 with the states of the two customs unions and Saxony and the Thuringian principalities.

As a reaction to the founding of the Zollverein, the northern states Brunswick and Hanover formed a customs union in 1834, called the *Steuerverein* (Tax Union), which Oldenburg joined in 1836 (Ploeckl 2010: 23).

5.2 Enlargement of the Zollverein

Soon after the formation of the Zollverein, Baden and the Hessian states Nassau and Frankfurt also entered the union. Baden had long borders with France and Switzerland, hence it was not as dependent on the north-south routes as the other southern states. Moreover, it had a free trade orientation and hesitated to introduce the higher tariffs of the Zollverein. However, as mentioned above, it was affected by Bavaria and Wuerttemberg being part of the Zollverein, and the large markets of the Zollverein made joining worthwhile, although it had refused to become a member of the Bavarian-Wuerttemberg customs union in 1828. Negotiations were completed in May 1835 (Fischer 1864: 378; Ploeckl 2010: 22).

Nassau had hesitated to join a customs union, one reason for which was that it had revenue from tolls on the Rhine and therefore a high reservation price for joining the Zollverein. But after the accession of the southern states, it feared isolation. After reaching compromises referring to shipping on the Rhine, the agreement of joining dates from December 1835. Nassau's accession in turn affected the town of Frankfurt, which had lost its unimpeded access to the Rhine through the area of Nassau. Moreover, its trade fairs had suffered from the fairs in the neighbouring town of Offenbach, which was located within the Zollverein. Negotiations were completed in the course of the year 1836. Frankfurt was conceded to receive a fixed sum from the tariff revenues, which was higher than it would have been according to the population based distribution scheme (Fischer 1864: 380 ff.; Henderson 1939: 110 ff.; Ploeckl 2010: 22). This higher payment was justified by the fact that in a trading center, per capita trade was higher, but it can also be interpreted as a side payment making membership attractive.

When there was a dispute about the building of roads and railways during the negotiations on the renewal of the Tax Union, Brunswick approached the Zollverein to avoid isolation, and it joined in 1842. In that year, also Luxembourg, which was surrounded by the German, French and Belgium customs borders, decided to accede the Zollverein.

5.3 Austria, the accession of Hanover and the crises of the Zollverein

In the course of the renewals of the Zollverein treaties, which expired in 1853 and again in 1865, the Zollverein experienced two crises. In both cases, the dualism between Prussia and Austria played a crucial role. Prussia succeeded in preventing Austria from joining the Zollverein, although some southern members of the Zollverein were in favour of an accession of Austria. Hence the enlargement of the Zollverein reached a limit due to political reasons.

By 1842, of the states of the German Confederation, only Austria and a number of northern states – among them Hanover and the seaports Hamburg and Bremen – had not joined the Zollverein. Austria had a prohibitive customs system that it did not want to give up, hence it had not taken part in any negotiations on a customs union. In the 1840s, there were some discussions on a cooperation with Austria, but “Austria's failure to reform her tariffs in the early forties made it useless to negotiate with Prussia for a commercial treaty, let alone for an Austro-Zollverein union” (Henderson 1939: 177). The trade of the northern states was oriented overseas and less to the other German states, and they were free trade oriented and did not want to accept the higher tariffs of the Zollverein, hence in earlier negotiations, they had demanded far-reaching concessions (Fischer 1864: 401 f.). Formulated in terms of the theory of sequencing, “their access to major ports had the implication that the related absence of strong coalition

externalities meant that Prussia found the required reservation price too high and did not secure their accession” (Ploeckl 2010: 23).

Moreover, there was a conflict among protectionists and free-traders within the Zollverein (Hahn 1984: 113 ff.). Among others, Bavaria and Wuerttemberg were protectionist, whereas Prussia wanted to lower some tariffs, which however was only possible by mutual consent of all members. After the revolution of 1848/49, trade policy in Austria changed, and the prohibitive system was replaced by a protective system in 1852. Austria aimed at an Austro-German customs union, hoping that the Zollverein would raise its tariffs (Henderson 1939: 203) Prussia at that time did not want a customs union with Austria for political reasons, but some southern states had threatened to only renew the Zollverein treaties, which expired at the end of 1853, if the Zollverein would include Austria.

In this situation, Prussia and Hanover secretly agreed on a customs union in September 1851, that was to begin in 1854. Prussia was interested in an agreement, as Hanover’s territory was an alternative of connecting its eastern and western provinces, which weakened the bargaining power of the other members. The conditions for Hanover were very favourable. In particular, it was to receive 75 % more of the tariff revenues than its share according to population. Moreover, several tariffs and taxes in the Zollverein were to be lowered (Henderson 1939: 213 ff.; Fischer 1864: 413 ff.). “This action effectively created a wall against Austrian accession, because Austria was unlikely to reduce its duties to these lower levels” (Pahre 2008: 315). As Prussia could terminate the Zollverein treaties in 1853, the other states could only accept the treaty with Hanover or leave the Zollverein, which none of them did. As explained in section 4, Prussia could use the threat of terminating the agreement at the next possible date to circumvent the difficulties arising from the possibility of veto by each member state¹⁶. Oldenburg, that together with Hanover had been in the Tax Union, followed Hanover into the Zollverein in 1854.

Before, Prussia and Austria had agreed on a commercial treaty at the beginning of 1853, which also was to become part of the new Zollverein treaties. Austria abolished most import prohibitions and lowered tariffs, and it received preferential access to the Zollverein. Moreover, negotiations on an Austrian-German customs union were to begin in 1860.

In the lead-up to the next renewal of the Zollverein treaties, the conflicting interests and the action of Prussia followed similar patterns. Prussia wanted to lower tariffs and to keep Austria out of the Zollverein. A change in tariffs was, however, only possible by unanimous vote, and southern member states of the Zollverein supported Austria in its wish to form a Central European customs union. Again, Prussia strengthened its bargaining situation by signing a treaty with a third party. Prussia agreed on a commercial treaty with France in 1862, which in 1860 had signed the Cobden-Chevalier Treaty with England (see section 5.4). Tariffs were to be reduced significantly, and the Franco-Prussian Commercial Treaty contained a most-favoured-nation (MFN) clause, meaning that Austria would lose its preferential access to the markets of the Zollverein. Austria opposed the treaty, and some members of the Zollverein rejected

¹⁶ Fischer (1864: 408 ff.) describes the crisis of the Zollverein at the beginning of the 1850s in detail, and defends the course of action of Prussia, as the accession of Hanover was in the interest of all members of the Zollverein (page 416 f.). Fischer does not cover the second crisis of the Zollverein 1860–1865 any more.

it, but Prussia again conditioned the renewal of the Zollverein on the acceptance of the lowering of tariffs and the treaty with France. Eventually a new treaty between Austria and the Zollverein was agreed upon in April 1865 and in May 1865 a treaty was signed to renew the Zollverein for another twelve years (Henderson 1939; Hahn 1984).

However, after the Seven-Weeks War in 1866 and the defeat of Austria, many northern German states (among them Schleswig-Holstein, that until 1866 was not in the Zollverein) became part of Prussia, the Northern German Confederation emerged, the Zollverein was reformed (in particular introducing a Customs Parliament deciding by majority vote) with new treaties between Prussia, Bavaria, Baden, Wuerttemberg and Hesse-Darmstadt. Hamburg and Bremen remained outside the Zollverein even after 1871 and joined the common customs area only in the 1880s.

In his recent book on trade cooperation in the nineteenth century, Pahre (2008: 311 ff.) discusses Austrian trade policy beyond the common interpretation that Austria first was not willing to enter a customs union due to its prohibitive system and later was not admitted to join the Zollverein by Prussia due to the rivalry between the two states. Pahre points out that Austria responded to the Zollverein very close to what the reasoning of political economy would predict: First, it lowered its own tariffs, second it sought cooperation with the Zollverein and third, it cooperated with outsiders, signing treaties on commerce and tariffs for instance with Britain, Belgium, Russia, the Ottoman Empire and Sardinia. Moreover, the customs border between Austria and Hungary was abolished in 1850.

5.4 Domino effects in the Cobden-Chevalier network

Domino effects are also discussed in the context of the network of bilateral commercial treaties among European states that emerged 1860–1875. The Cobden-Chevalier Treaty between Britain and France signed in 1860, which reciprocally lowered tariffs, is regarded to have sparked a wave of bilateral trade agreements (WTO 2011: 49). Lampe (2011: 645) shows a map of the Cobden-Chevalier network in 1875, calling it “the mother of all spaghetti bowls”¹⁷.

The bilateral treaties contained the unconditional most-favoured-nation (MFN) clause, thereby together creating kind of a “plurilateral preferential trade agreement” ensuring that a country could not discriminate among those trading partners with whom it was linked by a commercial treaty (WTO 2011: 49)¹⁸.

Nevertheless, when applying the concept of domino effects to the development of the Cobden-Chevalier network, it has to be noted that a country could not join an existing (multilateral) trade bloc. Rather, a bilateral treaty should be interpreted as a “closed preferential agreement” with two members, inducing to form new PTAs as a reaction. (Lampe 2011: 651). In this respect, the enlargement of the Zollverein and the contagion of the bilateral commercial treaties have to be distinguished. In his empirical analysis,

¹⁷ The term “spaghetti bowl” was coined by Bhagwati to describe today’s numerous and interwoven PTAs, and Baldwin (2006) took up this term for the title of his paper.

¹⁸ However, the MFN clause may hamper the spread or the deepening of trade liberalisation, as there is an incentive to try to free-ride on tariff reductions agreed upon by others. Pahre (2008, chapter 11) finds some empirical support for this hypothesis on the discouraging effect of MFN cooperation based on the treaties of the nineteenth century. Such effects may contribute to explain, why the process did not continue with further tariff reductions “in a second round” after 1875 (Lampe 2011: 662 ff.; Accominotti/Flandreau 2008: 181).

Lampe (2011: 651) finds that the Cobden-Chevalier network can be explained by combining the approach of Baier and Bergstrand (2004), who focus on the economic fundamentals, political economy considerations as in Pahre (2008) and Baldwin's (1995) domino theory based on fears of being affected by trade diversion.

The Cobden-Chevalier treaty of 1860 has long been regarded as the starting point of an era of fairly free trade among European countries. Recent literature has challenged this conventional view by pointing out that the process of substantial trade liberalisation had started already in the 1840s (Tena-Junguito et al. 2012; Accominotti/Flandreau 2008). Estimating a gravity model with data from 1850–1870, Accominotti and Flandreau (2008) find that the treaties did not have any marked effects on overall trade flows. Lampe (2009) draws a somewhat more differentiated picture, looking at different goods. Although total trade was not raised, he shows that the treaties did have an effect on trade, in particular for trade in final goods.

In his discussion on the reaction of outside countries to the Zollverein in the 1840s and 1850s, Pahre (2008: 316 ff.) points out, that both unilateral trade liberalisation and cooperation between outside countries may have been induced by the forming of the Zollverein, and that “in this way, the Zollverein may have been a catalyst for the entire nineteenth-century trade regime.”

6 Final remarks

The German Zollverein of the 19th century is a particular suitable application of the recent theory of sequencing in forming a trade bloc. The states indeed negotiated one by one with Prussia, and domino effects could be observed. States that had resisted becoming a member would propose to join the Zollverein some years later after it had been enlarged. Prussia never initiated the negotiations but waited until the respective governments made a proposal (Fischer 1864: 383). Thus the demand of membership which is at the focus of Baldwin's (1995) theory played a role. But Ploeckl's (2010) considerations on the supply of an agreement based on Aghion et al. (2007) are also relevant, as Prussia for instance chose to only negotiate bilaterally and not multilaterally, and the sequence can be explained by externalities of the membership of one country on others.

Domino effects of enlarging or spreading preferential trade agreements were observed also in other instances, e.g. within Europe and in Asia (Baldwin 1995, footnote 13). However, most of these cases are more diffuse. For instance, most enlargements of the European Union followed fundamental political changes within the joining countries, which should be considered as exogenous for the accession process and cannot be attributed to domino effects.

Hence the Zollverein remains a classical historical example for the economics of regionalism. The situation can be compared to the discussion on European integration and the emergence of the theory of customs unions in the 1950s: The Zollverein at that time was not the only historical example of a customs union, but by far the most relevant one. Likewise, the forming of the Zollverein is not the only example for domino effects in forming a trade bloc, but probably the purest one.

References

- Accominotti, O., M. Flandreau (2008), Bilateral treaties and the most-favored nation clause: The myth of trade liberalization in the nineteenth century. *World Politics* 60(2): 147–188.
- Aegidi, L. (1865), *Aus der Vorzeit des Zollvereins: Beitrag zur deutschen Geschichte*. Boyes & Geisler, Hamburg.
- Aghion, P., P. Antras, E. Helpman (2007), Negotiating free trade. *Journal of International Economics* 73(1): 1–30.
- Baier, S. L., J. H. Bergstrand (2004), Economic determinants of free trade agreements. *Journal of International Economics* 64(1): 29–63.
- Balassa, B. (1962), *The theory of economic integration*. London: Allen & Unwin.
- Baldwin, R. (1995), A domino theory of regionalism. Pp. 25–48 in: R. Baldwin, P. Haaparanta, J. Kiander (eds.), *Expanding Membership of the European Union*. Cambridge, University Press.
- Baldwin, R. (2006), Multilateralising regionalism: Spaghetti bowls as building blocs on the path to global free trade. *World Economy* 29(11): 1451–1518.
- Baldwin, R., D. Jaimovich (2012), Are free trade agreements contagious? *Journal of International Economics* 88: 1–16.
- Baldwin, R., R. Rieder (2007), A test of endogenous trade bloc formation theory on EU data. CEPR Discussion Papers 6389.
- Bhagwati, J. (1991), *The world trading system at risk*. Princeton, NJ: Princeton University Press.
- Bhagwati, J., A. Panagariya (1996), Preferential trading areas and multilateralism: strangers, friends, or foes? Pp. 1–78 in: J. Bhagwati, A. Panagariya (eds.), *The economics of preferential trade agreements*. Columbia University: College Park.
- Bhagwati, J. N. (2008), *Termites in the trading system: how preferential agreements undermine free trade*. Oxford: Oxford University Press.
- Dumke, R. H. (1981), Die wirtschaftlichen Folgen des Zollvereins. Pp. 241–273 in: W. Abels-hauser, D. Petzina (eds.), *Deutsche Wirtschaftsgeschichte im Industriezeitalter*. Königstein/Ts.: Athenäum.
- Dumke, R. H. (1984), Der Deutsche Zollverein als Modell ökonomischer Integration. Pp. 71–101 in: H. H. Berding (ed.) *Wirtschaftliche und politische Integration in Europa im 19. und 20. Jahrhundert. Geschichte und Gesellschaft: Sonderheft 10*. Göttingen: Vandenhoeck & Ruprecht. (A revised and shortened version is published as: Tariffs and market structure. The German Zollverein as a model for economic integration. Pp. 77–115 in: W. R. Lee (ed.), *German industry and German industrialization. Essays in German economic and business history in the nineteenth and twentieth centuries*. London, Routledge.)
- Dumke, R. H. (1994), German economic unification in the 19th Century: the political economy of the Zollverein.
- Egger, P., M. Larch (2008), Interdependent preferential trade agreement memberships: An empirical analysis. *Journal of International Economics* 76(2) 384–399.
- Eisenhart Rothe, W. v., A. Ritthaler, H. Oncken (eds.) (1934), *Vorgeschichte und Begründung des deutschen Zollvereins*. Veröffentlichungen der Friedrich-List-Gesellschaft. Berlin: Hobb-ing.
- Fischer, G. (1857), Ueber die Errichtung staatswissenschaftlicher Seminarien auf den deutschen Universitäten nebst einem Bericht über das staatswissenschaftliche Seminar zu Jena. F. Mauke, Jena.
- Fischer, G. (1864), Ueber das Wesen und die Bedingungen eines Zollvereins: Die Idee eines deutschen Zollvereins und ihre Ausführung geschichtlich entwickelt (On the nature and the conditions of a customs union: The idea of a German customs union and its implementation considered historically). *Jahrbücher für Nationalökonomie und Statistik* 2: 317–385 and 397–432.
- Fischer, G. (1865), *Litteratur: Aus der Vorzeit des Zollvereins: Beitrag zur deutschen Geschichte*. Boyes & Geisler, Hamburg, 1865, von L. K. Aegidi und *Die Idee eines Zollvereins, 1865*, von L. K. Aegidi. *Jahrbücher für Nationalökonomie und Statistik* 5: 361–401.

- Fischer, G. (1866), Ueber das Wesen und die Bedingungen eines Zollvereins: Das Wesen eines Zollvereins und der Unterschied desselben von anderen Arten der Zollgemeinschaft unter mehreren Staaten, Teil 1 (On the nature and the conditions of a customs union: The nature of a customs union and the difference to other kinds of customs communities among several states, part 1). *Jahrbücher für Nationalökonomie und Statistik* 7: 225–304.
- Fischer, G. (1867), Ueber das Wesen und die Bedingungen eines Zollvereins: Das Wesen eines Zollvereins und der Unterschied desselben von anderen Arten der Zollgemeinschaft unter mehreren Staaten, Teil 2 (On the nature and the conditions of a customs union: The nature of a customs union and the difference to other kinds of customs communities among several states, part 2). *Jahrbücher für Nationalökonomie und Statistik* 8: 252–350.
- Fischer, G. (1868), Ueber die Bundeszollgemeinschaft Nordamerikas (On the federal customs community of North America). *Jahrbücher für Nationalökonomie und Statistik* 11: 314–327.
- Fischer, W. (1960), The German Zollverein: a case study in customs union. *Kyklos* 13(1): 65–86.
- Grossman, G. M., E. Helpman (1994), Protection for sale. *American Economic Review* 84(4): 833–850.
- Grunzel, J. (1893), Die Meistbegünstigungsklausel in der modernen Handelspolitik. *Jahrbücher für Nationalökonomie und Statistik* 60: 561–569.
- Haberler, G. v. (1933), *Der internationale Handel*. Berlin: Springer. English translation: *The theory of international trade*, London: Hodge, 1936.
- Hahn, H.-W. (1982), Wirtschaftliche Integration im 19. Jahrhundert. No. 52 in: *Kritische Studien zur Geschichtswissenschaft* Göttingen: Vandenhoeck und Ruprecht.
- Hahn, H.-W. (1984), Geschichte des Deutschen Zollvereins. No. 1502 in: *Kleine Vandenhoeck-Reihe*. Göttingen: Vandenhoeck & Ruprecht.
- Henderson, W. O. (1939), *The Zollverein*. Cambridge: Cass. 2. edition 1959, 3. edition 1984.
- Henderson, W. O. (1966), Mitteleuropäische Zollvereinspläne 1840–1940. *Zeitschrift für die gesamte Staatswissenschaft (JITE)* 122(1): 130–162.
- Henderson, W. O. (1981), The German Zollverein and the European Economic Community. *Zeitschrift für die gesamte Staatswissenschaft (JITE)* 137(3): 491–507.
- Jahrbücher für Nationalökonomie und Statistik* (1868), Litteratur über den Zollverein. Vol.10: 343–347.
- Jahrbücher für Nationalökonomie und Statistik* (1870), Neueste Literatur zur Geschichte des deutschen Zollvereins. Vol.14: 226–230.
- Krauss, M. B. (1972), Recent developments in customs union theory: An interpretive survey. *Journal of Economic Literature* 10(2): 413–436.
- Kreinin, M. E. (1960), The “Outer-Seven” and European Integration. *The American Economic Review* 50(3): 370–386.
- Kreinin, M. E. (1964), On the dynamic effects of a customs union. *Journal of Political Economy* 72: 193–195.
- Krugman, P. R. (1991), Increasing returns and economic geography, *Journal of Political Economy* 99(3): 483–499.
- Lampe, M. (2009), Effects of bilateralism and the MFN clause on international trade: Evidence for the Cobden-Chevalier network, 1860–1875. *The Journal of Economic History* 69(4): 1012–1040.
- Lampe, M. (2011), Explaining nineteenth-century bilateralism: economic and political determinants of the Cobden-Chevalier network. *The Economic History Review* 64(2), 644–668.
- List, F. (1841), *Das nationale System der politischen Oekonomie*. J. G. Cotta’scher Verlag. The English translation cited by Viner (1950, page 94 f.) is: *The national system of political economy*, translated by S. S. Lloyd, New York (Longmans, Green and Company), 1904.
- Machlup, F. (1977), *A history of thought on economic integration*. New York: Columbia University Press.
- Meade, J. E. (1955), The theory of customs unions. No. [1] in: *Professor Dr. F. de Vries lectures*. Amsterdam: North-Holland.
- Moura Filho, H. (2006), Pioneering multilateralism: the sugar agreements 1864–1914. MPRA Paper No. 5208.

- Nebenius, C. (1833), Denkschrift für den Beitritt Badens zu dem zwischen Preussen, Bayern, Württemberg, den beiden Hessen und mehren andern deutschen Staaten abgeschlossenen Zollverein. Verlag Müller, Karlsruhe.
- O'Brien, D. (1976), Customs unions: Trade creation and trade diversion in historical perspective. *History of Political Economy* 8(4): 540–563.
- Pahre, R. (2008), Politics and trade cooperation in the nineteenth century: the 'agreeable customs' of 1815–1914. Cambridge University Press.
- Panagariya, A. (2000), Preferential trade liberalization: The traditional theory and new developments. *Journal of Economic Literature* 38(2): 287–331.
- Pentmann, J. (1917), Die Zollunionsidee und ihre Wandlungen im Rahmen der wirtschaftspolitischen Ideen und der Wirtschaftspolitik des 19. Jahrhunderts bis zur Gegenwart. No. 27 in: *Probleme der Weltwirtschaft* 27. Jena: Fischer.
- Ploeckl, F. (2010), The Zollverein and the formation of a customs union. *Oxford University Economic and Social History Series* 84.
- Pomfret, R. (1988), Unequal trade: The economics of discriminatory international trade policies. Oxford and New York: Blackwell.
- Posse, H. E. (1928), Meistbegünstigung. *Jahrbücher für Nationalökonomie und Statistik* 129(5): 672–698.
- Roscher, W. (1870), Zur Gründungsgeschichte des deutschen Zollvereins. Deutschland (143–211), The article was also published as a separata by the publisher Stilke & Muyder.
- Sapir, A. (2001), Domino effects in Western European regional trade, 1960–1992. *European Journal of Political Economy* 17(2): 377–388.
- Schmölders, G. (1954), Der deutsche Zollverein als Vorbild einer wirtschaftlichen Integration in Europa. Pp. 137–148 in: *Aspects financiers et fiscaux de l'integration economique internationale*. Cambridge and London: Van Stockum.
- Tena-Junguito, A., M. Lampe, F.T. Fernandes (2012), How much trade liberalization was there in the world before and after Cobden-Chevalier? *The Journal of Economic History* 72(3): 708–739.
- Treitschke, H. (1897), *Deutsche Geschichte im 19. Jahrhundert*, vol. IV. Berlin.
- United Nations (1947), Customs Unions. No. 1948, 3 in *United Nations Publications II, D: Trade, financial and commercial studies*. Lake Success, NY: United Nations.
- Viner, J. (1931), The most-favored-nation clause. Index, VI, 61. Published by Svenska Handelsbanken. Pp. 262–273 in: K. Anderson, B. Hoekman (1994), *The global trading system*. Volume 2, Core rules and procedures. Reprint.
- Viner, J. (1950), The customs union issue. No. 10 in *Studies in the administration of international law and organization*. Anderson Kramer Associates.
- Weber, W. (1869), *Der deutsche Zollverein: Geschichte seiner Entstehung u. Entwicklung*. Veit & Comp, Leipzig.
- WTO (2011), *World Trade Report 2011 – The WTO and Preferential Trade Agreements: From Co-existence to Coherence*.
- Zollvereinsblatt (1846), Discussion zwischen dem Rheinischen Beobachter und der Allgemeinen Zeitung über die Frage: ob bei der Auflösung des Zollvereins die süddeutschen Staaten gewinnen oder verlieren würden? Vol. 4: 74–77.
- Zwiedineck-Südenhorst, O. v. (1926), Das Problem eines deutsch-österreichischen Zollvereins. *Jahrbücher für Nationalökonomie und Statistik* 124(5): 385–402.
- Zwiedineck-Südenhorst, O. v. (1935), Zur Entstehungsgeschichte des Deutschen Zollvereins. *Jahrbücher für Nationalökonomie und Statistik* 142(1): 25–34.

Prof. Dr. Switgard Feuerstein, Department of Economics, University of Heidelberg, Bergheimer Straße 58, 69115 Heidelberg, Germany, and GER, University of Nottingham.
Switgard.Feuerstein@awi.uni-heidelberg.de