

# **Did British and German Trade Regionalisation Trigger Commodity-Market Disintegration during the Interwar Years? Empirical Evidence from the Scandinavian Countries**

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## ABSTRACT

In this article the impact of the interwar disintegration in Scandinavia is examined. The subject is approached by an analysis of the regionalisation policies of Germany and the UK and foreign trade, and relative commodity market prices, in Scandinavia. The empirical evidence shows that the British trade policies had a stronger and more negative impact in Denmark than in Sweden and Norway, where trade was encouraged. However, all Scandinavian countries experienced increasing relative commodity market prices, and thus followed the general pattern of market disintegration.

## **1. Introduction**

This article adds to the literature on the consequences of the interwar trade policies in Europe. According to the orthodox view, this was a period of deep and rapid economic and political disintegration and de-globalisation, and increasing political tensions between the rivalling blocs, which culminated in the outbreak of the Second World War<sup>1</sup>. The disintegration was fuelled by great powers such as Great Britain, Germany, France and the US, which developed distinctive

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<sup>1</sup> There are several classical references available. Some of them have been collected in M. Thomas (ed.) (1996), *The disintegration of the world economy between the world wars*, Cheltenham, Elgar.

protectionist features and imperial ambitions by way of their trade policies. In the Scandinavian countries, the economic slump was short and not as deep as in most other countries. Considering that economic growth in Scandinavia depended on access to the British and German markets, this stands out as a diverging example. The purpose of this article is to examine whether German and British trade policy had a negative or positive impact on the commodity markets in Scandinavia.

The mobility of factors, goods and services promotes economic integration since the supply is equalised, and theoretically, in perfectly integrated markets, commodity market prices are equal. Accordingly, the pattern of economic integration may be analysed by way of the volumes and the geographical pattern of trade, which reflect mobility, as well as the relative commodity prices, which may reflect the supply of factors, commodities and services.

In section II, the disintegration of trade and the de-globalisation is outlined in brief, while in section III and IV focus is placed on the experiences of the Scandinavian countries, which are presented and analysed by way of their trade policies, the concentration of foreign trade, the trade volumes, the geographical pattern of trade, and finally the pattern of relative commodity market prices. In section V, the article is concluded.

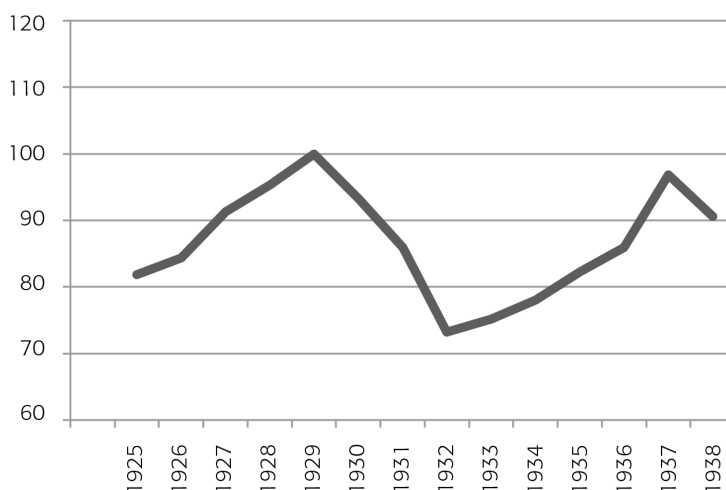
## **2. The Disintegration of the World Trade**

After the introduction of the Smoot-Hawley tariff in 1929, and as the stock-market exchange turbulence began to spread to the trading partners of the US, protectionism escalated (see Ch. 3 in Irwin 2011). Diagram 1 below displays this dramatic development. After trade was resumed during the mid 1920s, it peaked and then collapsed. From 1929 to 1932 world trade

volume declined by 27 per cent. After 1933-34, when international trade was reorganised into bilateral exchange agreements (Kindleberger 1989, pp. 282-283), the trade flows began to increase again. But in 1937, the value of trade still fell below of 1929.

Quickly, tariffs and beggar-thy-neighbour policies became frequently and unilaterally imposed, mainly without interstate or even domestic coordination, while monetary policies were implemented as counter-measures in order to protect the domestic economy (for instance Eichengreen 2003, pp. 211-212).

**DIAGRAM 1**  
World trade indices, 1924-1938 (1929 = 100)



Source: Maddison, 1995.

The collapse of trade was strongly related to the tariff war. Findlay and O'Rourke (2007 p. 445, 448, 458-459) have shown that in 1929-1931 the average European tariffs on foodstuffs and manufactures increased to a level of 73 and 39 per cent respectively. In 1929-1932, while trade in primary products declined by 13 per cent, the trade in manufactured goods fell by

42 per cent. The tariff war continued until the outbreak of World War II, especially in 1937-38 when world trade began to decrease and primary products' prices fell, which was followed by further tariffs being levied. Before the outbreak of war, nearly half of the world's trade was restricted by tariffs (Kenwood, 1999, p. 204). In light of this, trade growth in 1934 and particularly in 1936-1937 appears noteworthy.

Commercial relations were polarised into spheres centred on competing currency blocs, like the Reichsmark bloc of inconvertible currencies, the Sterling area, and the Gold bloc (Eichengreen and Irwin 1993, p. 2). However, world trade was reorganised bilaterally, within the regionalised blocs, and as a result, trade was diverted. Consequently, this means that the disintegration was driven by the trade policies of the industrialised countries. From 1928-1938, the share of British exports to the Commonwealth countries increased from 44 to 50 per cent while the share of imports increased from 30 to 42 per cent. Similarly, during the same period, French exports to her colonies increased from 19 to 28 per cent while imports increased from 12 to 27 per cent. Germany turned to adjacent countries in the southeast of Europe and to Latin America. Between 1928 and 1938 German imports from these regions increased from 17 to 28 per cent while German exports to them increased from 13 to 25 per cent (Eichengreen and Irwin 1993, p. 7; Volkman 1975, pp. 82-85).

From 1929 to 1934 the English exports declined by 23 per cent while German fell by 70 per cent (diagram 2 below). After 1935, world trade volumes began to increase again, although at very slow rates – especially as regards German trade. In 1938 German exports were still less than those of 1929. English trade increased somewhat faster. But still in 1938 the export level only came to 35 per cent of that of 1929.

Industrialised countries in Europe such as Germany and the UK experienced the hardest fall<sup>2</sup>. Consequently, these countries took the strongest measures. The English interwar trade policies differed in nature from those of Germany, but in terms of strategic policy considerations they had significant similarities. Both countries introduced commercial policies in order to increase their exports and to reduce imports. Moreover, they also developed a preference for bilateral commercial exchange, aimed at tying raw material and primary commodity producing countries to themselves, while at the same time providing for market shares or even privileges for their export industries (Rooth 1986, pp. 54-55; Volkmann 1975, pp. 82-85).

The move towards policies that promoted regionalisation was particularly clear in the Sterling Area. The English re-oriented their imports from competing countries like Germany, France and the US to the Commonwealth countries (the Ottawa preference system) by, on the one hand, offering preferential treatment, and on the other by introducing emergency tariff legislation in November 1931 and the Importation Acts, beginning in February the following year (Kitson and Solomou, 1991, pp. 154-155). As mentioned, the tariffs were mainly placed on imports of manufactures and foodstuffs, whereas

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<sup>2</sup> According to the records of the League of Nations, the North American trade experienced the most rapid fall measured by per cent, but the European trade took the largest fall measured in dollars. In 1928, European trade turnover amounted to roughly 58 billion US dollars. In 1935 this turnover was a modest 20 billions dollars. (*Value of world trade*, Annex I, Europe's Trade, League of Nations, Economic Intelligence Service, 1941. *Europe's trade: a study of the trade of European countries with each other and with the rest of the world*, Geneva, League of Nations, p. 83). According to Kenwood (1999), *The Growth of the International Economy 1820-1990*, London and New York, Routledge, p. 212, Europe's diminishing share of the world trade was due partly to the trade of the Soviet Union, which decreased from 4 to circa 1 per cent from 1913 to the late 1930s.

raw materials were free of duty in order to encourage the export of raw materials rather than manufactures (Kitson, 1991, pp. 160-2. See also Feinstein *et al.*, 1997, pp. 151-156, 160-165).

The Germans followed a similar policy, but tariff levels seem to have differed between Germany's trading partners, depending on the outcome of bilateral negotiations. According to Chase (2005, pp. 98-101), Germany's trading partners reached agreements on customs and quotas preferences or tariff ceilings. But the tariffs and duties continued to increase, especially on agricultural products. According to Crucini (2003, p. 5) the German average *ad valorem* tariff indices (computed as the ratio of customs duties to total imports) 1930-1940 came to 26 per cent, while in the UK the average was 23 per cent.

### 3. The Trade Policies of the Scandinavian Countries

In Norway, Denmark and Sweden industrial growth resumed faster than in Germany and the UK. While the British and the German GDP per capita declined by 6.6 and 15.4 per cent respectively 1929-1931 (which saw the deepest dip), the average Scandinavian GDP per capita never fell below that of 1929, and in 1933-1934 the levels had increased by 2 and then 6 per cent. That year British and the German GDP fell by 4.1 and 2.9 per cent respectively (Maddison 1995, pp. 440-441).

It has been stressed that the Scandinavian economic recovery resulted from adaptive monetary and fiscal policy making (Aldcroft 1993, p 10). But this can only be part of the explanation. The Scandinavian economies depended on open trade channels for their economic growth, but the international market conditions were determined to a great extent by the policy choices of economic great powers such as France, the UK and Germany, and in some important aspects their interests diver-

ged from those of the Scandinavians. From the view of the Scandinavian countries, the tariff war was highly unwelcome. In December 1930, representatives from Norway, Sweden, Denmark, and the Benelux countries met in Oslo to confer on how to preserve multilateral trade relations and reduce trade barriers. The basic idea was to circumvent the tariff policies launched by the traditional large countries (although risking trade diversion) and to promote trade growth via alternative markets. But the following year the English pound was devalued and the gold-standard exchange system collapsed. The Scandinavian countries followed the British currency, while Belgium and the Netherlands adhered to the gold standard (Irwin 2011, p. 172; Roon 1989; for the Scandinavian trade policies, see Olsson 2010). Thus, the Oslo trade bloc never gained any practical significance. The liberal trade policies, however, remained a leading principle. Although policy measures generally associated with protectionism emerged in Scandinavia, they still were dissimilar from those of the UK and Germany. For instance, new tariffs were introduced in 1932 in Sweden and Norway, but they targeted “expendable” commodities for financial reasons, rather than being aimed at raising trade barriers in order to protect the domestic industries. (Ahevainen 1974, p. 236). Some of the measures were more or less automated counter responses to the monetary policy changes abroad. Countries that maintained the gold standard had to impose exchange controls or raise trade barriers in order to offset depreciations and reduce monetary and financial pressure (Irwin 2011, p. 172).

Another feature of the Scandinavian countries was the bilateralisation of commercial relations, which for obvious reasons was contrary to liberal principles. Despite that, the Scandinavian countries entered bilateral exchange agreements

with England in 1933 and with Germany in 1934 (Roll 2004, pp. 80-81, 83; Hedberg 2003, pp. 17-18). From then onward, the terms and conditions of economic exchange were determined in bilateral negotiations. Consequently, the importance of gaining bargaining power increased. This was hypothetically to the detriment of the Scandinavians since the relative importance of the exchange was greater for the Scandinavian countries than for the Germans and the British, which put the Scandinavian countries in a position similar to a monopoly/monopsony position, as suggested by Hirschman (1980, p. viii). According to Salmon (2010, p. 9, 14), the Scandinavian markets were among the first outside the Commonwealth to be targeted simply because their dependence on the British market placed them in a "weak" bargaining position, especially Denmark. Salmon has shown that this was reflected by the Scandinavians having to make far-reaching tariff concessions and submit to demands for market preferences, which, for instance, guaranteed Britain between 47 and 80 per cent of all coal imports into Scandinavia (Rooth 1986, pp. 61-62). Presumably, this fuelled greater regionalisation and a concentration in Scandinavian trade, which hypothetically enhanced the market influence of the UK and Germany in Scandinavia. On the other hand, it has been suggested that the bilateral commercial exchange developed on mutual terms and that by entering bilateral arrangements with Germany and the UK (Hedberg, 2010, p. 504), the Scandinavian countries maintained access to their traditionally largest markets. And according to Kitson and Solomou (1991, pp. 155-56), non-Imperial countries, among them Sweden, negotiated "favourable" trade agreements with England. Thus, in the literature, there are at least two interpretations of what the effects of the German and British trade policies towards the Scandinavian countries, in fact, were during the in-

terwar years. If Kitson and Solomos are right, the British (and perchance the German) trade policies provided for long-term commercial exchange and mutual benefits. If so, this should have been evident in Anglo/German-Scandinavian market integration. From this it could be expected that even if Scandinavian trade was channelled to the British, this should have encouraged rather than hampered Scandinavian trade. Also, if commercial relations were developed on mutual bases, the integration should have been reflected in declining relative market commodity prices.

Vice-versa, if Salmon and Rooth are right, the opposite conditions should have been evident. If the Scandinavian countries were targeted and successfully annexed to the British and the German trade systems, this should have been evident in the geographical pattern and concentration of Scandinavian trade. Accordingly, if British and the German market influence entailed trade diversion, this should have been evident in the pattern of trade flows. In addition, if increased market influence was accompanied by British and German rent seeking strategies, this should have resulted in increasing relative commodity market prices. If the first hypothesis is correct, this might help to explain why trade and growth in general was resumed relatively quickly in Scandinavia, and if the second hypothesis is verified this might support the literature on the impact of British and German trade policies on the interwar disintegration, with empirical evidence from the Scandinavian countries.

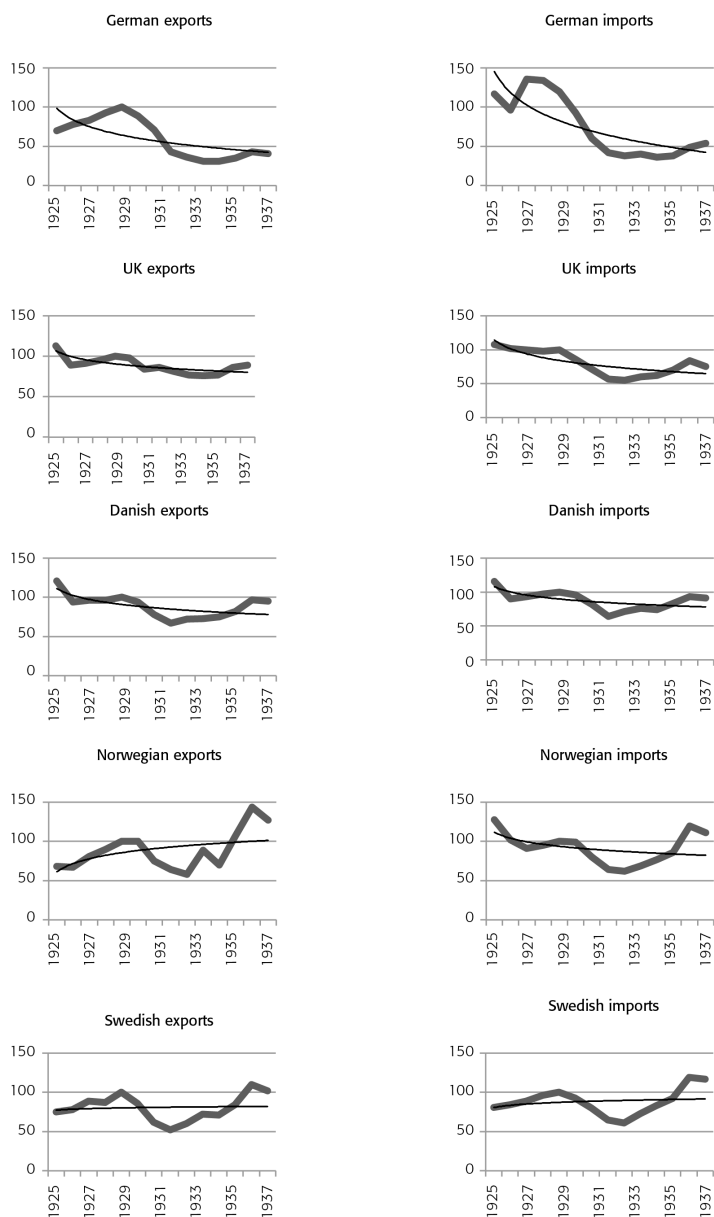
#### **4. The Pattern of the Scandinavian Foreign Trade**

From 1929 to 1938 Denmark, Sweden and Norway experienced an income growth of 18, 26 and 31 per cent respectively, while industrial production increased by 36, 46, and 27 per cent

(Rooth 1986, p. 362, 364). Although the economic development of the Scandinavian countries, and in particular Sweden, is stressed as a contrasting example to the economic stagnation of the 1930s, there were few signs of recovery during the years that followed the introduction of the Smoot-Hawley tariff. (Regarding the Swedish feat, see Schön 2010, pp. 299-307). The foreign trade of Germany, the UK and the Scandinavian countries is displayed below (Diagram 2). In 1929-1933, Scandinavian trade declined faster than UK trade, although not as rapidly as German. In these years the exports as well as the imports of Sweden and Denmark declined by nearly 30 per cent, while in Norway exports and imports declined by 11 and 30 per cent respectively.

As in the UK and Germany, trade flows began to increase after 1935. In 1938, the Norwegian export level exceeded that of 1929 by more than 25 per cent. The Swedish export level exceeded that of 1929 marginally (by 2 per cent). The Danish export level still fell below that of 1929 by 5 per cent. On the whole, Norway's trade was an exception, and followed a positive trend. In Denmark the trend was overall negative while in Sweden the exports were relatively stable whereas the imports increased. In a way, this suited Norway and Sweden, since their exports were heavily oriented towards raw materials such as iron ore, steel, whale oil and forestry products. But as regards the agrarian dominated Danish export, however, the British tariffs impeded the trade growth. This is confirmed by Kitson and Solomou (1991, pp. 159-62), whom show that the share of raw materials in Denmark's imports from its non-British partners increased (while manufactures declined) after 1929 until the outbreak of the war, similar to the exchange between Germany and its small partners. This partly explains the relatively positive trends of the Swedish exports and imports

**DIAGRAM 2**  
Trade indices of the UK and Germany, and the Scandinavian countries, 1913-1938 (1929 = 100)



Source: See Appendix 1.

and the Norwegian exports. But at the same time, this contradicts the claim that the Anglo-Scandinavian trade was favourable to all Scandinavian countries.

Like the world trade (as well as the German and British trade), the fastest decline in the trade of the Scandinavian countries coincided with the raising of tariffs, which preceded the move to bilateral commercial relations. The trend shift occurred after the bilateral agreements with Germany and the UK had been concluded and put into practice. Judging from the development of the trade volumes, the disintegration was not worsened by bilateral agreements, which at the time was regarded as the opposite of the preferred liberal trade policies.

It is generally acknowledged that the regionalisation that followed from the move to protectionist policies after 1932 dislocated the commercial relations and triggered the disintegration (Kenwood 1999, p. 205). Even though the US Smoot-Hawley tariff policy set off the initial wave of trade protectionism, the regionalisation during the following years was given momentum by the English and German trade policies.

The countries that became the primary targets of the English and German plans for expanding trade experienced a concentration of their trade as their trade was regionalised. On the one hand, the Scandinavian countries took a secondary position in the German and British plans, but when the economic competition between Germany and England stiffened, from 1936 onward, their interest for other countries increased. But as is demonstrated in Table 1 below, this did not lead to any particular increase of the British or German share of the Scandinavian markets, with the exception of Denmark's. The British accounted for about 1/3 of the Danish imports and no less than 2/3 per cent of the exports during the period. The largest increase occurred in 1933 to 1938; in 1938 the trade British share

**TABLE 1**  
**The market influence of the UK and Germany in Scandinavia.**  
**The British and German shares (in per cent of total) of the**  
**Scandinavian trade, 1929-1937. Three year average**

		The UK				Germany			
		1925 1928	1929 1932	1933 1935	1936 1938	1925 1928	1929 1932	1933 1935	1936 1938
Denmark	Import	13	17	31	36	31	32	22	25
	Export	62	64	63	55	22	16	15	20
Norway	Import	21	22	21	17	20	22	19	18
	Export	28	26	23	25	12	12	13	14
Sweden	Import	18	16	19	15	30	31	27	22
	Export	24	26	26	24	13	12	13	17

Source: See Appendix 1.

of the Danish imports was doubled in comparison with that of 1929/32. The increasing British market influence in Denmark coincided with British plans to concentrate their imports to the Commonwealth by offering preferential treatment, and the introduction of the emergency tariff legislation, which was put in effect in 1932. In 1933/35, the British share of the Danish exports decreased to 55 per cent. This probably was a result from the British importation acts that were introduced in 1932 (Kitson, 1991, pp. 154-155). Since the tariffs targeted UK imports of foodstuffs, which accounted for the largest share of the Danish export, this explains the declining exports.

Germany never managed to expand their trade shares in Scandinavia during the period, with the exception of a modest increase as a market for Swedish exports (from 15 to 20 per cent) between 1933/35-1936/38, which depended on the currency arrangements of the German-Swedish bilateral exchange clearing system that encouraged Swedish export industries – in particular raw material exporters – to increase their activities on the German market (Hedberg 2010, pp. 103-105).

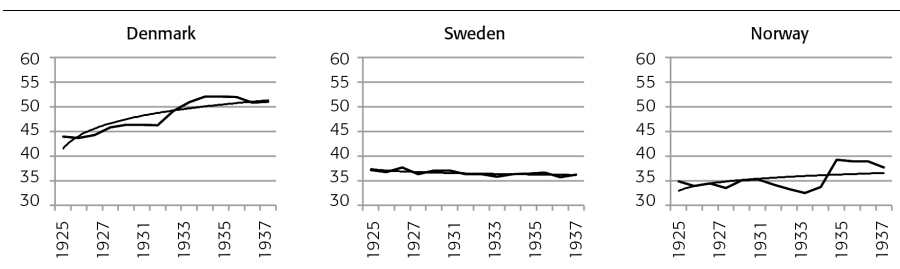
In 1925/28, the German export industries accounted for about 1/3 of the Danish and the Swedish and circa 1/5 of the Norwegian imports but this declined slowly the following years. The overvalued Reichsmark is commonly pointed to as one cause, but in addition, it would be plausible to assume that the German measures to reduce the pressure on their current accounts by promoting exports, through levying subsidies in combination with restrictive import controls, were considered at least insufficient and perhaps irritating by Scandinavian exporters and importers of German commodities (see for instance Ebi 2003).

Germany and the UK were the largest trading partners of the Scandinavian countries, but the influence of the Scandinavians on the German and the British markets was small, especially when taking into consideration that the Scandinavian countries' shares of the British and the German market were minor. As for comparisons, in 1929, the Danish share of the British and the German market came to 4.6 and 2.8 respectively; the Norwegian exports accounted for 1.2 and 1 per cent, while the Swedish share was 2.1 and 2.6 per cent. In 1936 the Danish share of the same markets came to 3.9 and 3.7 per cent. The Norwegian share of the British and the German market was 1 and 2.1 per cent while the Swedish exports there had increased modestly to 2.4 and 4.5 per cent respectively (Sources: Appendix 1). But even though the Scandinavian market influence in Germany and the UK was biased in favour of the latter, this did not mean that it was insignificant – or else these countries would have not have launched strategies in order to include Scandinavia into their regions.

In Diagram 3 below the trade development of the Scandinavian countries during the interwar years is presented in a concentration index. The formula is  $C = \sqrt{\sum si^2}$  where C repre-

**DIAGRAM 3**

The concentration of trade in Scandinavia, 1915-1938. Log linear trend lines



Source: See Appendix 1.

sents the concentration of the country's foreign trade,  $s$  the market share of the countries trading with the specific country and  $i$  the sum of the turnover ( $m + i$ ). The higher the ratio, the stronger the position of a single trading partner (a ratio of 100 would signify that the country was completely monopolised by one trading partner, whereas a zero ratio would suggest that the country was trading with an infinite number of countries, each taking an infinitely small and equal share of the country's trade). According to Hirschman (1980, pp. 102-3) a concentration ratio above 40 should be considered high, while ratios below that are normal or low. As a comparison the export and import ratios of the UK in 1913-1938, computed by Hirschman, declined from 27.7 and 22 to 21.8 and 19.6 respectively (Hirschman, 1980, p. 103). This confirms that the British trade was distributed to an increasing number of countries during the period. The Danish ratio came to 44-46 in 1925-1931, which depended on increasing demand for Danish foodstuffs as mentioned above. In 1932 the concentration of trade increased, parallel with the exports to the UK. This was both the year of the Ottawa Conference and the year when the Danish choose to remain tied to the Sterling area – but it should be noticed that this trend began prior to the bilateralisation. In the following years the Danish ratio increased above a ratio of 51 and

peaked in 1934-1935 (52). For comparison it should be noted that the Danish trade followed the same pattern of concentration as the countries in the East and South East of Europe. Just before the outbreak of the war, the ratio of the latter ranged from 40-60 (Hirschman 1980, pp. 102-103).

Taken over the whole period, the Norwegian trade became more concentrated as well, but there the rapid increase occurred in 1934-1935, which was due to the bilateral trade agreement with Germany. This exchange provided for increased imports from and exports to Germany, which was evident in Diagram 2. According to the Norwegian trade statistics, the Norwegian exports and imports from Germany increased by 54 and 56 per cent respectively during 1934-1938. The increase of the UK exports and imports during the same period came to 38 and 14 per cent. This increase is not displayed in table 1 above since the total imports increased by 62 per cent while the total exports increased by 36 per cent after the bilateralisation of the trade (See Appendix 1). The highest Norwegian ratio came to a modest 39 (in 1938) though, which suggests a degree of concentration.

Finally, the Swedish trade was surprisingly evenly distributed during the period. During the 1930s the value never exceeded 37, which should be regarded a low value. Table 1 above shows that the imports from Germany declined 1932-1937 (while imports from the UK were stable), which indicates that Sweden attempted to follow the intentions of the Oslo convention. Although the UK and Germany still accounted for the largest share of the Swedish trade, it is clear that Sweden gained access to alternative markets, such as Argentina and Brazil (sales of autobuses, milk separators, telecommunication apparatuses, light bulbs etc. and purchases of foodstuffs) (Runblom 1971, p. 24).

Did the concentration of the trade and the regionalisation impede or promote trade in Scandinavia? In Table 2 below the impact of the concentration of trade to the trade flows in Scandinavia is analysed by way of an OLS analysis. The formula is  $Y = a + \beta x$ , where  $Y$  is the dependent variable, the value of the exports and imports (current prices), while  $x$  represents the independent variable, the trade concentration ratio. Because of the low number of  $N$  (28  $N$  per variable), the OLS-method was chosen in order to maintain the statistical power. The results should of course be considered with caution because of the small population. Using Pearson, Kendall's tau and Spearman's rho correlation test, most variables were significant at the 0.05-level (two-tailed).

The interwar years have been divided into two periods, which each had separate features. The first period, 1929-1933, was characterised by the tariff war, the breakdown of the gold standard, the international financial crisis, and the collapsing

**TABLE 2**  
The impact (linear correlation, adjusted  $R^2$ ) of the concentration of trade to the export and import in Scandinavia, 1925-1938.  
Beta coefficients in parenthesis represent the trend

		1929-1933	1934-1938
Denmark	Import	.641 (-.801)	.658 (-.811) *
	Export	.546 (-.739)	.668 (-.817) **
Norway	Import	.937 (.968)**	.055 (.235)
	Export	.838 (.916)*	.196 (.442)
Sweden	Import	.883 (.940)**	.769 (.877)*
	Export	.769 (.877)*	.446 (-.668)

Note: Confidence level set at 95 per cent. \*\* Significant at 5 per cent level, \* significant at 10 per cent level. (N = 28 per variable).

Source: Table Diagram 2 and 3.

world trade. The preceding years were characterised by resumed trade and recovery and are of little interest as regards the main purpose of the article. When included in the analysis all the statistical signs were wrong and thus the model is unfit for this kind of analysis. Therefore these years were left out of the analysis.

The assumption is that while the concentration of trade increased, the trade flows either decreased as a result of the British and German trade strategies or increased as a result of the strategies to channel the trade into the regions. This impact, either positive or negative, is expected to have been stronger during the second period, which thus should be reflected in strong correlations and either negative or positive beta coefficients.

The trade concentration ratio as well as the development of the trade differed between the countries and it is no surprise that the regression results diverge. First, the results of the Danish case, presented in Table 2 below, show that the first period was not significant. During the second period however, a strong and significant correlation between the Danish trade concentration ratio and the Danish trade was present (the  $R^2$  for the import was .658\* and the export .668\*\*). The beta coefficients were clearly negative (-.811 and -.817 respectively). Contrary to the Danish case, the correlation between the Swedish and the Norwegian trade and the concentration ratio was strong and significant during the first period ( $R^2$ 's of .833\*\* and .769\* and .937\*\* and .838\*), while the beta coefficients indicated a very positive relationship ( $R^2$ 's of .968 and .916). During the second period the result from the Norwegian case was insignificant. Finally, the correlation between the Swedish trade concentration ratio and imports was strong ( $R^2$  .769\*) while the beta coefficient indicated a positive relationship (.877), similar to the preceding period.

The relationship between the German and British market influence in Scandinavia was distinctive as regards the Danish, but not in the Swedish and the Norwegian case. In Denmark the concentration of trade seemed to have had a negative impact on the trade, which to a fairly large extent explains the slow growth of the Danish trade. This might well have been a result from the worsened conditions of trade, in all probability the tariffs on foodstuffs introduced in February 1933. Considering that bacon, butter and eggs accounted for more than 90 per cent of the Danish exports to Britain, the Danish trade was more vulnerable than that of Sweden and Norway (Rooth 1986, p. 360).

If British and German trade policy worsened or improved the conditions of the trade, this should have been evident in the pattern of the relative prices. Below, a price correlation test and a relative price analysis are presented. In the following, the relative market price trends are analysed with regard to the correlation with the concentration of the trade and the imports and exports. For the purpose of the price analysis, about 50 commodity market prices have been collected. The commodities have been selected with regard to price elasticity and were typical for the intra Anglo-Scandinavian trade. The price analysis is completed by an attempt to determine which of the above-discussed factors had greatest influence over the relative price movements in Scandinavia.

The German and the British shares of the Scandinavian trade remained on high and stable levels. In Table 3 below it is confirmed that the UK and German markets were interconnected. The average market prices of the commodities trade between Scandinavia-Germany-The UK covaried more strongly than that of the market prices of international commodities. This indicates that the Anglo-German-Scandinavian markets

**TABLE 3**

The correlation (Pearson) between the average commodity market prices of goods produced and traded in the intra Anglo-German-Scandinavian trade (average market prices, internationally traded goods included in parenthesis), 1925-1938

	Denmark	Norway	Sweden	The UK	Germany
Denmark	1				
Norway	.765** (.377*)	1			
Sweden	.828** (.302)	.793** (-.664**)	1		
The UK	.739** (.298)	.948** (.665**)	.706** (-.339)	1	
Germany	.674** (.413*)	.800** (-.459*)	.845** (.920**)	.783** (-.052)	1

Note: \*\* Correlation is significant at the 1 per cent level. \* Correlation is significant at the 5 per cent level (2-tailed).

Source: See Appendix 2.

gravitated closer towards in particular the UK but also Germany, and at the same time swerved away from the international “average”; or more accurately put, Denmark gravitated closer to the Sterling area while Norway developed relations with Germany, whereas Sweden balanced between the great powers.

Thus, the market prices in the UK, Germany and the Scandinavian countries covaried, which only indicates that the prices moved simultaneously. But in which direction did they move? Below, in Tables 4a and 4b), the relative price analysis is presented. This part draws from a work by O’Rourke, who analysed the impact of the continental blockade during the French Revolutionary and the Napoleonic Wars. O’Rourke suggested that if the blockade disrupted the trade, the relative prices of exported commodities should have increased, while the relative prices of imported goods should have declined, and consequently the price gaps between the export and import markets for should have increased (O’Rourke 2007, p. 132).

**TABLE 4A**  
Relative price differences commodities in the intra  
Anglo-German-Scandinavian trade, in 1925-1938

Commodity	Country	1925-1928	1929-1933	1934-1938
Oats/Coke	Norway	-5.10	-30.15	30.26
Potatoe/Coal	Denmark	35.33	-28.77	12.11
Live Cattle/Coal	Denmark	11.78	-28.40	28.46
Cheese/Coal	Sweden	-7.90	-27.84	16.24
Pork/Coal	Sweden	-1.85	-23.33	71.86
Bacon/Coal	Denmark	11.15	-21.99	26.02
Potatoes/Coal	Norway	-11.53	-16.92	14.83
Bread (rye)/Coal	Denmark	13.49	-16.42	31.59
Stockfish/Coal	Norway	-11.51	-15.75	-6.26
Oats/Coal	Norway	-5.15	-15.29	43.11
Wheat (flour)/Coal	Denmark	2.92	-12.76	27.80
Paper Pulp/Coal	Sweden	-12.66	-11.35	10.96
Wheat (flour)/Coal	Norway	-14.72	-10.03	8.39
Coal/Wheat (flour)	Germany	-31.87	-9.49	12.33
Cod/Coal	Denmark	-11.00	-8.45	7.54
Coal/Pig Iron	The UK	-2.84	-7.89	-9.10
Cheese/Coal	Denmark	22.28	-7.89	9.98
Pig Iron/Coal	Sweden	-11.76	-6.38	97.30
Coal/Timber	The UK	.00	-2.89	19.78
Butter/Coal	Sweden	3.98	-2.58	19.71
Bread/Coal	Sweden	3.37	-2.58	17.04
Coal Pig Iron	Germany	-16.97	-.89	17.90
Coal/Fertilisers	Germany	15.03	-.29	25.46
Coal/Bread (rye)	Germany	-38.20	-.04	7.65
Wheat/Coal	Sweden	-12.33	10.12	18.24
Wheat (flour)/Cheese	Norway	-1.72	10.80	1.00
Coal/Butter	Germany	-22.39	26.93	3.39
Coal/Live Cattle	Germany	-26.71	31.09	-18.82
Coal/Butter	The UK	54.03	31.43	.49
Coal/Pork	Germany	-12.59	36.15	2.94
Coal/Wheat	The UK	-2.54	55.04	-19.93
Coal/Bacon	The UK	9.73	77.52	34.75

Source: See Appendix 2.

**TABLE 4B**  
**Relative price differences in Scandinavia, the UK and Germany**  
**of internationally traded commodities**

Commodity	Country	1925-1928	1929-1933	1934-1938
Coal/Tea	The UK	.00	-71.81	620.56
Live Cattle/Rice	Denmark	-5.61	-34.82	61.76
Live cattle/Tea	Denmark	-28.47	-32.91	37.73
Live cattle/Coffee	Denmark	11.78	-28.40	28.46
Live Cattle/Petroleum	Denmark	-15.28	-28.30	38.65
Wheat/Sugar	Norway	-20.31	-25.37	35.48
Pork/Petroleum	Sweden	-14.83	-24.08	69.47
Live Cattle/Sugar	Denmark	-11.63	-23.75	33.87
Coal/Sugar	Germany	-30.99	-22.59	7.49
Oats/Coffee	Norway	-3.45	-11.73	103.10
Wheat/Petroleum	Norway	-19.17	-8.83	27.96
Butter/Coffee	Sweden	9.06	-4.06	24.30
Cod/Cocoa	Norway	-16.21	-2.43	18.40
Cheese/Cotton Seed	Sweden	-15.77	-.46	-16.89
Wheat/Sugar	Sweden	.89	8.75	5.79
Coal/Sugar	The UK	-20.30	23.66	39.44
Coal/Cloth	The UK	.00	25.89	51.79
Bread (rye)/Ground nut	Sweden	.40	26.18	1.91
Coal/Rice	Germany	-27.42	35.09	-11.70
Coal/Tea	Germany	-18.08	47.18	.03
Coal/Cocoa	The UK	-10.48	84.00	38.39
Coal/Coffee	The UK	-32.42	100.23	95.98
Coal/Spices (White pepper)	The UK	-13.10	110.21	571.13
Coal/Coffee	Germany	-24.26	113.76	16.56
Coal/Cotton	Germany	-10.69	115.73	48.08
Coal/Cocoa	Germany	-46.80	129.60	-28.40

Source: See Appendix 2.

For the purpose of comparisons in time, the prices have been sorted into periods (1925-38, 1939- 33 and 1934-38) in a similar manner as was presented in relation to Table 2 above. Between 1925-1928, when the world trade boomed, close to all relative

prices of intra traded (Table 4a) as well as internationally traded commodities (Table 4b) declined, and Germany (in particular) and the Scandinavian countries accounted for the largest declines. However, in Denmark there was a tendency towards increasing price gaps between domestically produced foodstuffs and fuels already during the first period. The largest relative price increases between 1925 and 1928 were noted in the UK (the price of coal/Danish butter increased by 54 per cent) and in Denmark (potatoes/coal and cheese/coal increased by 35 and 22 per cent respectively), thus before the British introduced the Ottawa tariff policies. It is worth noting that although the tendency of increasing prices was weak in comparison with that of the 1930s, this tendency was stronger in the intra Anglo-German-Scandinavian trade than in their trade with the rest of the world (mainly long distance imported commodities).

With regard to the collapsing world trade flows and the disrupted trade channels, it is not very surprising that the relative commodity prices began to move differently between 1929 and 1933. The price gaps between Germany and the UK and the rest of the world increased faster than in the intra Anglo-German-Scandinavian trade. This may well signify that the impact of the collapsing non-European trade was faster and deeper in Germany and the UK than in the intra-European trade. As regards the increasing price gaps in the intra Anglo-German-Scandinavian trade, the relation between coal and coke in the UK and Germany and on the other hand Danish butter and bacon, and domestically produced pork and wheat, which thus were protected by increasing tariffs, increased the fastest. It is worth noting that the Scandinavian relative commodity prices continued to decrease in general. Between 1933 and 1938, however, most relative commodity prices increased in Scandinavia as well as in Germany and the UK.

Between 1929 and 1933 the relative prices of wheat and wheat flour relative to coal in Germany, Norway and Sweden decreased by circa 10 to 13 per cent, while in Denmark and the UK the relative prices of wheat and coal increased by 10 and 55 per cent respectively. Between 1934 and 1938 the relative prices of the same commodities increased in Denmark (28 per cent), Sweden (18 per cent) and Norway (8 per cent). The relation of coal to pig iron followed a similar pattern. Between 1929 and 1933 the relative price in the UK, Sweden and Germany decreased by 8, 6 and 1 per cent respectively, while between 1934 and 1938 in Sweden and Germany the relative price of these commodities increased by no less than 97 and 18 per cent. In the UK, however, the relative price continued to decrease (by 9 per cent). Assuming that increasing relative commodity market prices reflect market price divergence, the last period, 1934-38, displayed market disintegration. This is especially clear when it is taken into consideration that the intra Anglo-German-Scandinavian trade flows increased during this period.

Finally, it is worth noting that the strongest relative commodity market price increase occurred during the third and not the second period, which is commonly regarded as being the period that experienced the deepest and strongest disintegration. In 1929-1933, the world trade collapsed (Diagram 1), the tariff wars raged and the gold standard system broke down and left the international payment system in deep disorder. The third period, in contrast, is often regarded as a period of resumed commercial exchange – although on different terms and conditions than during the free trade years during the second part of the 1920s. Turning to Table 4a, it is clear that even though the relative prices began to increase during 1929-1933, the following years between 1934 to 1938 was much more dramatic as regards the relative commodity market price disintegration.

Can any of the empirical evidence of disintegration dealt with above explain the relative commodity market price movements? In detail, the question of what caused the relative market prices to increase is complex and requires an elaborate model, which takes in aspects such as domestic production, trade costs, the structure and volume of tariffs and monetary conditions into consideration in order to draw accurate conclusions. However, the increase of the relative commodity market prices presented in Table 4a was a general trend, which coincided with the regionalisation and the UK and German policy changes after 1932 and in 1933-1934. The commodity market disintegration in approached from aspects related to the regionalisation and the concentration of the trade below.

Again, the period has been divided into two periods – the years previous to and after 1933, which was the year when increasing relative commodity market prices appeared as a general feature (see Table 4a). Thus two trends are expected: If the relative commodity market price increases in Scandinavia during the 1930s were related to the market influence of the UK and Germany, this would have been evident in significant correlations and positive regression coefficients with the features related to regionalisation and bilateralisation. Since most of the relative commodity market prices declined during the years prior to 1933, it is plausible to assume that the correlation between the market influence variables and the relative price movements was weak or insignificant, while the impact was the reverse (beta coefficients were negative).

Also, it is likely that the impact of the British and German market influence differed between the Scandinavian countries. In Table 1 and Diagram 3 it was shown that Denmark's trade became highly concentrated, while in Sweden the concentration of the trade was low throughout the period, and in Den-

mark, the concentration of the trade had a negative impact on the trade whereas in Sweden the figures indicated that the trade was encouraged.

Again a linear regression analysis was chosen on the same basis as before in the article. The dependent variable represents the relative commodity market price, while the independent variables are the trade concentration ratios and the German and the British share of the Scandinavian countries' trade, which are regarded as proxies for German and British market influence. The following variables selected are the German and the British average relative commodity market prices.

The correlation between the Danish relative commodity market prices and the British market influence was stronger than in Sweden (and the beta coefficients more positive). As regards the Norwegian experiences, it was clear that the German market influence over Norway increased after the conclusion of the German-Norwegian bilateral exchange clearing agreement 1934. But the correlation between the concentration of the Norwegian trade and the trade flows didn't show any signs of correlation or insignificance.

The regression results of the relative commodity market prices and the regionalisation, however, are in line with most of the expectations. First, two trends were discernible. During the years prior to 1933, the correlation between the price movements and the regionalisation showed mainly the wrong signs for correlation and was statistically insignificant, while during the second period, the relation showed the opposite, with some exceptions, particularly as regards the Danish experiences, which comes as no surprise considering the close ties to the UK. There, the concentration of the trade during the first period seems to have correlated negatively, which thus means that the relative commodity prices declined while the

concentration of the trade increased, though at slow rates. Between 1934 and 1938 the conditions had changed in some important respects since the correlation was strongly positive. This correlation was present between the price movements and the British share of the trade, which were used as proxies for market influence. The influence from the UK seemed stronger than from Germany. It is worth noting that neither the British nor the German relative prices correlated during the first period, while in the second they correlated strongly and positively. Unlike what was the case with the UK share of the Danish trade, the German share had no impact on the relative price movements.

**TABLE 5**  
Determinants of the commodity market disintegration. Regression results (adjusted R<sup>2</sup>) for the Scandinavian countries' commodity market prices (beta coefficients in parenthesis), 1925-1938

	Denmark		Norway		Sweden	
	1925-33	1934-38	1925-33	1934-38	1925-33	1934-38
The concentration of the trade	.642** (-.819)	.948*** (.978)	.257* (-.570)	.062 (.500)	.332* (.619)	.184 (-.429)
The British share of the trade (proxy for the trade with the UK)	.185 (-.525)	.866*** (.943)	.213 (.462)	-.240 (.089)	-.131 (-.239)	.462* (.743)
The German share of the trade	.086 (-.433)	.068 (-.472)	-.088 (.180)	.634** (.841)	.014 (-.352)	.631* (.832)
UK relative commodity market prices	-.092 (-.172)	.921** (.970)	-.118 (-.080)	.961** (.985)	.034 (.186)	.717* (.888)
German relative commodity market prices	.123 (-.436)	.700* (.866)	-.091 (.091)	.703** (.873)	.035 (-.377)	.513* (.771)

Note: Confidence level set at 95 per cent. \*\* Significant at 5 per cent level, \* significant at 10 per cent level (N = 28 per variable).

Source: See appendix 1 and 2.

As regards the Norwegian and the Swedish experiences, the relative commodity prices increased alongside with both the British and the German relative commodity market prices. This indicates that the German market influence over the Norwegian and the Swedish markets was more or less equal to the British over the Danish market. But the Danish empirical evidence from the regressions as well as the other analyses is stronger than the evidence from the Norwegian and the Swedish cases.

## 5. Conclusions

Although the empirical evidence differs between the countries, it is clear that the impact of the British interwar trade policies was stronger than the German – at least in Denmark – but that from 1934 onwards the German market influence over the Scandinavian countries was equally strong as the British. The Danes, who concentrated their trade to the British sphere, experienced impeded trade and increasing relative commodity market prices. The Swedes and the Norwegians in contrast, managed to develop their trade faster than the UK and Germany, but on the other hand, all Scandinavian countries seemed to have experienced increasing relative commodity prices when the exchange with the UK and Germany increased. The OLS analysis lends support to the assumption that the price increase was related to the German and British price trends.

The Danish case accords with the claims of Salmon that the countries, which wished to maintain their access to the British markets, had to accept deteriorated terms and conditions of trade. This might conflict with the claims of Kitsons and Solomou, that the Anglo-Danish trade agreements were to the benefit of the trading partners of the UK.

But also, the Scandinavian-British-German price trends moved simultaneously and were related to the market influence, which came with the regionalisation of the commercial relations. This could be interpreted that the Scandinavian countries were disintegrated from the world markets but not from Germany and the UK, since the relative price increase trend was stronger for the relative prices of international commodities than of commodities traded between Scandinavia, the UK and Germany. But at the same time it should be noticed that the relative prices began to increase when the Anglo-/German-Scandinavian trade increased. Hypothetically, the relative supply of goods, factors and services and consequently the increased trade should have been accompanied by declining relative commodity market prices. In that case, the increasing relative commodity market prices were a result from rent seeking British and German trade policies, which in all probability increased the costs of trade and rendered the trade less efficient than during the years previous to 1934. From this view, it is interesting that the growth in Scandinavia was faster than in most other countries. The question then is if this growth was achieved because of or despite the regionalisation and the British and German trade policies?

## **Appendix 1 - Sources of trade**

### **Germany**

The German trade data have been excerpted from the official statistics presented in *Deutschlands auswärtiger Handel. Statistisches Jahrbuch für das Deutsche Reich. Herausgegeben vom Statistischen Reichsamte*. 1930, 1936, 1939-1940.

### **The UK**

The figures of the UK trade are collected from the works of

B. R. Mitchell, *Overseas Trade. Values at Current Prices of Overseas Trade. Domestic Exports. Abstract of British Historical Statistics*. Cambridge University Press 1962, pp. 283-284.

### **Denmark**

The Danish trade statistics came from *Danmarks statistik. Danmarks vareindførsel og -udførsel*. Statistisk tabelværk V, Litra D 45-58. Handelslomsættning med forskellige Lande i Aarene 1925-1939.

### **Sweden**

The Swedish trade data is available in *Sveriges Officiella Statistik (SOS Handel). Berättelse för år 1915, 1924, 1929, 1934 and 1939 av Kommerskollegium*. (Värdet av Sveriges varuutbyte med främmande länder. Hela omsättningen).

### **Norway**

The data on the Norwegian trade is collected from *Statistisk Årbok för Norge*. Handelen med de forskjellige land i årene 1925-1939.

## **Appendix 2 - Sources of prices**

### **Germany**

The commodity market prices of pig iron were collected from *Ekonomisk Översikt* 1929, 1931, 1939/1940, Chamber of Commerce, "Detailed statistics of prices". The commodity market prices of live cattle and sugar were collected from *Statistisches Jahrbuch für das Deutsche Reich* 1936, 1939, (Lebensmittelpreise im Kleinhandel in einigen deutschen Städten) coffee (Santos), cocoa (Accra), coal (Westphalian), cotton (universal standard), fertilizers (Thomas phosphate), butter, live cattle, sugar, tea were collected from *Statistisches*

*Jahrbuch für das Deutsche Reich* 1936, 1939, ("Grosshandelspreise an deutschen Warenmärkten") while the prices of wheat flour, pork and rice came from *Statistisches Jahrbuch für das Deutsche Reich* 1936, 1939 ("Nahrungsmittelpreise (Jahresdurchschnitte) im Einzelhandel in Berlin").

## The UK

The English commodity market prices of cocoa (from Trinidad), Danish bacon, refined sugar (granulated), white pepper (Singapore), coal (Newcastle "best large steam"), raw cotton (Upland or Middling American), cloth (for shirting), raw silk (Milan), Swedish timber, rubber have been collected from "Commercial times – Weekly price current" in *The Economist*. December 25 1920; December 31 1921; December 23 1922; December 29 1923; December 20 1924; December 26 1925; December 25 1926; December 31 1927; December 29 1928; December 28 1929; December 27 1930; December 19 1931; December 31 1932; December 30 1933; December 22 1934; December 21 1935; December 19 1936; December 25 1937; December 24 1938. The commodity market prices of wheat and iron (bars) are available in Mitchell, B.R., *Abstract of British historical statistics*. Cambridge University Press 1962. p. 491. Wool (long wool, carded) was collected from *Ekonomisk översikt* of the Chamber of Commerce ("Detailed statistics of prices") 1931, 1939. Butter: *Statistische Jahrbuch für das Deutsche Reich* ("International Übersichten. Kleinhandelspreise wichtiger Waren im Ausland. Grossbritannien).

## Denmark

The commodity market prices in Denmark of rice, wheat flour and wheat, live cattle, cod, sugar and coffee were collected from *Statistische Jahrbuch für das Deutsche Reich* ("International Übersichten. Kleinhandelspreise wichtiger Waren im Ausland. Dänemark"), 1913, 1923, 1928, 1937.

The Danish commodity market prices of sugar cubes, coffee, cod and coal came from ("Detailpriser") *Statistisk aarbog* 1915, 1925, 1930, 1938.

### Norway

The commodity market prices of cheese, petroleum, coke, coal, wheat flour were collected from *Norges Officielle Statistikk*, Historical Statistics 1978. The prices of potatoes, oats, coffee, cocoa, sugar, cod and stock fish were gathered from the web based Statistics Norway ("Priser og prisindekser"): <http://www.ssb.no/histstat/aarbok/ht-0801-322.html>.

### Sweden

The Swedish commodity market prices of pig iron, coffee, sugar and sugar cubes, coal, wheat and paper pulp were collected from one source, namely *Ekonomisk översikt* of the Chamber of Commerce ("Detailed statistics of prices") 1931, 1939.

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