The Russian Disease:

Trade Blocs and Currency Blocs in the Inter-War Period and Their Effects on International Trade

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Abstract

This paper looks again into the issue of trade diversion through currency policy and exchange rate control in the 1930s, which are commonly cited as reference cases for the evaluation of present-day currency areas. Previous research, most prominently a gravity model by Eichengreen and Irwin (1995), has found evidence of little trade creation and substantial trade diversion for the 1930s. Employing new data and a slightly more general econometric setup, we argue that the case for trade diversion in the 1930s cannot convincingly be made. Trade diversion effects are visible in the respective areas already during the inter-war gold standards of the 1920s. The British-based currency and trade areas during the 1930s introduced little change to that, while the German-based currency areas actually reverted partly to trend. Trade diversion on a non-negligible scale was apparently introduced by the Soviet Union, which employed its foreign trade monopoly for strategic ends. Running our gravity regressions for non-Russian trade, the evidence for trade diversion in the 1930s disappears entirely.

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I. Introduction

(to be written: currency areas, optimal currency areas, connection with customs union / trade areas. Cite Economic Policy Article on trade diversion in COMECON area).
… One point of view argues that currency blocs often do work like trade blocs and act to divert trade away from third parties and toward currency bloc members. Eichengreen and Irwin (1995) have argued that the interwar period offers a particularly good test case. Currency and trade integration under the reconstructed gold standard of the 1920s ended in the doldrums of the Great Depression, Britain's departure from the gold standard in 1931, and the formation of competing currency and trade blocs characterized by mutual beggar-thy-neighbor policies. Imperial preferences granted by Britain to the members of the commonwealth after the Ottawa conference of 193X sought to establish a customs barrier around the Empire. Britain's departure from gold soon led to an unofficial sterling bloc that included the Commonwealth but also, e.g. Northern Europe. In 1931, Germany established an increasingly tight network of foreign exchange controls, while nominally still maintaining the gold parity. She negotiated an end to reparations in 1932 and went into partial default on her commercial debt from 1933 onward. At the same time, Germany channeled much of her foreign trade into a system of bilateral trade and clearing arrangements that aimed to redirect her trade away from the Western powers and toward Southeast Europe. The resulting reichsmark bloc has been identified with trade diversion since the work of Einzig (1938) and Ellis (1941). Hirschman (1945) built his theory of strategic trade policy on the interconnection between national power policy and foreign trade with the reichsmark bloc as a prime example.

Hirschman and later authors as Child (1958) observed that the system of bilateral trade agreements of the 1930s gave Germany monopoly power over its trading partners. Germany apparently directed the trade of its unequal partners away from third countries and towards its own trading bloc. In this way, it established an informal empire in Southeast Europe even before World War II Grenzebach (1988).

German imperialism had indeed defined “Mitteleuropa” as its target already in the First World War Fischer (1967). Romania in particular had been identified as a cornerstone of political hegemony already in the early 20th century Pearton (1971). During the inter-war period, the Danube valley became the object of fierce trade rivalry between Germany on the one hand and France and Britain on the other Ranki (1983). Trade expansion to Southeast Europe remained a distant yet concrete target of German politics throughout the Weimar Republic. A consensus view nowadays holds that Germany’s economic “Drang nach Osten” resumed already in 1930 and that Nazi trade policy from 1933 on merely followed earlier doctrine and practice Teichert (1984).

There is less agreement on the efficacy of the reichsmark bloc as a device to ensure German trade hegemony in the 1930s. Building on Kindleberger (1954), Neal (1979) examined the terms of trade implicit in Germany’s bilateral clearing arrangements to conclude that they gave little obvious advantage to Germany. In a controversy with Wendt (1981), Milward (1981) argued that Germany’s strategy of economic exploitation was a failure, largely because of heavy investment that was needed in the local economies before sizeable resource transfers could be made.

In a comparative study of the reichsmark bloc and the Commonwealth, [Eichengreen, 1993 #1012] have taken the data to a gravity model. Gravity models of international trade de-emphasize comparative advantage and explain bilateral trade flows between any two countries by distance and by the comparative size of their economies. In the context of the gravity model, a currency bloc would be considered trade-creating if the trade flows among its members are higher than size and distance would predict. Likewise, it would be considered trade-diverting if the trade flows between its members and third countries are lower than predicted by size and distance. Eichengreen and Irwin (1993) find that both the sterling and the reichsmark bloc were clearly trade-creating in this sense. On the other hand, there is some evidence that the reichsmark bloc and foreign exchange control were trade-diverting.

The present paper takes a fresh look at this issue. One of us Ritschl (2001) has argued previously that Eastern Europe’s trade flows in the inter-war period were heavily

influenced by the near-collapse with Russia after the Revolution. The Soviet Union established a foreign trade monopoly that regulated Russia's trade according to strategic criteria. One issue we want to explore is the extent to which these policies interfered with the Commonwealth and reichsmark blocs in distorting Eastern European trade relations. A second issue concerns path dependencies in trade among or across trade blocs. One of us (Wolf, 2002) has argued from the experience of Poland's inter-war unification that despite attempted economic integration, regional trade across the former borders inside of Poland remained significantly lower than predicted by a gravity equation. In the same fashion, it seems plausible that trade in the 1930s was still partly shaped by trade patterns that had formed before. As a third issue, we are interested in the extent and direction of Germany's autarky policy after 1933. In a classic study on occupied France in World War II, Milward (1970) has argued that Germany's autarky and import-substitution policies were largely unsuccessful and that occupied Western Europe was a backbone of the German war economy. Indeed, country studies on German trade with the Western powers after 1933 suggest that the driving force behind the reduction of trade was the changing threat of trade sanctions in the wake of the German debt default of 1933 (see Wendt (1971) on Britain, Schröder (1970) and Schuker (1988) on the United States and Schirmann (1995) on France).

The remaining sections of this paper are organized as follows. The next section presents data sources and methods. Section 3 examines the evidence for trade fromk a re-estimated gravity model. Section 4 turns to a narrower sample that excludes trade with Russia. Section 5 concludes.

II. Methods and Data

The basic idea of the gravity approach is to ignore comparative advantage and concentrate on locational factors instead. Transport and transaction cost increase with distance, so that any two countries will trade more if they are located closer to each other. Measuring the distance between any two countries is, of course, somewhat arbitrary. One pragmatic approach that is commonly used is to employ distances as the crow flies between capitals. Similarly, trade between any two countries increases

with national product and per-capita output in each of the trading partners' economies. We follow Eichengreen and Irwin (1995) in employing the following basic specification:

$$\ln(1+TRADE)_{ij} = a_1 + a_2 \ln(GNP_i \cdot GNP_j) + a_3 \ln(GNPC_i \cdot GNPC_j) + a_4 \ln(DIST_{ij}) + \ldots + u_{ij}$$

where the dependent variable is rescaled to take care of pairs with no trade flows at all. The effects of currency blocs on trade are obtained through the additional insertion of dummy variables into the equation, where for bloc *X*:

$$X_{\text{in}} = \begin{cases} 1, & i,j \in X \\ 0 & \text{otherwise} \end{cases} \quad , \qquad X_{\text{out}} = \begin{cases} 1, & i \in X \wedge j \notin X, j \neq i \\ 0 & \text{otherwise} \end{cases}$$

Positive coefficients on X_{in} then show a trade-creating effect on members of the currency bloc, while negative coefficients on X_{out} provide evidence of trade diversion away from trade with third countries.

Implementation is by measuring pairwise trade flows between countries in 1928, 1935, and 1938, for which both output and trade data exist. Eichengreen and Irwin (1995) employ the national product and population data provided by Maddison (1991). We opted instead for the data set of Prados (1999), which is based on revised national product estimates and, arguably, an improved measure of national purchasing powers that allow conversion of national currencies into US dollars. Among other things, the Prados data set employs a downward revision of German national product (from Ritschl and Spoerer (1997)), which may be important in assessing the possible effects of the reichsmark bloc on trade in the 1930s.

Our estimation methods also differ slightly. Whereas Eichengreen and Irwin estimate the gravity model for each of the three benchmark years separately, we instead chose to pool the data and allow for structural breaks in all variables.

III. Spotting Trade Diversion in the 1930s

Trade policies in the 1930s took a radical departure from the low-tariff paradigm that had still been prevalent in the 1920s. Driven by underconsumptionist doctrines fashionable in pre-Keynesian days, the United States had fostered capital exports in the 1920s Barber (1985). Wary of an import surge in the wake of increasing debt service, US trade policy turned more protectionist in the Smoot-Hawley tariff and even tolerated debt moratoria and defaults, most prominently in the case of Germany Schuker (1988). Germany's own trade policies were largely driven by the attempt to avoid sanctions by the creditor countries Ritschl (2002a) and at the same time prepare for war at maximum speed. Britain's preferences for the Commonwealth were intensified in the Ottawa agreement; to this added an informal Sterling area of countries that pegged their currencies to Britain after leaving the gold standard in 1931 (see e.g. Bernanke and James (1991)). A small number of gold bloc countries around France held to the parity up until 1935/6, when the prospects of returning to the previous monetary system (and of getting their money back from the Germans) had vanished.

All these different combinations implicitly define currency blocs, which often also had the characteristics of trade blocs. It is relatively straightforward to define the gold bloc, the reichsmark bloc, the sterling bloc and Commonwealth membership[1]. Less clear-cut is the range of the foreign exchange control system, which included the countries of the reichsmark bloc but went far beyond. One reason is that the nature of the bilateral trade and foreign exchange agreements varied widely, and that one country was a member in various different monetary arrangements. We take a pragmatic approach and look at all countries with which Germany had clearing agreements in non-convertible currency in 1938, as these were the cases where Germany most likely could exert leverage to her advantage[2].

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[1] As in Eichengreen and Irwin (1995), we define (for the set of countries in our sample, and denoting countries by international car license plates) the gold bloc as F, B, NL, CH, PL; the reichsmark bloc as D, YU, RO, BG, HU, AU; the commonwealth as GB, IRL, CDN, AUS, and the sterling bloc as GB, IRL, AUS, DK, SF, NZ, N, P, S.

[2] See Ritschl, Albrecht (2001), "Nazi Economic Imperialism and the Exploitation of the Small: Evidence from
Germany's Secret Foreign Exchange Balances, 1938-40.", *Economic History Review* 54, 324-245., Table 5. These countries are AU, YU, RO, HU, I, E, DK, S, SF, NL, N, TR.

Table 1 presents OLS results for the pooled data set from 1928, 1935 and 1938[3]. In these data we have included trade and GNP figures for Soviet Russia. As the GNP estimates for a planned economy with doubtful reporting practices are questionable, we allowed for structural breaks on the coefficients for Russia, both in the gravity model itself and among the fixed effects. To examine the role of the various currency blocs and the exchange control regime around Germany, we introduce intercept dummies a_x *X* for any currency bloc *X*. In addition, we introduce an interaction dummy b_x *X* * *Years1930* to capture the time effects during the 1930s. This enables us to compare the effects of the introduction of the currency blocs in the 1930s to trade distortions that may have existed already in the 1920s. Moreover, we introduce interaction dummies between the various currency blocs. If these blocs were distortionary, one could expect trade between any two of them to deviate systematically from the gravity model. We also look into the trade patterns of Eastern Europe, many of which had been created after 1918 as the so-called "cordon sanitaire" and which Britain and France were struggling to prevent from becoming Germany's economic *hinterland*[4]. Again, a number of interaction dummies was tried out, some of which are given in the table.

(Table 1 about here)

Table 1 provides the results from estimating the full equation and then successively testing down, using a general-to-specific approach. The gravity coefficients themselves are weakly affected by a structural break across the Great Depression. Note that the relation actually becomes stronger, whereas Eichengreen and Irwin (1995, Table 2) had obtained a weakened relationship. Testing down, however, only the structural break in per-capita incomes survives. Notice that except for distance, the gravity model does a bad job explaining trade with Soviet Russia: all the slope dummies involving Russia are significant, and change again significantly during the 1930s.

[3] See the data appendix for a description of data sources.
[4] The countries we include are AU, CZ, BG, SF, GR, H, P, RO, YU.

The first two groups of fixed effects concern the reichsmark bloc and the set of countries having payments agreements with Germany in the 1930s. It turns out that membership in the later reichsmark bloc ("RM_IN") was highly trade-creating during the 1920s. Part of this effect melted away during the 1930s. The converse is true for the members of the exchange control system, whose trade with each other ("EXCH_IN") was lower than the gravity model would predict but recovered partly in the 1930s. We found this result to be surprising, as it suggests that the exchange control system actually did have trade-creating effects compared to a less-than-normal level of trade in the 1920s. On the other hand, tying one's currency to the reichsmark in the 1930s appears to have been a rather bad idea.

Evidence on the trade diversion effects of the reichsmark and exchange control blocs is mixed. During the 1930s, the trade diversion coefficient on the reichsmark bloc ("RM_OUT*YEARS1930") is weakly significant and negative. However, during the preceding years, the later reichsmark bloc was actually trading more with third countries than should be expected, indicating reverse trade diversion. Comparing the two coefficients, it seems that the formation of the reichsmark currency bloc in the 1930s just cancelled out this previous reverse effect. Hence, during the 1930s the countries of reichsmark bloc were trading just as much with the outside world as the gravity model would predict[5]. In contrast, trade of the exchange control members with third countries ("EXCH_OUT") was significantly below the predictions of the gravity model already during the 1920s. There is a weakly insignificant upward correction of this effect in the 1930s, which however does not survive to the fully tested down version of the model.

These results help to clarify an open issue in Eichengreen and Irwin (1995). They highlight the importance of path dependence in trade relations among and across trade blocs: strong deviations from the gravity model existed for these countries already in the 1920s, and if anything, the reichsmark and exchange control blocs appear to have reduced these distortions instead of aggravating them. This first, surprising and somewhat unwelcome result will need further explanation and clarification, to be given further below.

[5] We tested for this by omitting the time dummy effect on the trade diversion coefficient for the 1930s (not shown). As a result, "RM_OUT" became very insignificant, indicating no trade diversion.

Trade creation effects are also visible in the sterling bloc, again however in the 1920s and not in the 1930s: in relative terms, trade among the members of the sterling bloc was reduced strongly after 1930, by far overcompensating the trade creating effects that prevailed among the later members of this bloc in the 1920s.

The later sterling bloc was probably already slightly trade-diverting in the 1920s, although the coefficient is highly insignificant. Trade diversion became a major issue in the 1930s, however. The coefficient {"STR_OUT*YEARS1930") is very high in absolute value and remains significant upon testing down. Interestingly, the commonwealth fared slightly better upon these dimensions. There exist significant trade creating effects among its members already in the 1920s, accompanied by trade diversion, which was also extant already in the 1920s. There is no significant effect on either of the two in the 1930s. On this account, therefore, the commonwealth's performance in the 1930s was apparently better than its reputation. Beggar-thy-neighbor policies were apparently effective, not so much through the tightening of imperial preferences after the Ottawa conference but rather indirectly through the sterling bloc.

Rather less surprisingly, little trade diversion can be attributed to the gold bloc countries. The only significant effect of being on gold after 1933 seems to have been some degree of trade creation among its members. In this regard, membership in the gold bloc may actually have been more beneficial than traditional accounts of the international recovery from the depression would have it Bernanke and James (1991).

We looked also into Eastern European trade in order to see if there are specific effects not captured by the gravity model. Newly created and often in bitter controversy with each other, some of the new nation states were notorious for their protectionist policies. Where they weren't, as in the case of Poland, war (with Russia), near-war (with Czechoslovakia) and a tariff war (with revenge-thirsty Germany) played their part in keeping trade at suboptimally low levels. This is borne out by a strongly negative and highly significant coefficient ("EASTERN_EUR"). To some extent, however, Eastern Europe's trade gained ground in the 1930s.

Russia follows essentially the same pattern. (One should refrain from interpreting the coefficients, as these interacted with whether or not we inserted the slope dummies for Russia on the gravity terms). What is striking, though, is that Russia's trade with its neighboring countries of Eastern Europe is markedly lower than predicted by the model, and significantly so. This corroborates a result in Ritschl (2001), who had argued that large part of Eastern Europe's trade dependence on Germany was created by Russia's retreat from its trade with the area.

Regarding the interaction between the various blocs, we find that the reichsmark and the commonwealth bloc traded significantly less during the 1930s. At the same time, we find that the commonwealth increased its trade with Eastern Europe during the 1930s, while there is a certain revival of Franco-Russian trade, reflected in the coefficients on the gold bloc and Russia for the 1930s.

Drawing the results of this section together, three effects can be highlighted. First, counter to intuition and conventional wisdom, there is only weak evidence for trade-diverting effects of the reichsmark bloc and foreign exchange control. Second, we find strong trade diverting effects of the sterling bloc and the commonwealth, where the latter took the lead in the 1920s and the first in the 1930s. Third, Eastern European trade appears to be a special case, which is explained neither by the gravity model nor by trade blocs. During the inter-war years, proximity to Russia was a problem for the trade of these countries, probably even more so than the proximity of Germany.

IV. Trade without Russia: Not So Diverted

The results of the preceding section were to some extent driven by the data on Russia. By all available estimates, the Soviet Union was not a minor player in the inter-war economy; its GNP in 1938 may have been half the size of that of the US. Even if we allow for substantial measurement error, there is no way in which Soviet Russia could be dismissed as a small economy of no influence on trade relations.

This may have been particularly important for trade within Europe. Our results showed that Eastern European trade was systematically faring worse than the model

would predict, and that a number of interaction terms between Russia and other variables of the model were significant.

In this section, an alternative way of determining trade diversion will therefore be pursued. We ask the question of how trade blocs and currency blocs performed in non-Russian trade, excluding systematically all those trade transactions between a communist planning system and more or less market-oriented economies. Table 2 presents the results from the respective subsample.

(Table 2 about here)

The regressions in Table 2 again follow a general-to-specific philosophy. Again, the gravity model itself suffers a structural break in the transition to the 1930s. As before, the term on GNP increases, while the term on GNP per capita decreases.

What stands out from Table 2 are the trade diversion coefficients for the 1930s ("RM_OUT*YEARS1930", "EXCH_OUT*YEARS1930", "STR_OUT*YEARS-1930", "COMMON_OUT*YEARS1930", "GOLD_OUT*YEARS1930"). With the exception of the insignificant commonwealth coefficient, they all become positive now, and some remain significant upon testing down. We attempted to beat this result by introducing all possible interaction dummies among the various blocs, and found only one of them significant: the reichsmark and sterling bloc appear to have traded less with each other than the gravity model should predict. However, this was so already in the 1920s; there is no change whatsoever in this relationship in the 1930s.

As before, we find evidence of trade-creating effects all over. In the case of the British-led currency and trade areas, this is generally true of the 1930s. Membership in the German-led clearing account system appears to have helped overcome strong trade-inhibiting and trade-diverting effects on these countries in the 1920s. Also, while the deficient trade conditions of Eastern Europe do not disappear, we find that none of the interactions with trade blocs from the previous table plays a role here.

To beat our results, in the last estimate of Table 2 we re-introduce a number of dummy variables on Germany. The goal of this is to see if the autarky policies of Nazi Germany during the 1930s had an effect not captured by the tested-down version of the gravity equation. As the table shows, coefficients were counterintuitive (indicating increased integration with international markets instead of autarky in the 1930s) and highly insignificant.

We obtain the result that both Britain's beggar-thy-neighbor policies and Germany's economic imperialism fail to show up in the data of the 1930s. One possible explanation is that strategic trade policy in the 1930s has been misinterpreted. Works of historians abound with examples of a race between Germany and the Allies for influence in the Danubian, notably Pearton (1971), which involved exports of advanced armament, strategic resources, and high-tech equipment to these areas. None of this was compatible with economic dominance or exploitation. Trade policy alone was insufficient to subdue Europe to the economic interests of Nazi Germany.

V. Conclusions

A fresh look at the trade and currency blocs of the inter-war period reveals sort of a Russian disease. Itself a planned economy without private property of means of production, the Soviet Union maintained a foreign trade monopoly which regulated Russia's trade relations according to her strategic interests.

Russia's trade distorted the effects of the currency and trade blocs on international trade in the 1930s in a significant way. We have attempted in this paper to reevaluate the discussion about trade diversion and currency blocs in the 1930s. In line with the literature, we do find evidence of trade diversion, although it is generally weaker than hitherto believed. However, as soon as we limit our attention to non-Russian trade, it turns out that trade diversion in the 1930s disappears entirely.

One reason for this is the presence of path dependency in international trade across the Great Depression. Most of the trade-diverting relationships that an isolated, static look at the 1930s would reveal existed already in the 1920s, before the currency areas

were formed. The 1930s do therefore not provide evidence against currency areas from a trade point of view.

The path dependency in our results opens avenues for future research. If the countries joining a currency union had similar characteristics, the question is how the currency blocs of the 1930s could have acted optimally and how their actual performance compares to that. The sterling and commonwealth areas merely appear to have perpetuated the suboptimal characteristics of trade of their members. To our surprise, we found that the reichsmark and foreign exchange control bloc did reduce previously existing trade diversion. The possible endogeneity of currency blocs in the 1930s and their comparative performance in a climate of less than full recovery of international trade merit further attention.

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Appendix

This appendix presents the sources used in estimating the gravity equations.

Trade. Hilgerdt (1942), Appendix III.

GDP. PPP-adjusted GDP in 1938 US-Dollars for Canada, United States, Argentina, Japan, Austria, Belgium, Czechoslovakia, France, Germany, Italy, Netherlands, Sweden, Switzerland, Bulgaria, Denmark, Finland, Greece, Hungary, Norway, Poland, Portugal, Romania, Spain, Turkey, Yugoslavia, Ireland, United Kingdom, Australia, New Zealand: Prados de la Escosura (2000). Soviet Union: PPP-adjusted GDP in 1938 US-Dollars are proxied by Prados de la Escosura (2000) and 1990-Geary-Khamis comparisons from Maddison (1995), pp. 180-6.

Population. Canada, United States, Argentina, Japan, Austria, Belgium, Czechoslovakia, France, Germany, Italy, Netherlands, Sweden, Switzerland, Bulgaria, Denmark, Finland, Greece, Hungary, Norway, Poland, Portugal, Romania, Spain, Turkey, Yugoslavia, Ireland, United Kingdom, Australia, New Zealand from Prados de la Escosura, (2000). Soviet Union: interpolated census data from Mitchell (1992), p.7.

Distance. Crow flight distances calculated by longitude and latitude data for capitals.

Area. Hilgerdt (1942), Appendix I.

Table 1
Trade Blocs in Inter-War Trade

(OLS, White Heteroskedasticity-Consistent Errors)	Full equation		General-to-specific					
			p < 0.5		p < 0.2		p < 0.15	
Dep: LOG(1+TRADE)	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
C	-15,714	-17,496	-15,771	-17,117	-15,752	-17,775	-15,926	-17,954
LOG((GDP_1)*(GDP_2))	0,521	19,228	0,529	23,382	0,560	46,040	0,559	45,977
LOG((GDP_1)*(GDP_2))*YEARS1930	0,050	1,608	0,042	1,547				
LOG((GDP_1)*(GDP_2))*RUSSIA	0,272	2,447	0,277	2,919	0,229	2,595	0,178	2,217
LOG((GDP_1)*(GDP_2))*RUSSIA*YEARS1930	-0,249	-1,485	-0,261	-2,178	-0,218	-1,810	-0,241	-1,995
LOG(GDPCAP_1*GDPCAP_2)	1,060	12,308	1,046	13,278	0,992	13,278	1,004	13,451
LOG(GDPCAP_1*GDPCAP_2)*YEARS1930	0,165	1,586	0,179	1,832	0,247	2,674	0,253	2,770
LOG(GDPCAP_1*GDPCAP_2)*RUSSIA	0,030	0,084	-1,337	-5,414	-1,320	-5,508	-1,188	-5,903
LOG(GDPCAP_1*GDPCAP_2)*RUSSIA*YEARS1930	-1,379	-3,051	-0,386	-11,352	-0,383	-11,575	-0,379	-11,472
LOG(DIST)	-0,394	-10,649	-0,087	-2,086	-0,091	-2,240	-0,111	-2,851
LOG(DIST)*YEARS1930	-0,079	-1,787	0,173	1,009				
LOG(DIST)*RUSSIA	0,172	1,051						
LOG(DIST)*RUSSIA*YEARS1930	-0,211	-1,039	-0,214	-1,027				
GL	0,017	13,902	0,017	14,227	0,017	14,907	0,017	14,882
GL*YEARS1930	-0,017	-11,946	-0,017	-12,189	-0,016	-12,832	-0,016	-12,785
RM_IN	1,162	6,909	1,217	9,373	1,272	10,631	1,270	10,627
RM_IN*YEARS1930	-0,209	-1,032	-0,263	-1,536	-0,326	-1,987	-0,383	-2,408
RM_OUT	0,217	2,240	0,234	3,055	0,258	3,424	0,246	3,291
RM_OUT*YEARS1930	-0,129	-1,105	-0,147	-1,468	-0,176	-1,778	-0,193	-1,973
EXCH_IN	-0,533	-5,019	-0,545	-5,793	-0,488	-5,611	-0,443	-5,740
EXCH_IN*YEARS1930	0,372	2,913	0,384	3,257	0,303	2,740	0,189	2,178
EXCH_OUT	-0,344	-4,615	-0,353	-4,983	-0,336	-4,806	-0,271	-6,764
EXCH_OUT*YEARS1930	0,137	1,517	0,147	1,679	0,119	1,372		
STR_IN	0,419	2,279	0,540	4,233	0,621	5,389	0,607	5,292
STR_IN*YEARS1930	-2,727	-2,387	-2,791	-2,441	-2,840	-2,584	-2,633	-2,403
STR_OUT	-0,066	-0,663						
STR_OUT*YEARS1930	-2,464	-2,168	-2,472	-2,144	-2,439	-2,226	-2,248	-2,055
COMMON_IN	0,183	0,535						
COMMON_IN*YEARS1930	0,914	2,208	1,098	4,701	1,048	4,511	0,980	4,360
COMMON_OUT	-0,172	-1,741	-0,228	-2,692	-0,158	-2,880	-0,162	-2,932
COMMON_OUT*YEARS1930	0,063	0,512	0,120	1,079				

Table 1 (continued)

Dep: LOG(1+TRADE)	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
GOLD_IN	-0,055	-0,256						
GOLD_IN*YEARS1930	0,413	1,724	0,359	3,305	0,331	3,051	0,242	2,742
GOLD_OUT	-0,110	-1,078	-0,086	-1,123				
GOLD_OUT*YEARS1930	0,198	1,713	0,174	1,854	0,077	1,405		
EASTERN_EUR	-0,689	-7,994	-0,696	-8,243	-0,682	-8,264	-0,686	-8,322
EASTERN_EUR*YEARS1930	0,239	2,163	0,247	2,271	0,218	2,050	0,240	2,266
RM_OUT*COMMON_OUT	-0,035	-0,242						
RM_OUT*COMMON_OUT*YEARS1930	-0,241	-1,295	-0,276	-2,356	-0,264	-2,273	-0,263	-2,269
COMMON_OUT*EASTERN_EUR*YEARS1930	0,329	2,827	0,328	2,827	0,351	3,104	0,331	2,936
RUSSIA	-7,004	-1,738	-6,838	-2,991	-4,544	-2,707	-3,451	-2,326
RUSSIA*YEARS1930	21,129	4,362	20,974	5,852	18,332	5,739	17,304	5,653
RUSSIA*EASTERN_EUR	0,368	1,204	0,399	1,412	-0,683	-3,084	-0,814	-3,834
RUSSIA*EASTERN_EUR*YEARS1930	-1,061	-2,621	-1,104	-3,164	0,338	1,420		
STR_OUT*RUSSIA	0,349	0,944	0,394	1,495				
STR_OUT*RUSSIA*YEARS1930	0,072	0,138						
GOLD_OUT*RUSSIA	-0,302	-1,204	-0,269	-1,079	-0,439	-1,825	-0,569	-2,500
GOLD_OUT*RUSSIA*YEARS1930	0,931	2,469	0,885	2,767	1,047	3,405	1,078	3,569
R-squared	0,766		0,766		0,766		0,765	
Adjusted R-squared	0,762		0,762		0,762		0,762	
S.E. of regression	0,837		0,836		0,836		0,836	
Sum squared resid	1792,773		1793,510		1797,180		1801,929	
Log likelihood	-3213,289		-3213,826		-3216,493		-3219,937	
Durbin-Watson	1,649		1,649		1,646		1,639	
Mean dependent var	2,215		2,215		2,215		2,215	
S.D. dependent var	1,714		1,714		1,714		1,714	
F-statistic	178,558		205,058		240,130		262,043	

Table 2
Trade Blocs in Non-Russian Trade
(OLS, White Heteroskedasticity-Consistent Errors)

	Full Equation		General-to-Specific: p < 0.5		General-to-Specific: p < 0.2	
Dep: LOG(1+NORUSSTRADE)	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Const	-21,619	-20,004	-21,607	-32,937	-21,707	-33,663
LOG(GDP_1*GDP_2)	0,294	7,295	0,298	8,541	0,310	10,470
LOG(GDP_1*GDP_2)*YEARS1930	0,119	2,613	0,116	2,842	0,101	2,870
LOG(GDPCAP_1*GDPCAP_2)	1,872	16,630	1,858	24,103	1,859	26,613
LOG(GDPCAP_1*GDPCAP_2)*YEARS1930	-0,186	-1,416	-0,170	-2,687	-0,177	-3,613
LOG(DIST)	-0,384	-9,128	-0,377	-9,759	-0,396	-17,531
LOG(DIST)*YEARS1930	-0,026	-0,522	-0,035	-0,769		
GL	0,018	11,793	0,017	12,479	0,017	13,515
GL*YEARS1930	-0,018	-10,398	-0,018	-11,450	-0,017	-12,697
RM_IN	1,103	4,941	1,216	11,210	1,254	13,611
RM_IN*YEARS1930	0,152	0,587				
RM_OUT	0,154	0,874	0,207	2,373	0,232	3,114
RM_OUT*YEARS1930	0,069	0,339				
EXCH_IN	-0,443	-3,417	-0,439	-3,591	-0,439	-4,094
EXCH_IN*YEARS1930	0,539	3,402	0,537	3,711	0,541	4,232
EXCH_OUT	-0,318	-3,327	-0,317	-3,409	-0,327	-3,704
EXCH_OUT*YEARS1930	0,207	1,782	0,207	1,854	0,215	2,000
STR_IN	-0,228	-0,879	-0,148	-0,938		
STR_IN*YEARS1930	0,128	0,095				
STR_OUT	-0,330	-2,052	-0,285	-1,980	-0,165	-2,912
STR_OUT*YEARS1930	0,096	0,072				
COMMON_IN	0,302	0,769	0,259	0,688		
COMMON_IN*YEARS1930	0,851	1,798	0,898	2,006	1,118	4,368
COMMON_OUT	-0,056	-0,417	-0,097	-1,327	-0,135	-2,097
COMMON_OUT*YEARS1930	-0,053	-0,325				
GOLD_IN	-0,281	-1,030	-0,219	-0,968		
GOLD_IN*YEARS1930	1,052	3,472	0,982	4,089	0,783	6,768
GOLD_OUT	-0,285	-2,269	-0,261	-2,582	-0,245	-2,786
GOLD_OUT*YEARS1930	0,505	3,498	0,479	4,286	0,471	4,714
ME_EUR	-0,355	-2,199	-0,387	-2,961	-0,361	-4,381
ME_EUR*YEARS1930	0,183	0,943	0,233	1,660	0,158	1,859
RM_OUT*COMMON_OUT	-0,041	-0,193				
RM_OUT*COMMON_OUT*YEARS1930	-0,047	-0,184	-0,095	-0,723		
COMMON_OUT*ME_EUR	-0,157	-0,822	-0,145	-1,046		
COMMON_OUT*ME_EUR*YEARS1930	0,365	1,535	0,343	1,930	0,157	1,635
RM_OUT*STR_OUT	-0,127	-0,596	-0,197	-1,698	-0,252	-2,712
RM_OUT*STR_OUT*YEARS1930	-0,093	-0,361				
STR_OUT*ME_EUR	0,090	0,492	0,116	0,747		
STR_OUT*ME_EUR*YEARS1930	-0,159	-0,696	-0,199	-1,196		
GERMANY						
GERMANY*YEARS1930						
GERMANY*COMMON_OUT						
GERMANY*COMMON_OUT*YEARS1930						
R-squared	0,673		0,673		0,672	
Adjusted R-squared	0,668		0,669		0,669	
S.E. of regression	1,016		1,015		1,014	
Sum squared resid	2652,839		2653,312		2658,341	
Log likelihood	-3724,675		-3724,908		-3727,379	
Durbin-Watson stat	1,409		1,408		1,408	
Mean dependent var	2,079		2,079		2,079	
S.D. dependent var	1,762		1,762		1,762	
F-statistic	139,003		170,810		230,286	

Table 2 (continued)

	General-to-Specific:				Germany dummies	
	p < 0.1		p < 0.05			
Dep: LOG(1+NORUSSTRADE)	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
Const	-21,726	-33,736	-21,477	-34,143	-21,539	-32,338
LOG(GDP_1*GDP_2)	0,313	10,645	0,315	10,748	0,315	10,749
LOG(GDP_1*GDP_2)*YEARS1930	0,097	2,767	0,098	2,811	0,085	2,401
LOG(GDPCAP_1*GDPCAP_2)	1,851	26,596	1,825	26,961	1,820	26,164
LOG(GDPCAP_1*GDPCAP_2)*YEARS1930	-0,169	-3,491	-0,172	-3,545	-0,150	-3,033
LOG(DIST)	-0,393	-17,424	-0,397	-17,889	-0,382	-16,107
LOG(DIST)*YEARS1930						
GL	0,017	13,706	0,017	13,869	0,018	13,987
GL*YEARS1930	-0,018	-12,897	-0,018	-12,901	-0,019	-13,745
RM_IN	1,239	13,469	1,248	13,602	1,273	13,427
RM_IN*YEARS1930						
RM_OUT	0,218	2,941	0,228	3,093	0,225	2,939
RM_OUT*YEARS1930						
EXCH_IN	-0,418	-3,959	-0,384	-3,703	-0,379	-3,605
EXCH_IN*YEARS1930	0,508	4,067	0,518	4,164	0,562	4,382
EXCH_OUT	-0,320	-3,637	-0,311	-3,551	-0,311	-3,513
EXCH_OUT*YEARS1930	0,205	1,915	0,212	1,983	0,230	2,088
STR_IN						
STR_IN*YEARS1930						
STR_OUT	-0,172	-3,028	-0,191	-3,319	-0,192	-3,178
STR_OUT*YEARS1930						
COMMON_IN						
COMMON_IN*YEARS1930	1,121	4,376	1,194	4,746	1,139	3,185
COMMON_OUT	-0,097	-1,690				
COMMON_OUT*YEARS1930						
GOLD_IN						
GOLD_IN*YEARS1930	0,780	6,758	0,818	7,235	0,863	7,325
GOLD_OUT	-0,233	-2,668	-0,218	-2,494	-0,204	-2,345
GOLD_OUT*YEARS1930	0,457	4,613	0,462	4,659	0,468	4,656
ME_EUR	-0,351	-4,296	-0,352	-4,299	-0,345	-4,137
ME_EUR*YEARS1930	0,189	2,280	0,192	2,304	0,159	1,873
RM_OUT*COMMON_OUT						
RM_OUT*COMMON_OUT*YEARS1930						
COMMON_OUT*ME_EUR						
COMMON_OUT*ME_EUR*YEARS1930						
RM_OUT*STR_OUT	-0,217	-2,379	-0,223	-2,448	-0,227	-2,386
RM_OUT*STR_OUT*YEARS1930						
STR_OUT*ME_EUR						
STR_OUT*ME_EUR*YEARS1930						
GERMANY					-0,143	-0,829
GERMANY*YEARS1930					0,184	0,876
GERMANY*COMMON_OUT					-0,077	-0,282
GERMANY*COMMON_OUT*YEARS1930					0,254	0,718
R-squared	0,672		0,671		0,666	
Adjusted R-squared	0,669		0,669		0,663	
S.E. of regression	1,014		1,014		1,022	
Sum squared resid	2660,517		2663,287		2519,342	
Log likelihood	-3728,447		-3729,805		-3497,508	
Durbin-Watson stat	1,407		1,404		1,403	
Mean dependent var	2,079		2,079		2,079	
S.D. dependent var	1,762		1,762		1,762	
F-statistic	240,554		251,716		192,283	