

Financial Crises and International Financial Crisis Transmission in Eastern Europe during the European Financial Crisis of 1931[☆]

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Abstract

Did Eastern European countries experience financial crises during 1931? If so, what were the main factors contributing to these crises? Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia were hit by currency, banking and sovereign default risk crises during 1931, while Czechoslovakia was troubled only by a currency crisis. Worsening of domestic fundamentals, drying up of international credit and falling global demand, as well as finance and trade spillovers all played a contributing role. While completely avoiding financial crises during 1931 was elusive for Eastern Europe, the case of Czechoslovakia shows that strong economic fundamentals helped downsize the extent of financial crises.

Keywords: Financial Crises; International Financial Crisis Transmission; Eastern Europe; 1931

JEL classification: N24, G15

1. Introduction

The European Financial Crisis of 1931 is a crucial event in financial history as it deepened and internationalised the Great Depression. It is most often associated with financial crises that occurred in large developed European economies such as Austria, Germany, and Britain [Eichengreen, 1992, Kindleberger, 1986]. Recently there has been revived interest in the European Financial Crisis of 1931 and its international implications. Accominotti [2012] argued that the imposition of exchange control in Central Europe had negative effects on British merchant banks that were exposed to the region, which in turn contributed to Britain leaving the gold standard. Ritschl and Sarferaz [2014] analysed potential crisis transmission channels between Germany and the US, and found spillover effects through banking linkages running from Germany to the US.

However, modern English-language literature lacks a study documenting financial crises in Eastern Europe in 1931. Moreover, the channels and mechanisms through which financial crises may have spread internationally to Eastern Europe are still largely unknown. For example, while Kindleberger [1986] is often cited for acknowledging crisis transmission from Austria to a number of Eastern European countries, he does so only in passing.¹ Similarly, Eichengreen [1992, p. 270] briefly mentions that ‘Austria’s crisis spread immediately to Hungary’, presumably since the two countries’ banking systems were interconnected. The underexplored state of research on this topic

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¹Kindleberger [1986, p. 148]: ‘At the end of May 1931, Austrian financial difficulties ramified widely and led to runs on the banks of Hungary, Czechoslovakia, Romania, Poland, and Germany’.

was recently highlighted by Eichengreen [2011, pp. 36-37] who suggested that the ‘main victims’ of the 1931 financial crisis may have been Central European emerging markets rather than advanced countries.

The present paper aims to fill this gap in the literature. We ask two closely related questions. Did Central-Eastern and South-Eastern European (CESEE) countries experience financial crises during 1931? If so, what factors contributed to these financial crises?² We analyse all CESEE countries with a population over two million, that were relatively well documented in historical sources and had a market economy.³ Thus our sample of countries includes Bulgaria, Czechoslovakia, Greece, Hungary, Poland, Romania and Yugoslavia (henceforth also referred to as the ‘CESEE-7’). In line with previous research [Eichengreen, 1992, Kindleberger, 1986] we take financial crises in Austria, Germany and Britain - occurring in May, July and September 1931, respectively - as exogenous to the ‘CESEE-7’. Our main period of interest during 1931 is from the Austrian financial crisis until the introduction of exchange controls in most of the CESEE-7 following Britain’s exit from the gold standard.

The paper is structured as follows. In the next section, we take stock of currency, banking and sovereign default risk crises in the CESEE-7 during 1931. We then discuss global shocks and macroeconomic fundamentals (Section 3) as well as international financial crisis transmission (Section 4) as contributing factors to financial crises in the CESEE-7 during 1931. In the final section we summarise and conclude.

2. Documenting Financial Crises in CESEE during 1931

The experience of Austria, Germany and Britain during the European Financial Crisis of 1931 has been researched extensively.⁴ Table 1 presents a time-line of main events pertaining to the financial crises in these three countries during 1931. The Austrian financial crisis in May 1931 was the first in a series of financial crises hitting Europe during 1931. Namely, on 8 May it was revealed that the losses of the Creditanstalt - the largest European deposit bank east of Germany [Schubert, 1991, p.3] - exceeded the amount of its original capital, and that it needed to be bailed out by the Austrian government [Ellis, 1939, p. 27]. The first in a series of bailouts was advanced on 14 May by the Austrian government, Austrian National Bank and the House of Rothschild (see [Ellis, 1941, p.28] and [Kindleberger, 1986, pp. 145-146]).

The Austrian Crisis was followed by the German financial crisis. First, on 6 June the German government issued a statement that it could no longer pay reparations (see [James, 1984, p. 71] and [Kindleberger, 1986, p. 149]). In the same week a run on the German currency started [Ferguson and Temin, 2003, p. 30]. A one year moratorium on all international political debt was announced on 20 June by US president Hoover brought. The full extent of losses of the Nordwolle (Norddeutsche

²The term ‘financial crisis’, as used in the present paper, refers to the occurrence of a currency, banking or sovereign default risk crisis in a given country. The plural form of the term is used either when a single country is experiencing several financial crises simultaneously (e.g. currency and banking crises i.e. twin crisis) or when multiple countries are hit by one or more financial crises.

³Our sample does not include Albania or the Baltic countries as these were small countries (Lithuania - the most populous country from the group - had around 2.1 million inhabitants in 1920 [Kirk, 1969, p.24]) for which relatively limited evidence is available. We do not include Soviet Russia as it had a non-market economy.

⁴See for example [Ellis, 1941], [Williams, 1963a,b], [James, 1984], [Kindleberger, 1986], [Schubert, 1991], [Eichengreen, 1992], [Balderston, 1994], [Ferguson and Temin, 2003], [Schnabel, 2004], [Temin, 2008], [Accominotti, 2012], [Ritschl and Sarferaz, 2014].

Wollkammerei) was revealed in the beginning of July [Schnabel, 2004, p. 852]. The Nordwolle failure brought down Danatbank (Darmstädter und Nationalbank) and other large German banks including Dresdner Bank [Ferguson and Temin, 2003, p. 22]. The German financial crisis culminated on 13 July when Danatbank failed and a ‘banking holiday’ taking effect the following day was proclaimed by government decree [League of Nations, 1934a, p. 112]. Exchange control was introduced by a series of decrees between 15 July and 1 August [Ellis, 1940, p. 9] which meant that Germany had left the gold standard.

In effect, exchange controls implied a ban on all payments abroad meaning that debtors had to find new arrangements with foreign creditors [Accominotti, 2012, p. 5]. An international conference held in London (20-23 July) recommended a freezing of foreign credits in Germany. Accordingly, Germany concluded Standstill Agreements with major creditor states in August and September (see [James, 1984, p. 82] and [Accominotti, 2012, p. 5]). The Standstill resulted in a run on British merchant banks which were heavily exposed to Central European acceptances [Accominotti, 2012, pp. 22-23]. Moreover, just after the peak of the financial crisis in Germany, there began a run on the British currency - in the two weeks following 15 July the Bank of England lost about 20 per cent of its gold reserves, despite raising its discount rate twice in this short period [Accominotti, 2012]. Eventually, Britain officially suspended its commitment to the gold standard and devalued its currency in relation to gold on 21 September [League of Nations, 1934b, p. 206].

How do Bulgaria, Czechoslovakia, Greece, Hungary, Poland, Romania and Yugoslavia (the CESEE-7) fit into this time-line? Did the CESEE-7 also experience financial crises during 1931? In what follows we explore three types of financial crises in these countries - currency, banking and sovereign default risk crises.

2.1. Currency crises

In times when flexible exchange rates are the dominant currency regime, currency crises are most intuitively understood as large changes in a country’s exchange rate. However, in times of fixed exchange rates, such as the interwar gold-exchange standard, a record of minor exchange rate fluctuations may mask severe pressure on the exchange rate that is forcing the central bank to alter its interest rate or intervene in the foreign exchange market. This has led some authors (e.g. [Eichengreen and Rose, 1999, Eichengreen et al., 1996]) to rely on an ‘exchange market pressure index’ (see [Girton and Roper, 1977]) - a weighted average of changes in the exchange rate, central bank foreign reserves and interest rates. Nevertheless, the application of such an index to interwar CESEE is questionable based on the grounds that central banks in the region seldom changed their interest rates,⁵ while exchange rates – once de facto stabilised – fluctuated little (see [SEEMHN, 2014] and [League of Nations, 1932d]). Therefore, to gauge potential pressures on CESEE exchange rates, we find it most instructive to investigate central bank foreign reserves in these countries. Changes in foreign reserves may indicate whether a central bank committed to a fixed exchange rate was forced to expend gold and foreign exchange reserves on the purchase of domestic currency when faced with a looming currency crisis (see e.g. [Eichengreen, 1992, p. 262]).

What is the track record of currency crisis in the CESEE-7 following the onset of the European

⁵In the months of May, June, July, and August, from the six CESEE countries in our sample only the National Bank of Yugoslavia changed its interest rate (see [SEEMHN, 2014] and [Statistisches Reichsamtsamt, 1936]) - on 29 June, after going de jure on gold and on 20 July following the financial crisis in Germany.

Financial Crisis of 1931? Figure 1 shows weekly values of central bank gold and foreign exchange reserves (henceforth reserves) relative to the average value for April, for a period starting in the first week of May and lasting to the end of 1931, for seven CESEE countries. Relative to the April average, Hungary lost around 13 per cent and Bulgaria circa 4 per cent of reserves by the first week of June. Changes of reserves in other countries were more modest in this period. By the second week of July and the culmination of the financial crisis in Germany, the CESEE-7 lost considerable portions of their reserves. The losses ranged from almost 5 per cent in Poland to 18 per cent in Hungary. On 17 July Hungary decided to invoke exchange controls [Ellis, 1939, pp. 88-89]. However reserve losses continued in Hungary as well as in other CESEE countries. By the second week of September i.e. the week preceding Britain's exit from gold, reserves in Bulgaria, Czechoslovakia, Greece, Hungary, Poland and Yugoslavia were lower than at the time of the German financial crisis. During the months of September and October Bulgaria, Czechoslovakia, Greece, and Yugoslavia all introduced exchange controls [League of Nations, 1939-1940, pp. 194-195, Table 101] in an effort to stop the drain on reserves and defend fixed exchange rates [Ellis, 1941, pp. 878-879]. Romania followed suit on 18 December, as Romanian importers were prohibited to directly purchase goods from those countries that already invoked exchange controls [Stoenescu et al., 2007, p. 247].

The available data on the reported central bank foreign reserves shows that exchange rates of the CESEE-7 were under sizable pressure from May 1931. Currency crises troubled Hungary, Greece, Czechoslovakia, Yugoslavia and Bulgaria who (in that order) introduced exchange controls and Poland who managed to stay on the gold standard. Eventually, Romania was also unable to maintain fixed exchange rates without capital controls and in December it succumbed to the practice of exchange control thereby acknowledging a currency crisis. Thus by the end of 1931 only Poland managed not to introduce exchange controls despite losing a considerable portions of its reserves.⁶ This is in line with the country's large cover ratio (foreign reserves relative to monetary base) which exceeded that of all other CESEE countries by a large margin (own calculation based on data from *The Economist*). Simply put, Poland could afford staying on the Gold Standard during 1931 despite suffering a currency crisis. Moreover, it seems that it was prepared to do so because of political considerations i.e. its 'strategic partnership' with France [Wolf, 2007, 2008].⁷ Therefore, by the end of 1931 currency crises hit each and every country of the CESEE-7.

2.2. Banking crises

Whether a country experienced a banking crisis can be assessed both from the asset and liabilities side of the commercial bank's balance sheet. For example, the share of non-performing loans in total assets would indicate the soundness of a bank's loan portfolio. On the other hand, sharp decreases in credits or deposits would be suggestive of domestic or international bank runs. For the period under study indicators utilising the liabilities side of a commercial bank's balance sheet are more widely used than asset based measures. One explanation could be that contemporary data surveys of central banks and international institutions (e.g. League of Nations' Monthly Bulletin of Statistics) provide more readily available data on the former.

⁶For example, Rist and Schwob [1936, p. 238], Ellis [1941, p. 5] and Nurkse [1944, p. 81] maintain that Poland did not introduce exchange controls until April 1936.

⁷The model developed by Wolf [2007, p. 356] predicts that if political factors were taken out of the equation Poland would have left the gold standard in 1931.

Which months can be linked with heavy commercial bank deposit withdrawals in the CESEE-7 during 1931? Figure 2 shows monthly values of commercial bank deposits relative to the value for April, for a period starting in January and lasting to the end of 1931, for five CESEE countries. In Czechoslovakia commercial bank deposits were actually increasing throughout 1931. On the contrary, Greece, Hungary, Poland and Yugoslavia suffered heavy withdrawals of deposits during 1931. However, the timing was not unanimous. In Hungary and Poland withdrawals started before April, which was not the case in other countries. However, the difference was that in Poland withdrawals continued throughout the year, while in Hungary May was actually a month in which commercial bank deposits grew. In Yugoslavia the heavy withdrawals started in July, while in Greece this was the case in September. Relative to April, commercial bank deposits reduced by 26, 18 and 17 per cent in Poland, Yugoslavia and Hungary, respectively. In Greece, deposits were almost equal in April and August, but then fell by almost seven per cent until the end of the year. Thus, Greece, Hungary, Poland and Yugoslavia faced heavy deposits withdrawals from commercial banks at some point during 1931 which is evidence of banking crises in these countries.

Our findings go well with contemporary writing. For example, ‘commercial banks of Czechoslovakia were in a less exposed position during the international financial crisis of 1931 than those of neighbouring countries.’ [League of Nations, 1935, p. 13]. Further, in Yugoslavia a banking crisis began in the form of heavy withdrawals of deposits during July and August [League of Nations, 1934a, p. 134]. Also, the banking crisis and three day ‘banking holiday’ in July in Hungary are well documented [Ellis, 1939, pp. 88-89]. Moreover, recent research has identified 1931 as a year with a banking crisis in Greece [Lazaretou, 2011].

Similar evidence with a monthly frequency is unavailable for a representative sample of banking institutions in Bulgaria and Romania. Available yearly data shows that the value of deposits in private joint-stock banks operating in Bulgaria fell by 43 per cent from the end of 1929 to the end of 1932, and by 25 per cent from the end of 1930 to the end of 1931 (own calculation based on [League of Nations, 1934a, p. 71, Table 3(a)]). Total deposits of commercial banks operating in Romania reduced by 43 per cent during 1931 [League of Nations, 1934a, p. 182] – current accounts shrank by roughly a third, while other deposits reduced by a half [League of Nations, 1934a, p. 186]. Thus, a banking crisis in Bulgaria was evident as private joint-stock banks lost a quarter of their deposits during 1931. Similarly, Romania experienced a banking crisis during 1931 as commercial bank deposits fell by 43 per cent during this year.

In sum, both the quantitative and qualitative evidence shows that out of the CESEE-7 only Czechoslovakia did not record a banking crisis in 1931. On the other hand, banking sectors of Bulgaria, Greece, Hungary, Romania, Poland and Yugoslavia experienced a crisis.

2.3. Sovereign default risk

A well established metric of sovereign risk is the current yield on long-term sovereign bonds (e.g. [Obstfeld and Taylor, 2003]).⁸ The high frequency data generating process of a liquid international sovereign debt market allows us to calculate the current yield on a weekly basis as the ratio of the coupon rate to the current price of the bond. The data on bond prices comes from mid-week sovereign bond price quotations from the London Stock Exchange (Bulgaria, Czechoslovakia, Greece,

⁸Sometimes the current yield of a ‘riskless’ bond (e.g. UK consol) is deducted from the current yield of the bond of interest to arrive at a yield spread measure.

Hungary, Romania and Poland) and New York Stock Exchange (Yugoslavia), reported in the contemporary issues of *The Financial Times*.

Table 2 specifies the bonds that we have used to construct the series of bond yields. To make our cross-country analysis of sovereign risk as comparable as possible we relied only on interwar issues payable in hard foreign currency, which were mainly used for financial (currency and budget) stabilisation. It should be noted that the bond issues on which we base our calculations of sovereign risk of Bulgaria, Greece and Hungary are so called ‘League loans’ - i.e. loans sovereigns were able to float on international markets with the help of the League of Nations. Nevertheless, this has little impact on our inference since our focus is on the movement of bond yields on the secondary market, not on primary market related issues. Indeed the League of Nations’ main contribution as a mediator between international financial centers and countries in need of reconstruction was to attract capital on primary markets, rather than to supervise a sovereign until the maturity of the loan.⁹

What was the international market’s view on the sovereign default risk of the CESEE-7 during 1931? Figure 3 presents the weekly current yield expressed in basis points for seven CESEE countries, from the beginning of 1931 until the week preceding Britain’s exit from the gold standard.¹⁰ The period until the onset of the European Financial Crisis of 1931 reveals a stable hierarchy of sovereign default risk in the CESEE-7. Namely, at the start of May international markets saw Bulgaria’s sovereign bonds as the most riskiest of the group with a yield of 927 basis points. At the same time the least amount of risk was attached to Greece’s sovereign bonds which recorded a yield of 668 basis points. In the period from the Austrian financial crisis (first week of May) until the week preceding the German financial crisis (first week of July) only the Bulgarian yield increased by more than 100 basis points (110 exactly). The yields of Hungary and Poland rose by 43 and 30 basis points respectively, while the Romanian yield even decreased by 30 basis points. However, following the German financial crisis yields spiked in Bulgaria, Hungary, Poland, Romania and Yugoslavia. In the period from the German financial crisis (second week of May) until the week preceding Britain’s exit from gold (second week of September) bond yields increased by 851, 363, 333, 271, 199, 91 and 3 basis points in Bulgaria, Romania, Hungary, Yugoslavia, Poland, Greece and Czechoslovakia, respectively.

Thus only Czechoslovakia managed to keep stable sovereign bond yields throughout the sample period. In the case of Greece, most of the increase in sovereign yields came only in September. In the first three weeks of September (thus including the week in which Britain left the gold standard) Greece’s sovereign yields increased by 176 basis points which was a strong signal of a sovereign risk crisis. Moreover, the fact that the Athens Stock Exchange remained closed from mid-September 1931 to mid-December 1932 [Lazaretou, 2014, p. 122] is indicative of a sovereign risk crisis. In other CESEE-7 countries a sovereign risk crisis was evident from mid-July, while bond yields of Bulgaria, Hungary and Poland started to increase somewhat already from the beginning of May.

In sum, the evidence from international secondary markets for long term sovereign bonds shows

⁹Accordingly, Flores Zendejas and Decorzant [2015, pp.23-24] conclude: ‘[...] a major strength of the League was the short-term nature of its commitment to the countries it helped. Once the objectives defined in the protocols were attained, the League’s commissioner exited, allowing the borrowing country to determine its own economic policy, for which the League held no responsibility.’

¹⁰After 21 September 1931 it is hard to separate the effects of Britain’s devaluation and the subsequent introduction of exchange controls in most CESEE countries on sovereign bond price quotations at the London Stock Exchange.

that sovereign default risk of Czechoslovakia remained stable during 1931. On the contrary, sovereign risk of Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia increased markedly, although with different pace and timing.

2.4. Summary of Financial Crises in CESEE-7 during 1931

The main findings from Section 2, on financial crises in the CESEE-7 during 1931, can be summarised as follows. Currency crises, as evidenced by a marked loss of foreign reserves or the introduction of exchange controls, troubled the CESEE-7. Banking crises as measured by commercial bank deposit withdrawals, and sovereign default risk crises as captured by the current yield on long-term sovereign bonds were present in all of the CESEE-7 except in Czechoslovakia. Hence, 1931 was synonymous with financial crises in Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia. On the other hand, in Czechoslovakia, 1931 was only analogous to financial crises.

Table 3 presents a summary of financial crises in CESEE-7 during 1931, as well as the dates of the introduction of exchange controls, official devaluation of currency, and default on foreign sovereign debt for the same sample of countries. Putting the financial crises in the CESEE-7 in the perspective of the 1930s, it is evident that exchange controls, where introduced, were used to put capital flight under control and defend a fixed exchange rate [Ellis, 1941, pp. 878–879]. In turn, fixed exchange rates were preferred by these countries as ‘original sin’ [Eichengreen et al., 2007] led them to have foreign public debts denominated in foreign currency. Accordingly, the CESEE-7 resisted currency devaluations as long as they could. As Table 3 shows, none of the CESEE-7 devalued during 1931.¹¹ Moreover, as can be seen from Table 3, sovereign risk crises of 1931 in Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia - possibly in large part driven by currency and banking crises in the same countries - precipitated the ensuing defaults on foreign sovereign debt in five out of the six cases (Poland did not default).

In this section we argued that all CESEE countries experienced at least one type of financial crisis during 1931. In the next section we discuss how global shocks and macroeconomic fundamentals may have contributed to these financial crises.

3. Global shocks and macroeconomic fundamentals as contributing factors to financial crises in CESEE during 1931

The years preceding the European Financial Crisis of 1931 saw considerable changes in the global economy. The onset of the Great Depression brought a fall in the global demand for commodities and a reduction in the availability of international long-term credit both of which lasted throughout 1931. ‘The most severe contraction of demand’ the international economy had ever known is documented by Feinstein et al. [2008, pp. 93-97] - falling volumes of world trade interacted with falling prices which resulted in the value of world trade falling by 20 percent in 1930, 29 per cent in 1931, and by 32 percent in 1932. Contraction of international long-term credit started in 1929 as European borrowers experienced a sudden stop and capital flow reversal from major international financial centers i.e. New York, London, Paris, Amsterdam, Stockholm and Zurich [Accominotti

¹¹However, it should be noted that in countries that introduced exchange controls implicit devaluation was common. Namely, foreign convertible currency was traded with a premium which was paid above the official foreign exchange rate (See for example [Dimitrova and Ivanov, 2014, p. 203] and [Hinić et al., 2014, p. 298].

and Eichengreen, 2015]. Lending to Germany brought an incomplete recovery in 1930, only to completely collapse again in 1931. Lending from New York and London - the two largest creditors of European countries during the period from 1919 to 1932 - followed the same overall pattern [Accominotti and Eichengreen, 2015, p. 8, Figure 1].

The economies of the CESEE-7 would not have been equally affected by these developments in the global economy. First, the global demand shock would have hit primary good exporting countries more strongly than industrialised countries as prices of primary products dropped more steeply than those of manufactures [Feinstein et al., 2008, p. 94, Table 6.2]. Table 4 shows the composition of exports for nine CESEE countries at the onset of the Great Depression. It is evident that most of CESEE mainly exported primary goods - the percentage of primary products in total exports was 76.2 per cent or above in Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia. However, in Czechoslovakia, Austria and Germany the situation was different. It was the percentage of manufactures in total exports that was above 70 per cent in all three countries. Thus, Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia were affected more adversely by the global demand shock than relatively more industrialised Czechoslovakia. Second, the curtailment in the availability of international credit would have affected net capital importers more than net capital exporters. The available data for the second half of the 1920s shows that Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia were net capital importers [United Nations, 1949, p. 12].¹² On the other hand, Czechoslovakia managed to consistently record positive net capital movements [United Nations, 1949, p. 11]. Hence, contrary to capital exporting Czechoslovakia, other CESEE countries heavily reliant on foreign capital imports were negatively affected by the drying up of international credit. Therefore, Czechoslovakia was less affected by the changes in the global economy brought by the Great Depression. This partly explains why Czechoslovakia was less susceptible to financial crises than the rest of the CESEE-7 during 1931.

Another part of the explanation lies in the fact that Czechoslovakia had an economy which was fundamentally different from those in Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia. As Table 5 shows, Czechoslovakia had the highest GDP per capita and exports per capita, as well as the smallest share of active population working in agriculture out of the CESEE-7. Moreover, Czechoslovakia was only surpassed by Greece in terms of the openness of its economy to foreign trade. While having the highest income and exports per capita as well as being the most industrialised economy in the group worked to Czechoslovakia's advantage, perhaps being one of the most open CESEE economies to foreign trade contributed to a loss of central bank reserves during 1931. This is further supported by the fact that Greece, Czechoslovakia and Hungary - the three most open economies from the CESEE-7 - lost the most central bank reserves, while Romania who was the least open economy lost the least during 1931. Thus it was not only the composition of exports and net creditor status that made Czechoslovakia stand out from the rest of the CESEE-7, in general its macroeconomic indicators were more favourable.

However, how did macroeconomic fundamentals of the CESEE-7 countries fare during the run up to the European Financial Crisis of 1931? Table 6 reports the dates of the pre-crisis peaks as well as changes in the Albers and Uebele [2015] monthly economic activity index from the month of the pre-crisis peak to April 1931 i.e. the eve of the European Financial Crisis, for eight CESEE

¹²Poland in 1926 and Yugoslavia in 1929 were the only exceptions.

countries.¹³ As can be seen from Table 6 CESEE economies peaked either during 1929 or 1930. Thus, macroeconomic fundamentals were weakened in all CESEE economies before 1931. Apart from Austria and Germany economic activity declined the most in Bulgaria, Hungary and Poland. Romania and Yugoslavia were on the other extreme, while Czechoslovakia saw a decline of economic activity which was below the sample average. Hence, the economies of Bulgaria, Hungary and Poland were more weakened than those of Czechoslovakia, Romania and Yugoslavia by April 1931. Therefore, worsened macroeconomic fundamentals help explain why currency, banking and sovereign risk crises started earlier in Bulgaria, Hungary and Poland, than in Romania and Yugoslavia, and for the most part bypassed Czechoslovakia (cf. section 2).

Two main points arise from the above discussion of global shocks and macroeconomic fundamentals. First, changes in the global economy such as the drying up of international credit and falling global demand were important factors driving financial crises in the CESEE-7 during 1931. However, they affected Czechoslovakia less than other CESEE-7 economies because of its composition of exports and net creditor status. Second, all CESEE economies had weakened fundamentals on the eve of the European Financial Crisis of 1931. However, the pre-crisis slowdown of economic activity was much more pronounced in Bulgaria, Hungary and Poland than in Czechoslovakia, Romania and Yugoslavia, which accounts for the earlier occurrence of financial crises in the former group of countries.

In this section we argued that global shocks and macroeconomic fundamentals were contributing factors to financial crises in CESEE in 1931. In the next section we explore how international financial crisis transmission may have contributed to these financial crises.

4. International financial crisis transmission as a contributing factor to financial crises in CESEE during 1931

4.1. International transmission of financial crises - terminology and definitions

There is a long tradition in economic history in using the term ‘transmission’ (alternatively, ‘spread’ or ‘propagation’ – all of which are used as synonyms in the present paper) to help describe a phenomenon where a shock in one country (usually a financial crisis) is transmitted internationally to one or more countries (see e.g. [Kindleberger, 1978]). The use of the term ‘contagion’ in relation to the international spread of financial crises is of more recent nature.¹⁴ It has been stressed multiple times that there is no consensus on exactly how contagion should be defined (e.g. Claessens et al. [2001, p. 12], Pericoli and Sbracia [2003, p. 573], Dungey and Tambakis [2005, p. 3]). In early empirical applications (e.g. [Eichengreen and Rose, 1999, Eichengreen et al., 1996]) contagion referred to any channel that would transmit a crisis internationally. However, as economies are linked internationally through various economic fundamentals such as finance or trade, the term ‘spillovers’ [Masson, 1999b] was proposed to signify the spread of financial crises through these

¹³The Albers and Uebele [2015] monthly economic activity index synthesizes information from a comprehensive number of country specific time-series data on production, transport, employment, trade, prices, money and banking into a single indicator.

¹⁴For example, newer editions of Kindleberger’s classic (e.g. [Kindleberger and Aliber, 2011]) renamed the chapter originally titled ‘International Propagation’ (see [Kindleberger, 1978]) to ‘International Contagion’. The post 1990s literature on international financial contagion is extensive - for a review see for example Claessens et al. [2001] or Pericoli and Sbracia [2003].

linkages.¹⁵

In the present paper we subscribe to the strand of literature which differentiates between spillovers and contagion (e.g. [Masson, 1999b]). Spillovers arise from international linkages of economic fundamentals, while contagion is by definition unrelated to economic fundamentals.¹⁶ Intuitively, this notion of contagion is perhaps most easily understood as a residual – i.e. the part of international crisis transmission left unexplained after other effects (e.g. global shocks, macroeconomic fundamentals, spillovers) have been accounted for [Masson, 1999a, p. 588]. In the rest of section 4, we consider spillovers and contagion as contributing factors to financial crises in the CESEE-7 during 1931.

4.2. Finance channel spillovers

Financial linkages can be a channel for spillover effects. A financial crisis may spillover directly from one country to another due to the inter-connected financial institutions (henceforth IFI) effect. This mechanism requires financial institutions (e.g. banks) to be linked to each other through lending [Allen and Gale, 2000]. For example, a crisis may spillover from country i to country j , if banks from country i , faced by a liquidity shock, withdraw their funds from banks in country j .¹⁷

A financial crisis may also spillover indirectly through a common lender effect [Caramazza et al., 2004, Kaminsky and Reinhart, 2000, Van Rijckeghem and Weder, 2001]. In empirical work the banking sector of a particular country is identified as a common lender, though in principle the role of the common lender may be played by any creditor (e.g. a sovereign or any financial institution) that lends to both the crisis country and the country to which the crisis potentially spills over. The existence of a common bank lender effect presumes that bank exposures to a crisis country were large implying substantial potential losses [Van Rijckeghem and Weder, 2001, p. 295]. If a common lender experiences an unexpected loss due to a financial crisis in country i , the common lender may stop lending to country j or even withdraw capital from country j for example in order to rebalance its portfolio.

Is there evidence of finance channel spillovers contributing to financial crises in the CESEE-7 during 1931 either due to the IFI or common lender effect? For more recent periods these effects are commonly identified through international banking linkages [Caramazza et al., 2004, Kaminsky and Reinhart, 2000, Van Rijckeghem and Weder, 2001]. Unfortunately, these linkages are not easy to establish for CESEE in 1931, since in general there is limited direct evidence on the magnitude and direction of short-term capital flows during the interwar period [Accominotti and Eichengreen, 2015, p. 8]. Nevertheless, qualitative sources document that it was common for CESEE countries to rely on private foreign short-term capital [League of Nations, 1932, p. 10]. Foreign banks could have supplied much of these short-term funds through: their subsidiaries located in CESEE; banks operating in CESEE, but whose share capital was dominantly foreign owned; and banks whose share capital was for the most part domestically owned. For example, short-term capital ‘was invested

¹⁵Alternatively the term ‘fundamentals-based contagion’ [Claessens et al., 2001, Kaminsky and Reinhart, 2000] has been used.

¹⁶Masson [1999b, p. 267] defines contagion as ‘changes in expectations that are not related to changes in a country’s macroeconomic fundamentals.’ Similarly Moser [2003, p. 162] defines contagion as ‘cross-country propagation of shocks not related to or explained by economic fundamentals’.

¹⁷We refer to the country in which the crisis originates as country i (sometimes in the literature called the ground zero country) and the country to which the crisis spills over as country j .

in Poland largely through the intermediary of the Polish branches or affiliates of foreign banks.’ [League of Nations, 1934a, p. 172] A similar situation prevailed in Romania as ‘larger domestic banks, like the relatively important branches or subsidiaries of foreign banking institutions operating in Roumania [...] operated largely with foreign short-term credits and received deposits almost exclusively on short term.’ [League of Nations, 1934a, p. 182]

Accordingly, contemporaries attached a prominent role to short-term capital in bringing about the financial crisis of 1931.¹⁸ Moreover, contemporary writing is inexorable in claiming that banking sectors of Bulgaria, Poland, Romania and Yugoslavia faced withdrawals of funds from abroad during 1931. We start with the Polish case. The Economic Intelligence Service of the League of Nations points to voluminous withdrawals of credits by international bank lenders from the Polish banking sector:

During the general liquidity crisis which followed the collapse of the Creditanstalt in Austria and the German banking holidays in the summer of 1931, British, French and American banks as well as those of the Netherlands, Belgium and Switzerland withdrew large portions of their credits to Polish banking institutions. In the second half of 1931, the Polish banks lost 258 million zloty in foreign credits. [League of Nations, 1934a, p. 173]

In particular, short-term foreign borrowing of Polish banks from England, France, the United States and others¹⁹ dropped by 228 million zloty during 1931 [League of Nations, 1934a, p. 172]. If these international bank lenders withdrew credits to Poland after suffering losses in Austria, Germany or Hungary, this would strongly suggest that the common lender effect was at work in Poland. On the other hand, Austrian short-term credits to Poland decreased by 21 million zloty while German short-term lending increased by 11 million zloty during 1931 [League of Nations, 1934a, p. 172]. Thus, the direct effects on Polish banking through interconnected financial institutions with Austria were comparably smaller than withdrawals from England, France and the US. Moreover, the banking linkages with Germany seem to have even had a positive effect as German credits to Poland increased during 1931. Hence the available evidence for Poland suggests that spillovers through the finance channel could have been both due to the common lender and interconnected financial institutions effect.

The League of Nations ascribes the deterioration of bank balance sheets in Bulgaria to the calling in of foreign credits:

Despite a reduction during the crisis of 54 per cent in their deposits and of 40 per cent in their aggregate accounts due principally to the calling in of credits by their head offices during the European banking crisis of 1931 the foreign banks remain the most important commercial credit institutions in Bulgaria. [League of Nations, 1935, p. 10]

¹⁸For example in a memorandum on the international short-term indebtedness, commissioned by the Carnegie Endowment for International Peace and the International Chamber of Commerce, Conolly [1936, p. 338] wrote: ‘Whatever may have been the deeper forces underlying the situation in 1931, the proximate cause of the calamitous international liquidity crisis of that year [...] was the pyramiding of foreign short-term liabilities. See also the writing of Bertil Ohlin [League of Nations, 1931, p. 313]: ‘To the enormous amount of outstanding short-term obligations in 1931 must largely be attributed the severity of the crisis.’

¹⁹The ‘others’ category probably represents banks from other creditor countries such as Netherlands, Belgium and Switzerland. Austria and Germany were recorded separately, see below.

Similarly, in the case of Romania the calling in of foreign short-term credits is highlighted:

The international financial crisis which began in Central Europe in the summer of 1931 [...] had serious repercussions on the larger Roumanian banks, on account of their dependence upon foreign short-term credits and their close relations with Central European banking institutions. In the course of the autumn of 1931, a large part of the foreign credits enjoyed by Roumanian banks was called in. [League of Nations, 1934a, p. 182]

Evidence allowing us to discern short-term capital flows among international bank lenders and the Bulgarian and Romanian banking sector, as we did in the Polish case, is to the best of our knowledge unavailable. Nevertheless, both in Bulgaria and Romania a small number of ‘Big banks’ held a large share of total commercial bank deposits. In Bulgaria six foreign ‘Big banks’ accounted for 38 per cent of total deposits in Bulgarian commercial banking in 1929 [League of Nations, 1934a, p. 70]. In 1930, after certain mergers,²⁰ there were four large foreign banks in Bulgaria that relied on French, Belgian, German and Italian capital. Listed in ascending order of the value of deposits and current accounts in 1930 these were: Българска Генерална банка (Bulgarian General Bank), Франко Белгийска и Балканска банка (Franco Belgian and Balkan Bank), Кредитна банка (Credit Bank) and Италианска и Българска търговска банка (Italian and Bulgarian Commercial Bank) (see [Banque Nationale de Bulgarie, 1931, p. 28]).²¹

In Romania eleven banks held 29 per cent of deposits of all Romanian banks at the end of 1931 [League of Nations, 1934a, p. 182]. Several of these were either foreign banks or heavily relied on foreign short-term funds. For example, the Jewish Banca Marmerosch, Blank & Co, was ‘one of the two most prominent private institutions in the country’ whose principal foreign creditor was the Creditanstalt [Lampe and Jackson, 1982, p. 481]. This bank eventually failed in October of 1931, while the German controlled Banca Generală a Țării Românești (General Bank of Romanian Lands) collapsed in July of 1931 [Bernanke and James, 1991, pp. 52-53]. Moreover, a set of French controlled banks - Banca de Credit Roman (Roman Credit Bank), Banca Comercială Română (Romanian Commercial Bank) and Banca Franco-Română (Franco-Romanian Bank) - were in a ‘critical situation’ in 1931 [Baicu and Mauri, 2010, pp. 24-25].

The presence of a number of European banks in Bulgaria and Romania suggests that the calling in of foreign credits that the League of Nations records did not exclusively come from Central European countries. Thus if the case of Poland is of any guidance for Bulgaria and Romania, finance channel spillovers could have been due to both a common bank lender and interconnected financial institutions effects.

The case of Yugoslavia seems somewhat different to the ones considered above. Rather than pointing out foreign withdrawals as in the case of Poland, Bulgaria and Romania, the League of Nations notes that the events in Central Europe affected Yugoslav banks through the fall in confidence of domestic depositors:

²⁰This includes Deutsche Bank that merged with Credit Bank, and Balkan Bank that merged with Franco Belgian Bank Bulgaria [League of Nations, 1934a, pp. 69-70].

²¹The first two were comprised of French and Belgian capital, which explains their eventual merger in 1938 [Lampe and Jackson, 1982, p. 477]. The Credit Bank was German, and the only bank among the four that pre-dated the interwar period [Lampe and Jackson, 1982, p. 395].

The Austrian Credit-Anstalt crisis of May 1931, the temporary closing of the German banks in July of the same year, and the three-day bank holiday in Hungary which followed the German moratorium affected the confidence of the Yugoslav depositor [...] [League of Nations, 1935, p. 134]

Given that share capital of many of twenty largest banks in Yugoslavia – accounting for more than a half of total deposits as well as credits in the banking sector in 1929 – was in fact predominantly foreign owned (see [League of Nations, 1934a, p. 224] and [Rozenberg, 1937, p.12]) it would be most surprising if foreign banks withdrew funds from neighboring Bulgaria and Romania but would completely spare Yugoslavia. However, one could argue that while international spillovers were present in Yugoslavia they were of a smaller magnitude than in Bulgaria or Romania. The fact that by the end of the 1920s foreign share of bank capital in Yugoslavia was only half of its share in Bulgaria is supportive of this view [Lampe and Jackson, 1982, p. 395]. Moreover, the specific dual structure of Yugoslav banking explains why the reliance on foreign short-term capital was not universal throughout Yugoslav banking. The main source of financing in the two dominant financial centers in Yugoslavia - Belgrade and Zagreb - was very different. While European funds were concentrated in large Zagreb banks [Lampe and Jackson, 1982, pp. 395, 477-478] big Belgrade banks had little need for foreign capital as they were amply supplied with credits by the National Bank of Yugoslavia (also situated in Belgrade).²² The bulk of the foreign banking presence was thus concentrated in former Austro-Hungarian parts of the country. Hence we could expect that banks from these regions lost a lion's share of the 300 million dinar outflow mentioned by the National Bank of Yugoslavia in relation to the collapse of the Creditanstalt.²³ However, put in relative perspective, this amounted to only around two per cent of total commercial bank deposits as they stood on 1 June 1931 (own calculation based on [National Bank of the Kingdom of Yugoslavia, 1931, p. 67]). This is another piece of evidence suggesting that potential spillover effects were relatively small in Yugoslavia.

Finally, banking crises in Greece and Hungary are hard to connect with finance channel spillovers. In the case of Greece, the majority of deposit withdrawals ensued after the introduction of exchange controls on 28 September 1931. This leads to a conclusion that withdrawals must have been from the domestic public, as international capital movements would have been much more difficult under exchange controls. As for Hungary, the same reasoning applies after it introduced exchange controls on 17 July 1931. However, foreign withdrawals may have occurred in the period from the Austrian financial crisis in May until the introduction of exchange controls. Nevertheless, this is not borne out by empirical evidence. As our data shows, if anything, commercial bank deposits increased in May 1931 (cf. section 2).

In sum, finance channel spillovers contributed to banking crisis in several but not all of the CESEE-7. The available evidence suggests that the withdrawal of foreign short-term credits from the banking sectors of Poland, Bulgaria, Romania and Yugoslavia seems to have, to varying extent, contributed to banking crises in these countries. The presence of a wide array of international bank lenders (e.g. banks from Austria, Germany, England, France, Belgium, Italy and US) suggest that

²²Namely, while being only one of twenty regional branches of the National Bank of Yugoslavia during the 1920s, the Belgrade branch accounted on average for circa 43 per cent of credits disbursed by the Yugoslav central bank during the mentioned period (own calculation based on [Narodna Banka Kraljevine Jugoslavije, 1935, p. 313]).

²³See the Annual Report of the National Bank of Yugoslavia for 1931, pages XVI and XVII.

both the interconnected financial institutions effect and the common lender effect were possible. The Polish case is most indicative that both effects may have been at work.

4.3. Trade channel spillovers

Trade is another channel for spillovers. Bilateral trade may be a source of direct spillovers [Gerlach and Smets, 1995] and lead to the income effect [Forbes, 2002]. A crisis may spillover from country *i* to country *j* via international trade if a crisis in country *i* reduces its economic activity which in turn leads to a reduction of imports from country *j*. The condition for this income effect to be of noticeable consequence for the exports of country *j*, is that country *i* is a relatively large export market for country *j*.

International trade may also lead to spillovers due to the competitiveness effect. However, unlike the income effect the competitiveness effect is conditional on a change in the exchange rate in country *i*. For example, if countries *i* and *j* have a homogeneous trade structure and country *i* devalues its currency, the relative improvement in country *i* international trade competitiveness, may lead to spillovers in country *j* in two different ways. First, country *j* domestic sales may fall as imports from country *i* increase. Second, country *j* foreign sales (i.e. exports) to third markets (i.e. markets other than country *i*) may decline as country *i* exports to these markets increase (for effects related to third markets see [Corsetti et al., 2000]).

Is there evidence of trade channel spillovers contributing to financial crises in the CESEE-7 during 1931 either due to the income or competitiveness effect? The contribution of the competitiveness effect must have been limited as financial crises in the CESEE-7 started before Britain and Austria devalued their currencies on the 21 and 31 of September 1931, respectively [League of Nations, 1939-1940, pp. 194-195, Table 101]. On the contrary, the income effect may have been of consequence as Austria and Germany - two countries severely hit by financial crisis in May and July of 1931, respectively - were in fact large export markets for the CESEE-7. The income effect would manifest itself as a drop of exports from the CESEE-7 to Austria or Germany. An income effect could have contributed to currency crises as well as increased sovereign risk in the CESEE-7. Reduced exports would mean less foreign exchange earnings, which would put pressure on exchange rates and lead central banks to sell foreign exchange in order to defend fixed exchange rates. Moreover, a reduction of export earnings would increase sovereign risk as foreign exchange is crucial for the servicing of foreign denominated sovereign debt.

Table 7 shows export shares of the CESEE-7 captured by Austria and Germany during 1929-1931. It is evident that Austria and Germany were large export markets for CESEE countries. Germany accounted for around nineteen and Austria for approximately fifteen per cent of the total value of exports in the CESEE-7 on average during 1929-1931. Table 8 shows the current export value to Austria and Germany, expressed in the national currency of the exporter, for seven CESEE countries during 1929-1931. We concentrate on comparing the export values recorded in 1931 with the ones from the preceding year. While the value of exports to Austria and Germany from Czechoslovakia, Greece, Hungary, Poland, Romania and Yugoslavia decreased (except for Greek exports to Austria), Bulgarian exports to Austria and Germany actually increased. Exports from Czechoslovakia and Yugoslavia to both Austria and Germany decreased considerably. For Greece, Poland and Romania the drop in exports to Germany was much more pronounced than the decline in exports to Austria, while the opposite was true for Hungary.

In sum, exports from the CESEE-7 (except Bulgaria) to Austria and Germany declined during 1931. Financial crises in Austria and Germany may have reduced economic activity in these countries which could have led to a curtailment of imports from Czechoslovakia, Greece, Hungary, Poland, Romania and Yugoslavia. Austria and Germany suggest themselves as sources of an income effect for Czechoslovakia and Yugoslavia, while only Germany seem to have mattered for Greece, Poland and Romania, and only Austria for Hungary. Reduced foreign exchange earnings could have contributed to both currency crises and increased sovereign default risk in the mentioned CESEE countries. Several caveats are in order here. First, it should be noted that exports of the CESEE-7 to Austria and Germany were already falling during 1930 when compared to 1929 (save for Yugoslav exports to Germany). Thus the reduction in exports in 1931 may to an extent be driven by a global demand shock. Second, we report nominal values of exports in Table 8. Hence some part of the reduction of export values can undoubtedly be accounted for by deflation.

4.4. *International financial contagion*

In the preceding discussion we were able to use macroeconomic data to explore the relation of changes in the global economy, macroeconomic fundamentals and spillovers with financial crises in the CESEE-7 in 1931. However, macroeconomic evidence is of limited help in identifying financial contagion, as the two are by definition unrelated.²⁴ It is not surprising that theories of pure contagion tend to be very microeconomic in their focus, and as such difficult to incorporate into macroeconomic models that are rich enough to include the effects of spillovers and global shocks [Masson, 1999a, p. 588]. Nevertheless, we can still ask through which mechanisms financial contagion *could have* spread internationally during 1931?

To explain financial contagion (henceforth contagion), theoretical frameworks model the behaviour of financial agents by allowing for information asymmetries. Depending whether one defines financial agents as sovereign lenders, banks or bondholders (or other individual or institutional investors), contagion may arise if a crisis in country *i* - and not observed changes in macroeconomic fundamentals of country *j* - leads financial agents to, for example, stop lending, withdraw funds or sell assets in country *j*. We concentrate on describing how three theoretical mechanisms of contagion - herd behavior, signal extraction failure and wake-up calls - may have operated during 1931.

First, herd behaviour may contribute to contagion spreading from country *i* to country *j*, if some financial agents follow the actions of others based on an incomplete picture of macroeconomic conditions in a given country.²⁵ This mechanism could have been at work if following a financial crisis in Austria, Germany or even Britain a group of informed investors withdrew funds, or sold off assets in one or more countries from the CESEE-7, while a group of uninformed investors facing incomplete information on the potential repercussions of these financial crises for the CESEE-7 followed the actions of informed investors.

Second, signal extraction failure may occur when financial agents face incomplete information [Moser, 2003, p.163]. Financial agents may have took financial crisis in Austria, Germany or Britain

²⁴Financial contagion arises when the international transmission of a financial crisis cannot be linked to observed changes in macroeconomic fundamentals and results solely from the behaviour of financial agents [Claessens et al., 2001, p. 22].

²⁵Such behaviour may be treated as irrational [Chari and Kehoe, 2003]. It may also be rationalised in the presence of asymmetric information and fixed costs of gathering and processing country-specific information, since the latter may be costly for small investors [Calvo and Mendoza, 2000].

as a signal that one or more countries from the CESEE-7 may be facing similar issues - either because of some similarity or interdependence between one or more pairs from the two groups of countries - and withdrew funds from the latter. However, financial agents may have failed to extract the ‘right’ signal if information asymmetries led them to base their actions on incomplete information rather than true fundamentals.

Third, a financial crisis in country i may give financial agents a wake-up call [Goldstein, 1998, pp. 18-19] which leads them to reassess macroeconomic fundamentals of country j . Contagion may occur if financial agents interpret objectively unchanged fundamentals of country j in a way that leads them to see problems they have previously overlooked.²⁶ Thus financial crises in Austria, Germany or Britain, may have ‘nudged’ financial agents to interpret existing information on the fundamentals of the CESEE-7 in a different way and take actions which adversely affected one or more of these economies.

It should also be pointed out that what complicates the measurement of contagion in the case of 1931 is that any of the three contagion mechanisms discussed above may have also occurred within the CESEE-7. In other words, while we assume that financial crises in Austria, Germany and Britain were exogenous to the CESEE-7, contagion may have been endogenous in the CESEE-7.

A final consideration relates to a normative issue that contagion brings up. Namely, what is most worrying about contagion is the notion that even economies with sound economic fundamentals could experience financial crises. In turn, these crises can be considered unnecessary since they are not determined by underlying fundamentals [Moser, 2003, p. 164]. However, as we have seen in section 3, the CESEE-7 had weakened fundamentals by the onset of the European Financial Crisis of 1931. Hence, financial contagion, even if present, would not have been completely ‘undeserved’.

5. Summary and Conclusion

Financial crises in Austria, Germany and Britain during 1931 have been researched extensively. On the other hand, the experience of Eastern Europe during the European Financial Crisis of 1931 is largely unknown. The present paper had two main research questions. First, we asked whether the CESEE-7 (Bulgaria, Czechoslovakia, Greece, Hungary, Poland, Romania and Yugoslavia) experienced financial crises during 1931? To answer this question we gathered a new data set consisting of weekly and monthly observations on central bank foreign reserves, commercial bank deposits and long-term sovereign bond yields that allowed us to consider the occurrence of three types of financial crises - currency, banking and sovereign default risk crises. We found that 1931 was synonymous with financial crises in Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia. On the other hand, in Czechoslovakia, 1931 was only analogous to financial crises. Namely, the first group of countries experienced currency, banking and sovereign default risk crises during 1931, while Czechoslovakia experienced only a currency crisis.

Second, we asked what factors contributed to financial crises in the CESEE-7 during 1931? We considered the role of global shocks, macroeconomic fundamentals as well as international financial crisis transmission. The main findings can be summarised as follows. The onset of the Great Depression brought two key changes in the global economy which lasted throughout 1931

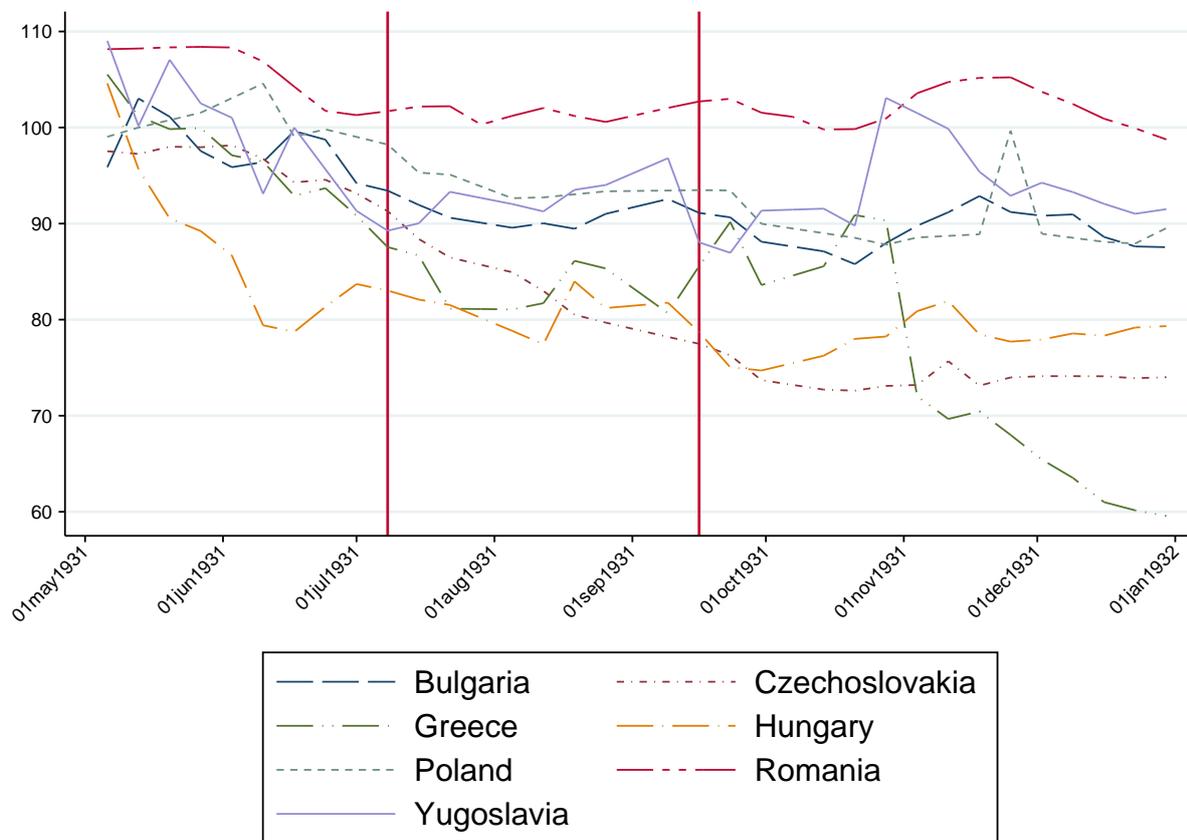
²⁶The difference between a wake-up call and a signal extraction failure is that in the latter case financial agents assume non-existent problems while in the former they become aware of existing ones [Moser, 2003, p. 163].

- the drying up of international credit and falling global demand. Both were important factors driving financial crises in the CESEE-7, however they affected primary good exporters and net lenders (Bulgaria, Greece, Hungary, Poland, Romania and Yugoslavia) more than net creditors and manufacture exporters (Czechoslovakia). To varying extent macroeconomic fundamentals were weakened in the CESEE-7 by the onset of the European Financial Crisis of 1931. In the run up to May 1931, Bulgaria, Hungary and Poland suffered a larger decline in economic activity than other CESEE countries and accordingly were the first to experience financial crises. International financial crisis transmission also mattered. Finance channel spillovers contributed to banking crises in Bulgaria, Romania, Poland and Yugoslavia. The banking sector of the former were exposed to international lenders who withdrew their funds following the financial crises in Austria and Germany. On the contrary, banking crises in Greece and Hungary were brought about mainly by domestic withdrawals, not least since exchange controls disabled repatriation of funds from the banking sector. Trade channel spillovers partly contributed to currency crises and increased sovereign risk in the CESEE-7 as financial crises in Austria and Germany led to a fall in exports from CESEE-7 to these large export markets and in turn reduced foreign exchange earnings.

In conclusion, completely avoiding financial crises during the European Financial Crisis of 1931 seemed elusive for Eastern Europe. However, as the case of Czechoslovakia shows strong economic fundamentals helped downsize the extent of financial crises.

Figures

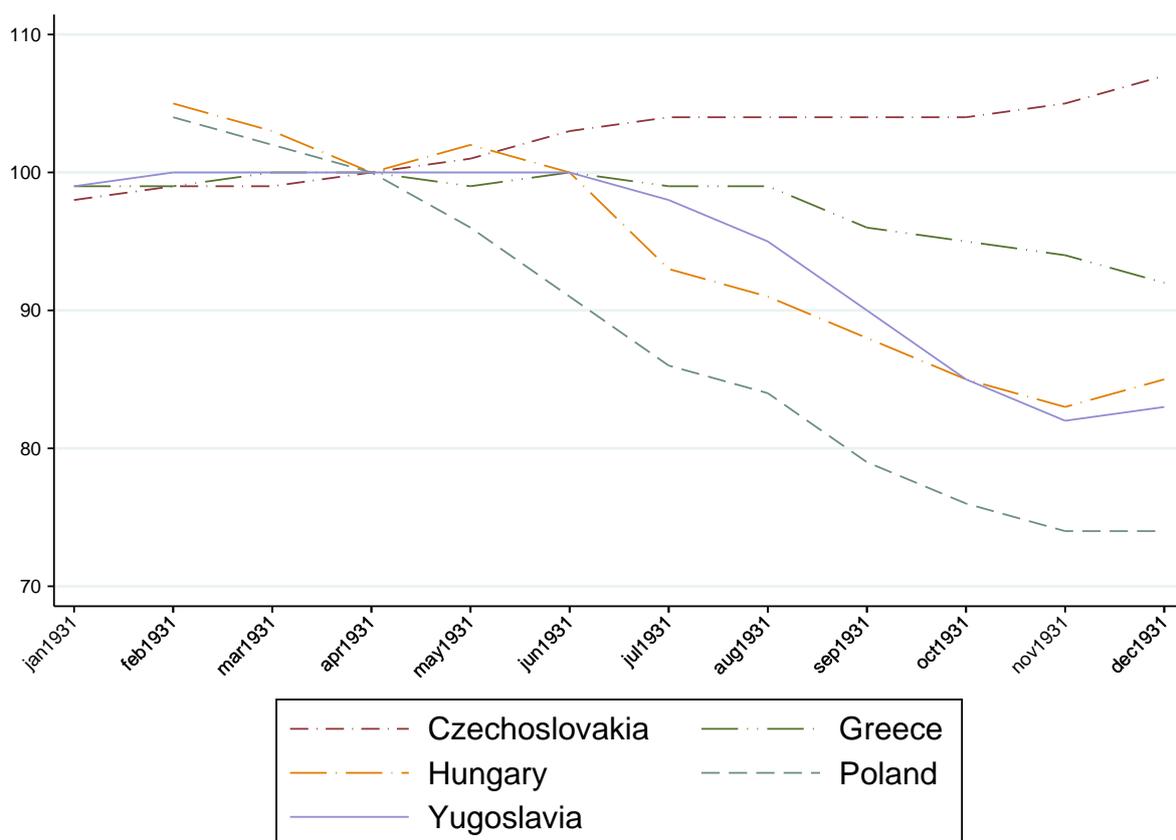
Figure 1: Central bank (gold and foreign exchange) reserves of seven CESEE countries (7 May to 31 December 1931, weekly frequency, April value = 100)



Notes: The two (red) vertical lines denote the second week of July (German financial crisis) and the second week of September (the week before Britain's exit from the gold standard), respectively.

Sources: Own calculations based on data from The Economist [1931].

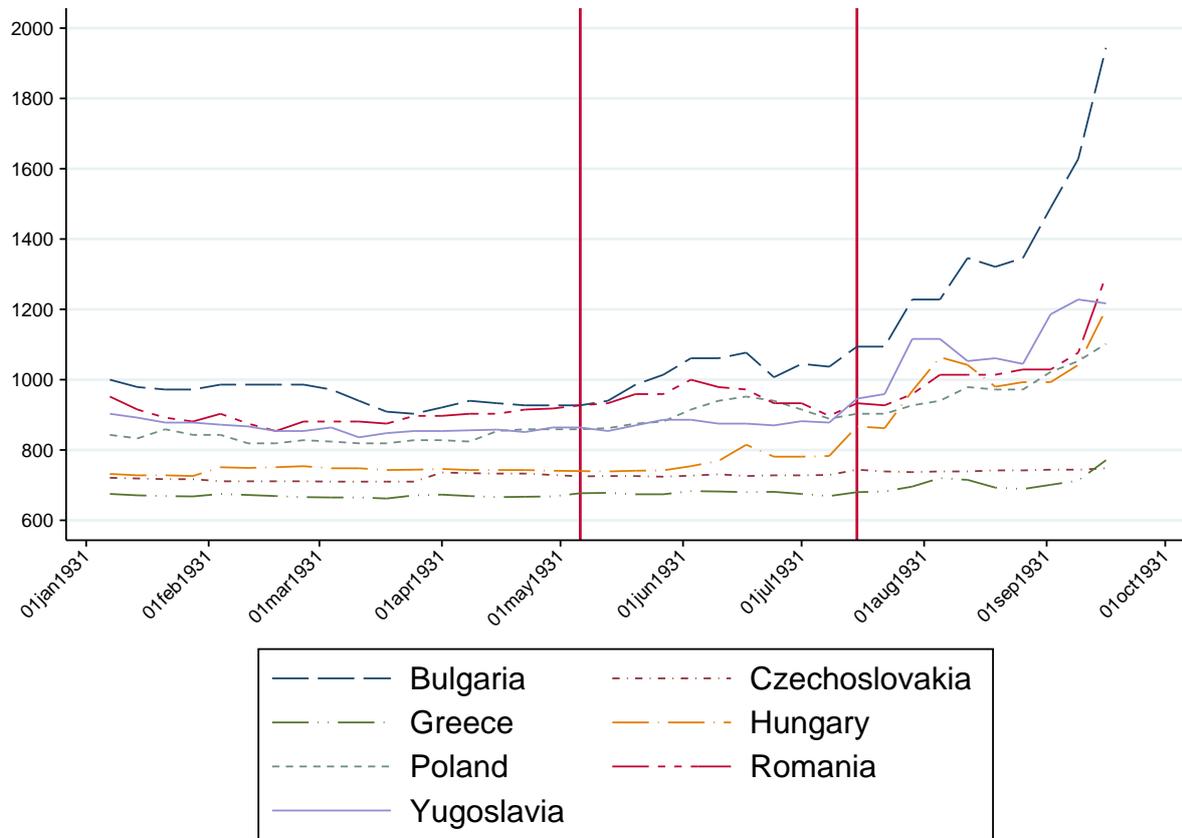
Figure 2: Commercial bank deposits of five CESEE countries (Jan to December 1931, monthly frequency, April value = 100)



Notes: Czechoslovakia - Deposits and current accounts in savings banks; Greece - current, savings and time deposits, including current accounts in all members of Central Corporation of banking companies and Postal Office Savings Bank; Hungary - current and savings accounts in twelve leading commercial banks and Postal Office Savings Bank; Poland - sight, savings and time deposits, including current accounts in all commercial banks, National Economic Bank, and State Agrarian Bank; Yugoslavia - sight, and time deposits, including current accounts in twenty leading private commercial banks.

Sources: [League of Nations, 1932b,c], [Statistisches Reichsamt, 1936].

Figure 3: Long-term sovereign bond yields of seven CESEE countries (7 January to 16 September 1931, weekly frequency, basis points)



Notes: The two (red) vertical lines denote the first week of May (Austrian financial crisis) and the second week of July (German financial crises), respectively.

Sources: Own calculations based on data from [The Financial Times, 1931].

Tables

Table 1: *Time-line: European Financial Crisis of 1931 in Austria, Germany and Britain*

Date	Event
8-May	Creditanstalt's losses revealed to the public
14-May	Initial bailout of the Creditanstalt
6-Jun	German government states it could no longer pay reparations
6-Jun	Run on German currency
20-Jun	US president Hoover announced one year moratorium on war debts
1-Jul	Extent of Nordwolle losses revealed to the public
13-Jul	German Danat Bank fails
14 and 15 July	Banking holiday in Germany
15 Jul-1 Aug	Series of exchange control decrees in Germany
15 Jul-1 Aug	Run on British currency
21-Sep	Britain officially suspends gold standard and devalues its currency

Sources: See text.

Table 2: *Overview of long-term sovereign bonds used*

Country	Coupon (%)	Year of issue	Payable in	LoN ¹	Purpose
Bulgaria	7	1926	sterling, US dollar	Yes	financial stabilisation, refugee settlement
Czechoslovakia	8	1922	sterling, US dollar	No	financial stabilisation, reconstruction
Greece	7	1924	sterling, US dollar	Yes	refugee settlement
	6	1928	sterling, US dollar	Yes	financial stabilisation, refugee settlement
Hungary	7.5	1924	sterling, US dollar, other ²	Yes	financial stabilisation
Poland	7	1927	sterling, US dollar	No	financial stabilisation
Romania	7	1929	French franc, sterling, US dollar	No	financial stabilisation
Yugoslavia	7	1927	US dollar	No	financial stabilisation

Notes: ¹League of Nations mediated loan. ²Other: lire, Swiss franc, Swedish crown, Dutch florin, Czech crown.

Sources: Columns 2 to 5 from [Flores and Decorzant, 2012, Flores Zendejas and Decorzant, 2015]. Column 6 from [Notel, 1986], except for Greece [The London Stock Exchange, 1929] and [Lazaretou, 2014]. Columns 2 to 6 for Yugoslavia from [Gnjatović, 1991].

Table 3: *Summary of Financial Crises in CESEE-7 during 1931, as well as the dates of the introduction of exchange controls, official devaluation of currency, and default on foreign sovereign debt*

Country	Financial Crisis in 1931 ¹	Introduction of exchange controls ²	Official devaluation of currency ³	Default on foreign sovereign debt ⁴
Bulgaria	C, B, D	15 Oct 1931	n.a.	1 Apr 1932
Czechoslovakia	C	2 Oct 1931	Feb 1934; Oct 1936	n.a.
Greece	C, B, D	28 Sep 1931	Apr 1932	1 May 1932
Hungary	C, B, D	17 Jul 1931	n.a.	Dec 1931
Poland	C, B, D	26 Apr 1936	n.a.	n.a.
Romania	C, B, D	18 Dec 1931	Nov 1936	15 Aug 1933
Yugoslavia	C, B, D	7 Oct 1931	Jul 1932	Oct 1932

Notes: ¹C, B and D stand for currency, banking and sovereign default risk crises, respectively.

Sources: ²Bulgaria: [Dimitrova and Ivanov, 2014, pp. 202-203]; Greece: [Lazaretou, 2014, p. 127]; Romania: [Stoenescu et al., 2007, p. 247]; Yugoslavia: [Hinić et al., 2014, pp. 277, 299]; other countries: [League of Nations, 1939-1940, pp. 194-195, Table 101]

³Greece: [Lazaretou, 2014, p. 127]; Romania: [Stoenescu et al., 2014, p. 247]; Yugoslavia: [League of Nations, 1939-1940, pp. 194-195, Table 101], [Hinić et al., 2014, p. 298]; other countries: [League of Nations, 1939-1940, pp. 194-195, Table 101]

⁴Bulgaria: [League of Nations, 1936, p. 288], [Dimitrova and Ivanov, 2014, p. 221]; Greece: LoN [League of Nations, 1936, p. 300], [Lazaretou, 2014, p.102, 123, 131]; Hungary: [League of Nations, 1936, p. 300]; Romania: [League of Nations, 1936, p. 301], [Stoenescu et al., 2014, pp. 247, 273]; Yugoslavia: [League of Nations, 1936, p. 303], [Gnjatović, 1991, p. 172], [Hinić et al., 2014, p. 298].

Table 4: *Composition of exports (percentage of primary and manufactured products in total exports) for nine CESEE countries, 1928-1929 average*

Source Products	[Drabek, 1985] ¹		[League of Nations, 1931] ²
	Primary	Manufactures	Manufactures
Bulgaria	93.1	6.9	7.2
Czechoslovakia	26.3	73.7	70.05
Greece	n.a. ³	n.a.	2.05
Hungary	77.9	22.1	21.45
Poland	76.2	23.8	17.05
Romania	96.2	3.8	n.a.
Yugoslavia	83.4	16.6	9.35
Austria	n.a.	n.a.	73
Germany	n.a.	n.a.	71.85

Notes: ¹Drabek [1985] uses the Standard International Trade Classification developed by the United Nations after WWII. ²League of Nations [1931] use The International Classification of the Brussels Convention of 1913. ³n.a. denotes that such data is not available in the given data source.

Sources: [Drabek, 1985, pp. 470-479], [League of Nations, 1931, pp. 169-170]

Table 5: *GDP per capita (1990 GK USD), value of exports (in current USD) per capita, occupational shares in agriculture (percentage of working population in agriculture in total working population) and openness ratio (exports plus imports as share of GDP) of seven CESEE countries circa 1930*

Country	GDP per capita ¹	exports per capita ²	% working in agriculture ³	openness ratio ⁴
Bulgaria	1284	7.40	81.9	26.2
Czechoslovakia	2926	37.04	37.5	55.2
Greece	2258	11.87	61.1	62.5
Hungary	2404	18.45	54.8	32.7
Poland	1994	9.66	67.3	n.a.
Romania	1219	12.10	80.7	21.8
Yugoslavia	1318	8.33	79.7	25.9

Notes and Sources: ¹[Maddison, 2010]. ²Own calculations based on [League of Nations, 1932a, 1933], [SEEMHN, 2014], [League of Nations, 1932d] and [Maddison, 2010]. ³[Buyst and Franaszek, 2010, p. 210 Table 9.1]. ⁴Data refer to 1929. Bulgaria, Greece, Romania and Yugoslavia from [Morys and Ivanov, 2015, p. 397, Table 6]. Czechoslovakia and Hungary own calculations based on [Mitchell, 2013] and [Pryor et al., 1971, p. 38].

Table 6: *Dates of pre-crisis peaks and changes in economic activity (in per cent) of eight CESEE countries*

Country	Date of pre-crisis peak	Change from pre-crisis peak to April 1931
Bulgaria	May 1930	-11.28
Czechoslovakia	Jul 1929	-6.49
Hungary	Aug 1929	-10.45
Poland	May 1929	-10.80
Romania	Dec 1929	-1.96
Yugoslavia	Dec 1929	-2.00
Austria	Jun 1929	-11.86
Germany	Apr 1929	-16.41

Notes and Sources: Dating of pre-crisis peaks was done according to the Bry et al. [1971] procedure, using the code written by James Engels (available at <http://www.ncer.edu.au/resources/data-and-code.php>). Dates of pre-crisis peaks and underlying data kindly communicated by Thilo Albers. Changes in economic activity are own calculations based on economic activity series (all indicators) shown in Albers and Uebele [2015].

Table 7: *Export shares (percentage of total value of exports) of seven CESEE countries captured by Austria and Germany, for 1929, 1930 and 1931.*

exports from	Austria			Germany		
	1929	1930	1931	1929	1930	1931
Bulgaria	12.5	7.7	16.7	29.9	26.2	29.5
Czechoslovakia	15	14	13.7	22.9	20.4	19
Greece	2.5	2.8	5.6	23.2	23.3	14
Hungary	30.4	28.1	29.8	11.6	10.3	12.8
Poland	10.5	9.3	9.3	31.2	25.7	16.8
Romania	9.4	9.1	10.7	27.6	18.8	11.4
Yugoslavia	15.6	17.7	15.2	8.5	11.7	11.3
CESEE-7 avg	15.6	14.3	15.9	22	18.9	16.8

Sources: [League of Nations, 1932a, 1933]

Table 8: *Current export values (million of national currency of the exporter) of seven CESEE countries to Austria, Germany and Hungary for 1929, 1930 and 1931.*

exports from	Austria			Germany		
	1929	1930	1931	1929	1930	1931
Bulgaria	803	478	993	1912	1621	1748
Czechoslovakia	3074	2439	1796	4691	3572	2493
Greece	177	166	234	1613	1392	588
Hungary	316	256	170	121	94	73
Poland	294.6	227	175	877.1	627	315
Romania	2733	2589	2368	8005	5364	2543
Yugoslavia	1237.8	1199	727	675.1	791	543

Sources: [League of Nations, 1932a, 1933]

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