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# THE HUNGARIAN TWIN CRISIS OF 1931

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# INTRODUCTION

Until 2007 there would have been no disagreement that the Great Depression comprised the most severe economic recession that the world has ever experienced. The Great Depression was a global phenomenon which culminated in a steep decline in industrial and agricultural production, persistent unemployment, and a fall in world trade. This was also the period with the highest frequency of financial crises in the past 150 years.[1] In the abundance of interwar financial crises, those of 1931 which originated in Central Europe stand out: their emergence contributed to turning what was previously an economic recession into a prolonged depression.[2]

The Central European crisis of 1931 started off in May with the collapse of the Austrian Credit-Anstalt, the largest universal bank of the country. Then in July the German Danatbank experienced liquidity problems and this produced a crisis in Germany. Hungary also experienced bank runs and in July, the country introduced a number of measures: bank holiday, closure of the stock exchange, de-listing of banks from the stock exchange, restrictions on deposit withdrawals and capital controls. All three countries experienced banking and currency crises in close succession in 1931 and afterwards, within a year, all of them went into a sovereign default. The events in Austria, Germany and Hungary were so similar and happened so quickly, within just a few months in 1931 that one is compelled to argue that their financial crises might have had similar origins or that these three countries were through some channels interdependent and super-imposed their crises on one another.

The regional approach to the Central European crises of 1931 has only been adopted by a few authors and they address questions other than the common causes behind the three countries' events or the interconnectedness between their crises.[3] Those researchers, who on the other hand, have been dealing with causes and interdependence, have only focused on a single country from the three. The most researched events are those of Germany which is understandable since the west's financial exposure was the highest to this country and therefore, Germany's crisis had a direct impact on its western lenders or claimants of reparations.[4] For Germany, the causes of the banking and the currency crises have been analyzed,[5] there is an ongoing debate on whether the latter or the former emerged first and whether they constituted a twin crisis,[6] and the channels through which the country's crisis spread towards the west have also been examined.[7] Moreover, research on Germany also stands out in a sense that heavily quantitative methods of crisis-analysis have been applied to its case. With regards to Austria, authors have primarily targeted the Credit-Anstalt with their research

[1] (Bordo et al. 2001)
[2] Charles Poor Kindleberger, *The World in Depression, 1929-1939* (Harmondsworth: Penguin Books, 1987).
[3] E.g. Ágnes Pogány, 'Válságok És Választások', *Aetas,* /4 (2000), 32-49.
[4] C. H. Feinstein, *Banking, Currency, and Finance in Europe between the Wars* (Oxford: Clarendon Press [u.a.], 1995) xviii.
[5] Harold James, 'The Causes of the German Banking Crisis of 1931', *The Economic History Review,* 37/1 (1984), 68-87, Theo Balderston, 'The Banks and the Gold Standard in the German Financial Crisis of 1931', *Financial history review,* 1/1 (1994), 43-68, Peter Temin, *Lessons from the Great Depression* (1989; Cambridge, Mass: MIT Press, 1991).
[6] Isabel Schnabel, 'The German Twin Crisis of 1931', *The Journal of Economic History,* 64/3 (2004a), 822-71, Peter Temin, 'The German Crisis of 1931: Evidence and Tradition', *Cliometrica,* 2/1 (2008), 5-17, Thomas Ferguson and Peter Temin, *Made in Germany: The German Currency Crisis of July 1931* (2003) 1-53, Isabel Schnabel, 'Reply to Thomas Ferguson and Peter Temin's "Comment on the German Twin Crisis of 1931"', *The Journal of Economic History,* 64/3 (2004b), 877-78.
[7] Olivier Accominotti, 'London Merchant Banks, the Central European Panic, and the Sterling Crisis of 1931', ibid.72/1 (2012), 1-43.

and have addressed the causes behind its failure.[8] The abundance of case studies on the Credit-Anstalt is reasonable, since this was the largest Viennese bank that had influence over some 2/3 of the country's industrial sector.[9] However, problems with the currency, the interplay of the different types of crises and potential crisis propagation channels have not been investigated in-depth. Finally, Hungary is the least researched country of the three. There is not one study which has placed the causes of the 1931 financial crises or their potential spread from one regional country to another into its focus. Only general studies on the interwar period[10] or works on the long-term development of the Hungarian financial system touch upon the issue.[11]

The central tenet of the whole of my PhD thesis is taking a regional approach to the analysis of the causes of the 1931 financial crises in Central Europe and their potential interconnectedness, and adopting methods already applied to the German case but not to the other two countries. To achieve this, I will conduct an in-depth research on Hungary's banking and currency crises, rely on Austrian studies when it comes to banking but complement them with an investigation of currency problems and use the existing German literature as primary reference. The goal of my PhD thesis is to understand whether i) there was a common cause behind the financial crises of the three countries, and ii) whether the three countries influenced one another during the crises.

Regarding the first question, my hypothesis is that the financial systems of the three countries shared certain characteristics and these played an important role in the banking crises of 1931. Based on my current understanding, one such characteristic was that, dating back to the 19th century, universal banks emerged to dominate the banking sector in the three countries.[12] Universal banks were a combination of what we today call commercial banks which collect deposits and give loans, and investment banks which not only lend to the economy but also invest equity into it. The peculiarity of universal banks was that in a downturn they suffered from non-performing loans as commercial banks as well as from a decline in the value of their equity stakes, as investment banks. Their double exposure therefore made them doubly vulnerable during recessions. At the same time, their wide-ranging activities and their ensuing influence on a large section of the economy made them essential players from a political perspective. Universal banks were not only powerful enough to influence policy-making but their economic clout was an essential channel through which politicians may have sought to influence the country's economic development. My hypothesis is that in all three countries there were a number of universal banks which were influenced by policy-makers during the 1920s and this played an essential role in their failure in 1931 and in the financial crisis of 1931.

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[8] Aurel Schubert, *The Credit-Anstalt Crisis of 1931* (Cambridge [England]: Cambridge University Press, 1991) xiv, Fritz Weber, 'From Imperial to Regional Banking: The Austrian Banking System, 1918–1938', in Charles H. Feinstein (ed.), *Banking, Currency, and Finance in Europe between the Wars* (Oxford: Oxford University Press, 1995), Dieter Stiefel, '"For Better, for Worse…": The Credit-Anstalt and Its Customers in 1931', in Alice Teichova, Agnes Pogany, and Terry Gourvish (eds.), *Universal Banking in the Twentieth Century: Finance, Industry and the State in North and Central Europe* (1994).

[9] Schubert, *The Credit-Anstalt Crisis of 1931*.

[10] T. Iván Berend, *Válságos Évtizedek: Közép- És Kelet-Európa a Két Világháború Között* (Budapest: Gondolat Könyvkiadó, 1982)., Miklós Szuhay and T. Iván Berend, *A Tőkés Gazdaság Története Magyarországon: 1848-1944* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1978)., Michael Kaser and Rudolf Nötel, 'Kelet-Európa Gazdaságai a Két Világválságban (Eastern European Economies in Two World Crises)', in T. IváN Berend and Knut Borchard (eds.), *Válság, Recesszió, Társadalom : Az 1930-as És Az 1970-1980-as Évek Összehasonlítása : Válogatott Tanulmányok* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1987).

[11] Béla Tomka, *A Magyarországi Pénzintézetek Rövid Történetet, 1846-1947* (Budapest: Aula Könyvkiadó, 2000).

[12] Richard Lawrence Rudolph, *Banking and Industrialization in Austria-Hungary: The Role of Banks in the Industrialization of the Czech Crownlands, 1873-1914* (Cambridge: Cambridge University Press, 1976).

Regarding the second question, i.e. crisis propagation, my hypothesis is that the 1931 financial crises of Austria, Germany and Hungary may have been interconnected through two channels, their financial systems and trade. The origins of this interconnectedness can be traced back to the 19th century. Austria and Hungary had been two parts of the same empire until 1918 and they comprised a single market.[13] Germany was closely integrated with the market of the Austro-Hungarian Monarchy. Market integration was visible through linkages across financial institutions and through extensive trade. My hypothesis is that these financial and commercial bonds were not (or not entirely) expunged by the war, and the channels that were maintained during the 1920s played an important role in propagating the 1931 crisis across these three countries.

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My PhD thesis is still at an early stage and in this current paper I am only presenting my preliminary findings on Hungary in connection with the first question, the causes of the financial crises in 1931. The data reveal that already in 1928 Hungary experienced currency and banking "pre-crisis events".[14] These pre-crisis events developed independently of each other but their common origin was an agricultural downturn which resulted from the unfavorable changes to terms of trade. Since the country was highly dependent on agriculture, the decline in the export of agricultural products caused a significant fall in foreign exchange revenues. This in turn put a pressure on the currency: the gold cover - measured as the ratio of gold and foreign exchange reserves to the volume of banknotes in circulation and bills rediscounted by the central bank - dropped due to the decline of foreign exchange reserves. Banks, on the other hand, also experienced a crisis since a substantial part of their assets had been invested in agriculture. Producers could not profitably sell their goods abroad when the terms of trade changed and therefore, they started defaulting on their loans. Thus, banks' assets were frozen in non-performing agricultural loans and they had to turn to the central bank for refinancing agricultural bills in order to improve their liquidity. This was another source of stress on the gold cover: the increase in the volume of rediscounted bills. The parity of the exchange rate, i.e. the gold cover was thus pressured from two directions: declining foreign exchange inflows and banks' increasing demand for rediscount. Banking and currency problems hence reinforced each other and created a twin pre-crisis event in 1928.

The pre-crisis events of 1928 however, did not end in catastrophe as the real event in 1931 did. The Hungarian National Bank was able to negotiate a foreign exchange loan with a number of central banks in mid-1929 and prior to that, it received a loan facility from the Bank of England. These fresh foreign exchange injections proved sufficient to support the currency by boosting the gold cover back to the pre-crisis levels. The banking system, on the other hand, was saved by the significant inflow of deposits. The population of Hungary was slowly returning to the use of the banking system after the hyperinflationary years, followed by the stabilization between 1924 and 1926 and the transfer to the new currency, the pengő, from January 1, 1927. Public confidence in the banking system was an essential factor that helped financial institutions during the 1928 pre-crisis events: fresh deposits mitigated banks' liquidity needs in the face of non-performing loans and when the central bank's rediscount window was also narrow.

Even though a big crisis was averted in 1928, these pre-crisis banking and currency episodes revealed and exacerbated the vulnerability of the banking system. They showed the financial system's excessive exposure to agriculture and they led to banks' increasing dependence on short-term foreign loans. The reason for the latter was that the experience of 1928 turned the Hungarian National Bank more restrictive than before and very stringent when it came to

[13] David F. Good, *The Economic Rise of the Habsburg Empire, 1750-1914* (Berkeley: University of California Press, 1984).
[14] I am borrowing the concept from Schnabel. Schnabel, 'The German Twin Crisis of 1931',

rediscounting. Therefore, instead of relying on the central bank, financial institutions were forced to utilize short-term foreign loans to alleviate their temporary liquidity needs. Thus, during 1929 banks packed up their balance sheets with foreign capital. The banking system with these two weaknesses, i.e. excessive exposure to agriculture and to short-term foreign financing, could not weather the more severe storm of 1931.

It appears that the banking system was at the center of an enfolding catastrophe after the 1928 pre-crisis events. On the one hand, it was burdened by an increasing proportion of non-performing loans, due to the rise of insolvencies. On the other hand, it was pressured to use its resources to support the troubled economy. These factors increased banks' instability and the only outstanding question was which event would blow away the system. It happened after Prime Minister Bethlen's speech about the country's financial situation in the last quarter of 1930 when a rumor was started that the government would confiscate deposits and invest them in the economy. This induced a gradual capital flight which exacerbated from June-July in the following year. At that point, currency problems joined in to the panic because the flight of foreign capital was a stress on the parity as well. There was double pressure on the central bank again: financial institutions' demand for rediscount increased and foreign exchange reserves declined. These culminated in a twin crisis in 1931.

The purpose of the paper is to describe in detail and provide evidence to the above interpretation of the Hungarian crisis. The structure of the paper is as follows. Section I describes the literature that my analyses rely on. It introduces the theoretical approach to the analysis of financial crises which has already been adopted to the investigation of the German 1931 financial crisis but not to that of Austria or Hungary. Afterwards, it discusses what has been written about the Hungarian financial crisis of 1931 so far and how that literature fits into the theoretical approach to the financial crisis analysis. Then Section II presents my preliminary findings on the Hungarian crisis of 1931, while Section III discusses the next steps of my work.

# SECTION I - LITERATURE REVIEW

This section offers a backdrop to the analysis of the 1931 Hungarian crisis which is the focus of the next section. The first part of this section discusses the theoretical approaches on why a financial crisis emerges and describes the analytical models that have been developed on the basis of these theoretical approaches. The second part of the section offers an overview of the existing literature related to the particular financial crisis under consideration, the one in Hungary in 1931.

## LITERATURE ON FINANCIAL CRISES

There are two contentious views in the literature on why financial crises occur: the monetarist approach, developed by Friedman and Schwartz[15] and the view opposing it, advocated by Kindleberger[16] and Mishkin.[17] Monetarists propose that financial crises occur as a result of the contraction of the money supply which then leads to a decline in aggregate economic activity. Based on this approach, a financial crisis necessarily involves a banking crisis because it is through the financial system that the contraction of the money supply is being felt in the

[15] Milton Friedman and Anna J. Schwartz, *A Monetary History of the United States 1867-1960* (12.; Princeton: Princeton University Press, 1963).
[16] Charles Poor Kindleberger, *Manias, Panics and Crashes* (Basingstoke: Palgrave, 2001).
[17] Frederic S. Mishkin, 'Anatomy of a Financial Crisis', *Journal of evolutionary economics,* 2/2 (1992), 115-30.

economy. The underlying assumption of this view is that the decline of the money supply is induced by some sort of policy failure: a misguided decision by policy-makers leads to the contraction of the money supply which then produces a decline in aggregate economic activity. On the other hand, the alternative view adopts a much broader definition and argues that financial crises either involve sharp declines in asset prices, failures of large financial and non-financial firms, disruptions in foreign exchange markets, or a combination of all of these. A financial crisis based on this definition is not necessarily monetary in its origins and may not at all involve the banking system. According to this approach, a financial crisis may very well generate from the real economy (as opposed to having monetary origins) and may not be the result of policy failure.

The theoretical analysis of financial crises has been built around these two opposing views of the origins of financial crises and has developed through three generations. The models of the first two generations adopt the monetarist view on the causes of financial crises and work with the assumption that financial crises have monetary origins and their ultimate cause is policy failure. Because of this assumption, the models focus exclusively on currency crises and assume that the banking system does not play an active crisis-trigger role, only a crisis-distributor function. First-generation models, whose emergence is usually signified by Krugman's paper,[18] apply the basic assumption that the government's "uncontrollable need for seigniorage income" to finance the budget deficit undermines the fixed parity of the currency and causes a panic. However, the credibility of these models has been gradually questioned because the underlying policy conflict has not been observable in all cases.[19] This gave rise to second-generation models which assume that policy does not actually have to fail for a currency crisis to occur - it is sufficient if the public's expectations are pessimistic about the path policy-makers may take.[20] If, for instance, unemployment is high then the public may reasonably expect an increase in the budget deficit. This may induce a currency crisis even before the government would actually choose to enforce an expansionary policy. As Krugman sums up in a later paper, both first- and second-generation models assume that policy failure is the cause behind the currency crisis.[21]

Then in the mid-1990s the monetarist view and the first- and second-generation models built around it lost their allure. The reason for this was that these models could not plausibly explain the causes of the East Asian crises which did not involve apparent policy failure and still a number of countries experienced a protracted period of financial distress. These events gave rise to third-generation models that incorporated Kindleberger's broader definition of financial crises which admits that a crisis may have not only a monetary but also a real economy trigger and may not at all be the result of policy failure. This new approach assigned a much greater role to the private sector and in particular to the banking system. The signature work in this area is that of Kaminsky and Reinhart[22] who have recognized that currency and banking crises occur at the same time and they identified these events as twin crises. Based on their empirical investigation of financial crises in industrial and developing countries between 1970 and 1995, they find that banking sector problems in most cases precede balance-of-payment (i.e. currency) problems. They argue that as the crisis of the currency unfolds, it further deepens the banking panic, activating a "vicious spiral" in which the two types of crisis reinforce each other. The key area in which the Kaminsky-Reinhart approach is an advance vis-à-vis first- and

[18] Paul Krugman, 'A Model of Balance-of-Payments Crises', *Journal of Money, Credit and Banking,* 11/3 (1979), 311-25.
[19] Michael P. Dooley, 'A Model of Crises in Emerging Markets', *The Economic Journal,* 110/460 (2000), 256-72.
[20] Reference in: Paul Krugman, 'Balance Sheets, the Transfer Problem, and Financial Crises', *International tax and public finance,* 6/4 (1999), 459-72.
[21] Ibid.
[22] Graciela L. Kaminsky and Carmen M. Reinhart, 'The Twin Crises: The Causes of Banking and Balance-of-Payments Problems', *The American Economic Review,* 89/3 (1999), 473-500.

second-generation models is that it allows the real economy to be a source of distress and admits that the banking system may have a crisis-trigger role.

## LITERATURE ON THE HUNGARIAN FINANCIAL CRISIS OF 1931

The current historiography on Hungary's great depression and the crises of 1931 seems to adopt the monetarist view and suggests that the events were caused by policy failures.

There is limited analysis on Hungary's economic history in the interwar period and there is not one study that would analyze the financial crises of 1931. Historical narrative works are available which describe the events with broad brush strokes but they do not go in-depth into analyzing the causes of currency problems or bank failures in 1931.[23]

These narratives focus primarily on the recession that started in the late 1920s which, so the studies argue, was caused by the exogenous shock of deteriorating terms of trade on the one hand, and the end of foreign capital inflows on the other hand. These posed a challenge because Hungary was an excessively indebted state as a result of running a trade deficit throughout much of the second half of the 1920s and financing it from foreign capital. The country was already close to bankruptcy when foreign capital pulled out from the region in 1929 and terms of trade took an even more unfavorable turn. According to this interpretation, Hungary was a victim of the Austrian and German events in 1931 which contributed to the intensified withdrawal of foreign capital and thereby created a sudden shock for the already indebted country.

Although it is not stated explicitly, it appears that the existing literature on Hungarian events adopts the monetarist view on the causes of financial distress. Its argument is that the money supply contracted in 1928/29 and then again in 1931 and the reason why these events so severely impacted the economy was that the misguided policy of decision-makers had gradually thrown the country into high levels of indebtedness and increased its exposure to foreign financing. In this view, the private sector, or in particular, the banking system does not play an active role in 1931: it is portrayed as a victim of currency troubles originating from high debt levels and foreign exposure. The currency problems of 1931 translated into less central bank life support available for financial institutions and that induced a crisis in the banking system. When banks' demand for central bank rediscount increased at the peak of the crisis and put additional stress on the already pressured currency, it motivated policy decisions such as a three-day bank holiday, restrictions on deposit withdrawals, the closure of the stock exchange and the introduction of capital controls. A more recent study on the history of Hungary's financial development argues that banks had been prudent lenders throughout the 1920s. Because of this, as well as the government's successful crisis management from July on, after the German crisis, Hungarian banks remained resilient in the face of the imported financial storm of 1931.[24]

The argument of this paper is that the Hungarian financial crisis of 1931 can be more accurately described through the third-generation model of financial crises which incorporates the

[23] T. Iván Berend, *Válságos Évtizedek: Közép- És Kelet-Európa a Két Világháború Között* (Budapest: Gondolat Könyvkiadó, 1982)., Miklós Szuhay and T. Iván Berend, *A Tőkés Gazdaság Története Magyarországon: 1848-1944* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1978)., Michael Kaser and Rudolf Nötel, 'Kelet-Európa Gazdaságai a Két Világválságban (Eastern European Economies in Two World Crises)', in T. IváN Berend and Knut Borchard (eds.), *Válság, Recesszió, Társadalom : Az 1930-as És Az 1970-1980-as Évek Összehasonlítása : Válogatott Tanulmányok* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1987).

[24] Béla Tomka, *A Magyarországi Pénzintézetek Rövid Történetet, 1846-1947* (Budapest: Aula Könyvkiadó, 2000).

banking sector into its analysis and admits that the origins of the crisis may lie in the real economy, i.e. may not be the result of economic policy failure. Section II will present my preliminary findings on this issue.

# SECTION II – PRELIMINARY FINDINGS ON THE HUNGARIAN CRISIS OF 1931

In this section I am presenting my preliminary findings on the Hungarian crisis of 1931. First, I explain what definition I am applying to financial, banking and currency crises and subsequently, I present the evidence for Hungary based on these definitions. Afterwards, I discuss the data and offer an interpretation.

## DEFINING FINANCIAL, BANKING AND CURRENCY CRISES

Reinhart and Rogoff's book provides a comprehensive typology of financial crises. Their definition of financial crises incorporates inflationary, currency, banking and sovereign debt crises.[25] The authors differentiate between crises which are defined by quantitative thresholds and those which are defined by events. Based on this characterization, they classify currency crises among those defined by quantitative thresholds. A currency crash occurs when the annual depreciation of the currency versus the US dollar is 15% or more. The authors describe banking crises by quantitative measures as well as events. The decline in the price of bank stocks relative to the market index, the fall in deposits, the collapse of asset prices, the rise in bankruptcies, or the increasing proportion of non-performing loans may all serve as indicators of a banking crisis. At the same time, since these data are seldom available at high frequency, the authors also define banking crises through events: bank runs that lead to closures, merging or takeover or large-scale government assistance to an important (or a group of important) financial institution(s).

In this paper I analyze currency and banking crises and I refer only to these when I use the term "financial crises". I rely on the Reinhart-Rogoff definition when it comes to banking crises and use quantitative as well as event-based measures. I have monthly data for deposits and insolvencies from the quarterly publication *Gazdasági Helyzetjelentés*, published by Magyar Gazdaságkutató Intézet[26]. I am supplementing this dataset with a chronology of events constructed from my review of the two major contemporary weekly financial newspapers, the *Magyar Pénzügy*[27] and *A pénzvilág*[28] as well as from my review of the minutes of the board meetings of the Hungarian National Bank and the same for the Central Commission for Financial Institutions[29] between 1925 and 1931.

[25] Carmen M. Reinhart, Kenneth S. Rogoff, and Inc Books24x, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton: Princeton Univ. Press, 2009) xlv.
[26] The title of the publication in English: „Economic Status Report". The name of the publisher in English: „Institute for Hungarian Economic Research". The institute was a contemporary think tank, established in 1929 and sponsored by the Hungarian National Bank.
[27] In English: „Hungarian Finances"
[28] In English: "Financial world"
[29] In Hungarian: „Pénzintézeti Központ" Established in the 19th century for the oversight of foreign-owned assets, then its operations were suspended. It was re-established in 1916 with a new purpose: to supervise banks. It was owned partially by the state but the majority of joint-stock financial institutions were also its quota holders (over 500 of them, including all large institutions). Its purpose during the interwar period was to conduct annual audits of all of its member institutions, except for the largest ones.

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For the definition of the currency crisis, instead of relying on Reinhart and Rogoff, I apply the Eichengreen-Wyplosz-Rose exchange market pressure index (EMP)[30] because I find it more relevant to the particular case than the Reinhart and Rogoff measure. Since Hungary's currency was fixed to gold during the period under observation, currency pressures are not observable through the exchange rate of the domestic currency to a major foreign currency (the parity against the dollar or the pound sterling was kept fixed during the whole period). Nevertheless, changes in central bank reserves and in interest rates may indicate if currency problems were intensifying. Since the EMP index incorporates changes in reserves, interest rates as well as the exchange rate, it is more relevant to the historical context than the use of the exchange rate by itself. I have collected the data for the EMP from the reports of Magyar Gazdaságkutató Intézet and from the archival records of the Hungarian National Bank.

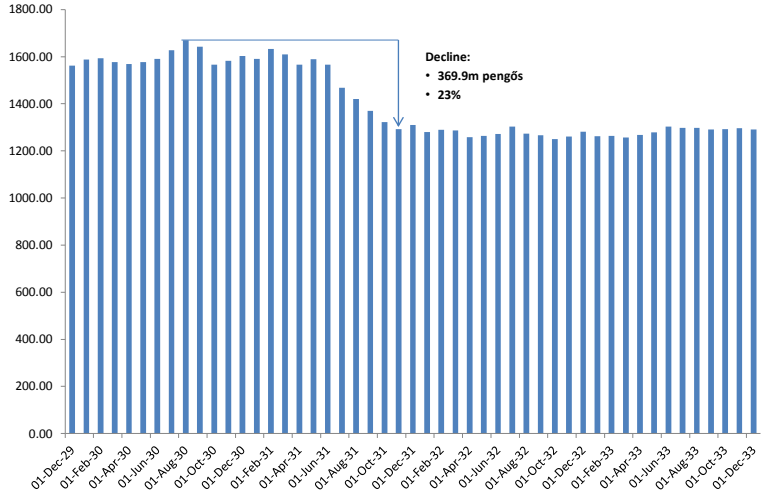
## WHAT DO BANKING CRISIS INDICATORS TELL ABOUT HUNGARY IN 1931?

When we take a look at the most widely applied quantitative measure of banking crises, the level of deposits in Figure 1, it is apparent that after August 1930 there was already a minor decline but then deposit levels climbed back and the big run came in July. In total, from the peak of August 31, 1930 to the trough of Nov 30, 1931, the banking system lost 23% of its deposits.

**Figure 1 Deposits**

**From Aug 1930 to Nov 1931, 377m pengős of deposits left the banking system which was 23% of the total at peak**

*Total deposits, Dec 1929 – Dec 1933, m pengős**




** The data include the deposits of the 12/13 largest Budapest institutions, the 33/34 largest non-Budapest institutions and the Postal Savings Bank. Together they represent app. 85% of all deposits of the financial system.*

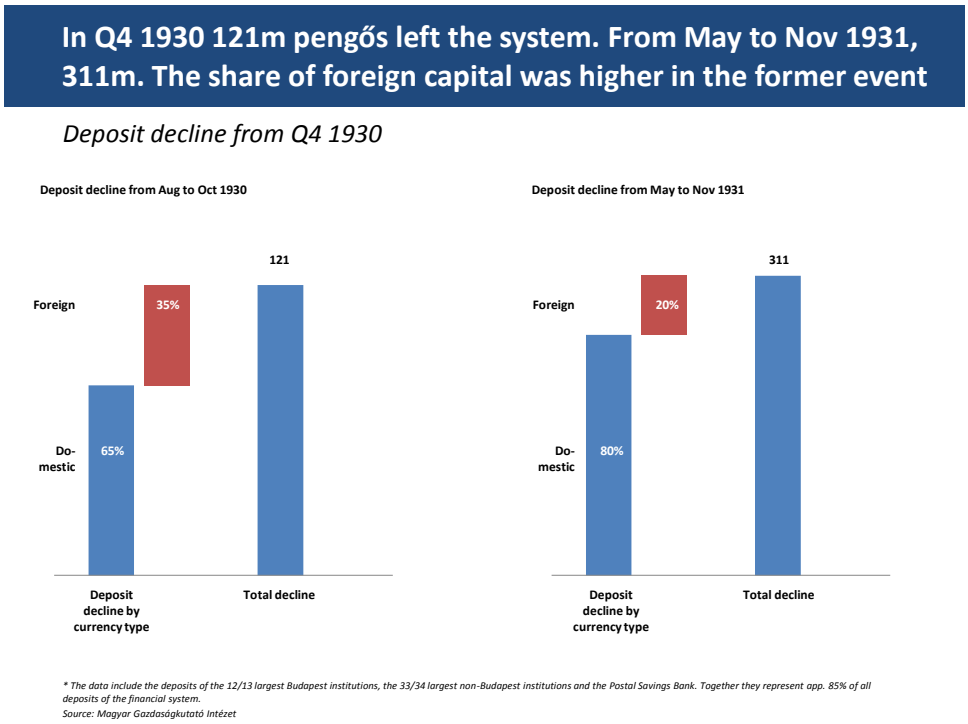
*Source: Magyar Gazdaságkutató Intézet*

The minor drop from August to October was approximately a 10% decline in deposits and was possibly caused by a rumor that the government would confiscate deposits from banks and invest them in the economy. This proposal came from a Member of Parliament[31] in reaction to Prime Minister István Bethlen's speech in which the latter announced that global conditions would not allow Hungary to obtain a large foreign state-investment loan and in general the country's financial conditions were dire.[32] In response to the confiscation proposal, deposit

[30] Barry Eichengreen, Andrew Rose, and Charles Wyplosz, 'Contagious Currency Crises: First Tests', *The Scandinavian Journal of Economics,* 98/4 (1996), 463-84.
[31] Name: Dezső Buday
[32] Magyar Pénzügy, Oct 15, 1930

holders started a minor run. Approximately 2/3 of the capital was lost to domestic currency holders, 1/3 to foreign deposit holders. The biggest losers were the largest Budapest banks: close to 90% of the capital escaped their vaults. (Figure 2)

**Figure 2 The minor deposit decline in Q4 1930 and the big deposit decline in 1931**




** The data include the deposits of the 12/13 largest Budapest institutions, the 33/34 largest non-Budapest institutions and the Postal Savings Bank. Together they represent app. 85% of all deposits of the financial system.*
*Source: Magyar Gazdaságkutató Intézet*

The reason why this minor run in late 1930 is interesting is because it demonstrates well the jittery mood that the country was in. Prior to the confiscation proposal, throughout 1930 banks were under heavy pressure from the public to lend more and not "sit on their reserves" when the country was suffering.[33] Banks shot back at these accusations by pointing out that insolvencies were on the rise and a substantial part of their assets was comprised of non-performing loans and the proportion of them was gradually increasing. Financial newspapers were publishing information on the extent of banks' frozen capital already in January 1930. For instance, one article argued that 70-75% of an app. 500,000 pengő mortgage loan to agriculture was non-performing.[34] A look at insolvencies data on Figure 3 underscores this view. In fact, insolvencies were rising from as early as 1928 and they had a first peak in late 1929 and a second peak in early 1932. This suggests that banks must have been burdened by defaults from as early as 1928.

The deposit decline after June 1931 was substantial and lasted from July through November. Of the approximately 370m pengős of deposits that left the banking system from Aug 1930 through Nov 1931 (from peak to trough), 270m were domestic currency, pengő deposits, 107m foreign currency deposits. (Figure 4) This signifies a decline of 20% in pengő and 31% in foreign currency deposits. In absolute terms, as Figure 5 depicts, Budapest banks were hit the hardest because 290m pengős left their accounts. Nevertheless, in their case the drop meant "only" 21% of their total deposits, while non-Budapest institutions lost 27% of their own holdings.

[33] Magyar Pénzügy, June 4, 1930
[34] A pénzvilág, January 8, 1930 - The total assets of the financial sector as of Dec 31, 1930 were 4,873m pengős. Source: Nagy Magyar Compass (Title of publication in English: „Big Hungarian Compass") The origins of the Compass date back to the 19th century and Compass publications were available for all parts of the Austro-Hungarian Monarchy even in the post-war period.

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**Figure 3 Insolvencies**

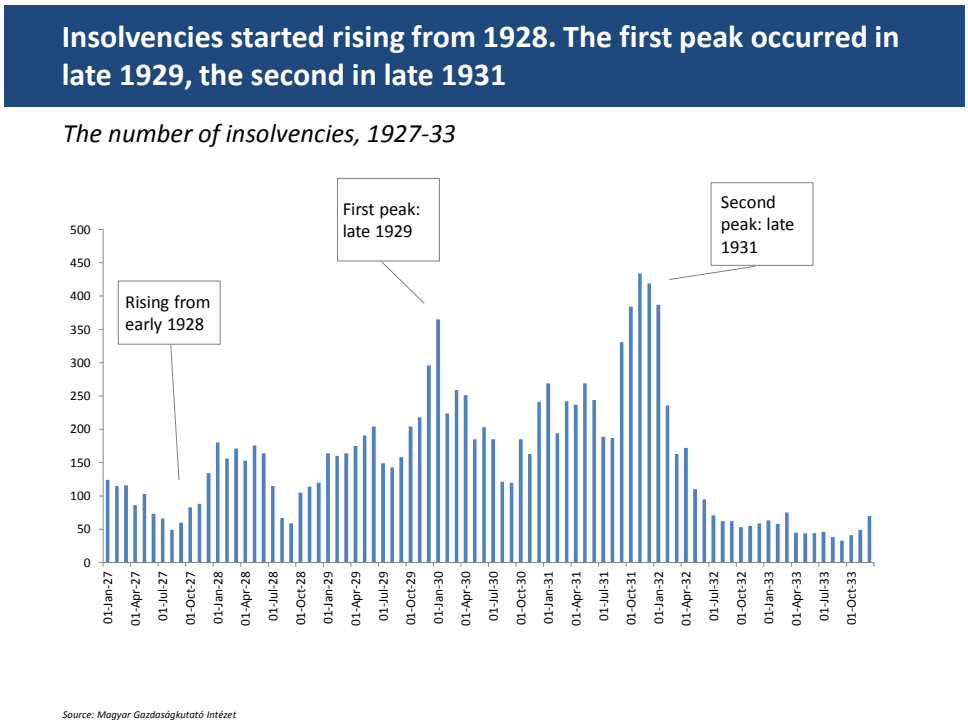


**Figure 4 Deposit decline by type of currency**

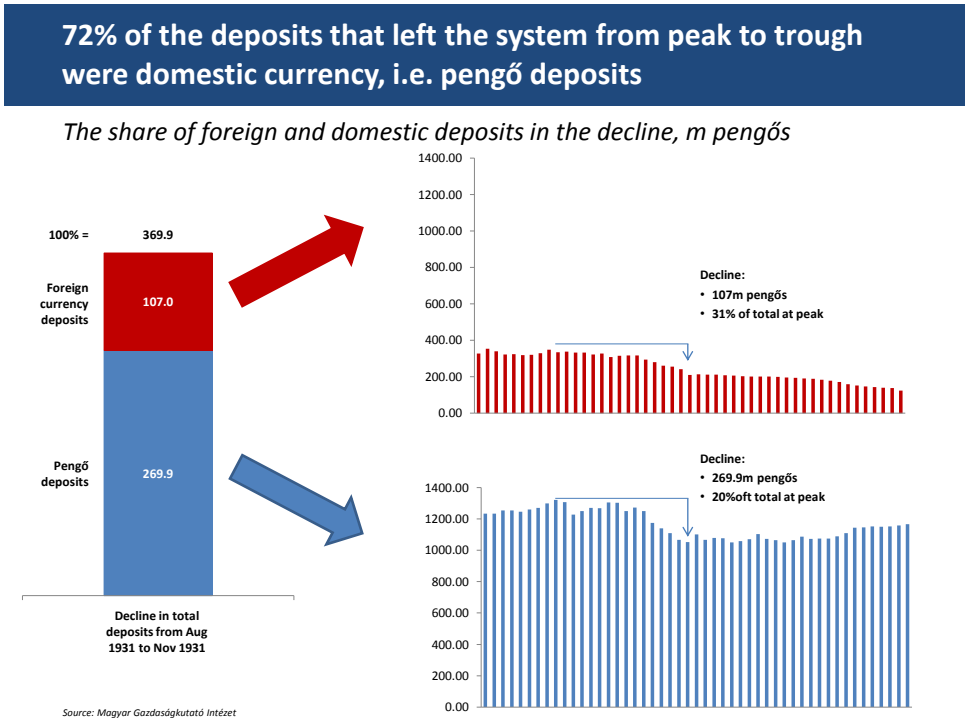

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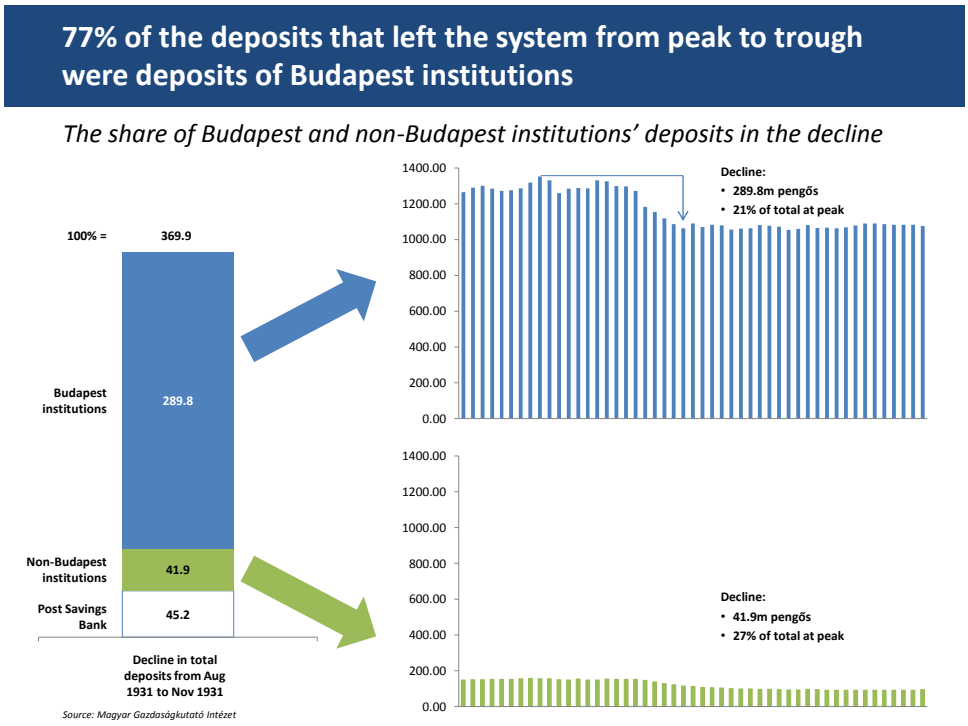
**Figure 5 Deposit decline by type of financial institution**




The picture that emerges after the review of the above evidence and the events-based analysis is that the banking system had been quite vulnerable starting from 1928. Insolvencies indicate that the health of banks' assets was declining from 1928 as hence, non-performing loans were on the rise. Depositors nevertheless started becoming anxious only towards the last quarter of 1930. Subsequently, depositors started withdrawing from the banking system in increasing volumes when the general mood further deteriorated in June 1931. This implies that financial institutions had already been weak from 1928 but were kept alive by depositors' confidence and eventually collapsed when this confidence was shattered.

## WHAT DOES THE CURRENCY CRISIS INDICATOR TELL ABOUT HUNGARY IN 1931?

Figure 6 depicts the results of the EMP index for the period of 1927-33. I am presenting two versions of the index, each relying on two different types of interest rate, the rate of the central bank and the commercial paper rate at primary Budapest institutions. Since for the latter I only have data from 1929, I have been using the former rate as reference. What is reassuring is that for the period covered by both interest rates, the trends are very similar. Based on the EMP index, what we are seeing is that Hungary experienced a currency crisis already in 1928. In fact, based on the index, this early crisis was more severe than the one in 1931.

Figure 7 digs deeper into analyzing the behavior of the EMP index. From the second quarter of 1928 the volume of bills rediscounted by the central bank was on the increase. The total rediscount reached its peak at the end of October 31, 1928, and this is when the EMP index swings to the largest amplitude. In the meantime, the gold cover plunged from 46.9% at the end of June to 40.1% at the end of October. Afterwards, following a temporary respite in January and February, the volume of rediscount again climbed back to high levels and the gold cover dropped even further, to 38% in June 1929. At this point, in May 1929 the Governor of the Hungarian National Bank paid a visit to the Governor of the Bank of England to resolve the crisis. After this meeting, the Hungarian central bank received a loan facility from the Bank of

England in the amount of GBP 500,000.[35] The larger, USD 20m loan needed a bit more time to seal and was eventually agreed upon in August 1929 and was provided by a group of central banks.[36] These steps were sufficient to stabilize the currency and push the gold cover back to 47% by June 1929.

**Figure 6 The EMP index**

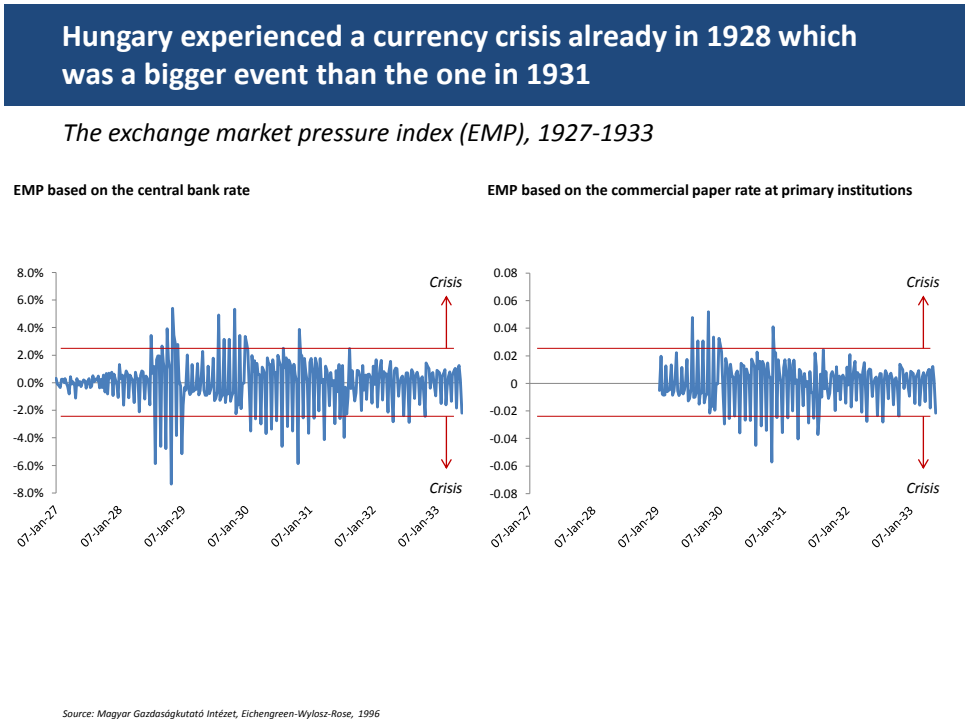
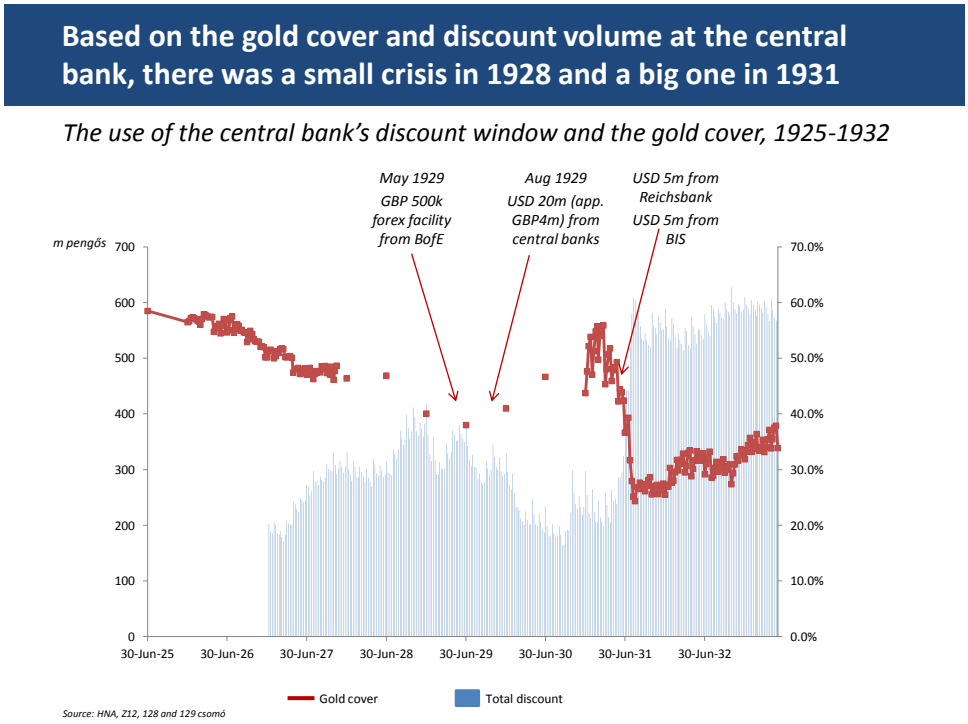



**Figure 7 Rediscount at the Hungarian National Bank and the gold cover**




[35] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, May 22, 1929
[36] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, Aug 30, 1929

After this 1928 currency crisis, the exchange rate (as proxied by the gold cover) remained relatively stable through 1929 and 1930. At the end of 1930 there was some increase in the volume of the rediscount which pushed the gold cover to 44% but by the end of the first quarter of 1931, it climbed back to over 55%. Then in mid-June the gold cover was again in the range just above 40%. Governor Popovics again managed to bring in additional foreign exchange loans from abroad which could serve as support for the currency. USD 5m arrived from the Reichsbank and USD 5m from the Bank for International Settlements.[37] Nevertheless, the pressure of the demand for rediscount on the central bank by this point was so high that these loans proved to be insufficient. By the end of August, the gold cover plunged to just above its legal minimum, 24%.

Based on the above evidence on the currency, two conclusions emerge. One is that Hungary experienced a currency crisis in 1928. This crisis episode, however, was successfully averted with the help of emergency loans from abroad and the gold cover was pushed back to previous levels. The impact of this early crisis was that the central bank was acutely cognizant of the vulnerability of the currency and was committed to buttressing the gold cover through early actions. Because of this, and this is the other observation, the currency actually went into the 1931 crisis being heavily bolstered by foreign support and the gold cover hovering around 50%.

## INTERPRETATION

How should the above information on banking and currency problems be interpreted? The crisis indicators presented in the foregoing suggest that we have to go back to 1928 to understand the origins of 1931. In 1928 Hungary experienced a pre-crisis episode, i.e. an early crisis preceding the one in 1931. This pre-crisis episode was an early currency crisis that also affected the banking system and these pre-crisis banking and currency events had significant consequences on how the story in 1931 enfolded.

### *PRE-CRISIS BANKING AND CURRENCY EVENTS IN 1928*

Figure 8 shows Hungary's domestic national income between 1924/25 and 1933/34.[38] Based on the chart, the country's income was increasing until 1928/29 and was sharply declining afterwards, reaching 1924/25 levels in 1931/32. The decline in income from 1928/29 to 1933/34 was 35%. The chart also shows that Hungary's economy was heavily dependent on agriculture with 38% of the national income originating from this sector in 1928/29. The recession which started in 1928/29 can be primarily attributed to the agricultural sector with 61% of the fall in income by 1933/34 coming from this part of the economy.

Figure 8 suggests that an agricultural crisis hit the country in 1928/29 from which it could not recover, at least not until 1933. Figure 9 shows the change in the volume and unit price of Hungary's most important export goods between 1925 and 1931. These goods represent 60% to 71% of the country' total exports in value. The charts show that in 1927 and 1928, the prices and volumes for all goods presented either declined or stagnated. Figure 10 shows that the total export volume was 735m pengős in 1926 and fell to 666m in 1927 and in 1928 it stagnated.[39]

[37] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, June 24, 1931
[38] I am not entirely convinced that the absolute values of gross domestic income figures are fully reliable. I have compared the Eckstein, 1936 dataset, which is depicted on Figure 8, with another gross domestic income dataset from Matolcsy and Varga (Matolcsy-Varga, 1938) and the magnitudes substantially differ. Nevetheless, the trends of the two datasets are the same. Therefore, in my analysis, I am not using the absolute figures, I am only analyzing the trends.
[39] Statisztikai Szemle (English: Statistical Review), monthly statistical publication, published by the Hungarian Central Statistical Office

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**Figure 8 Hungary's domestic national income**

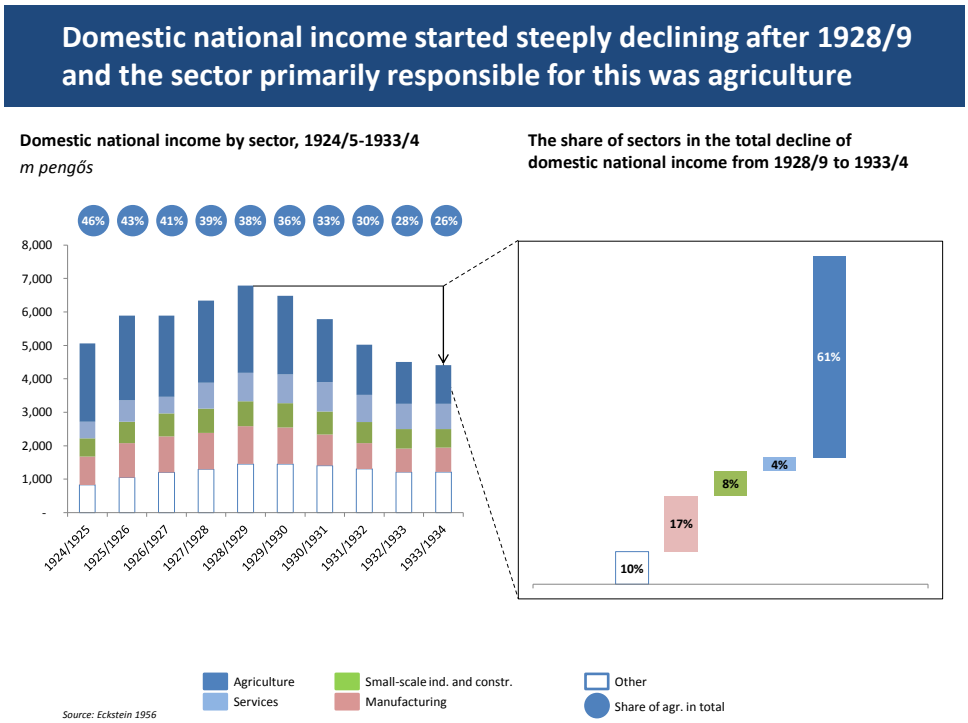


**Figure 9 Change in terms of trade of main export goods**

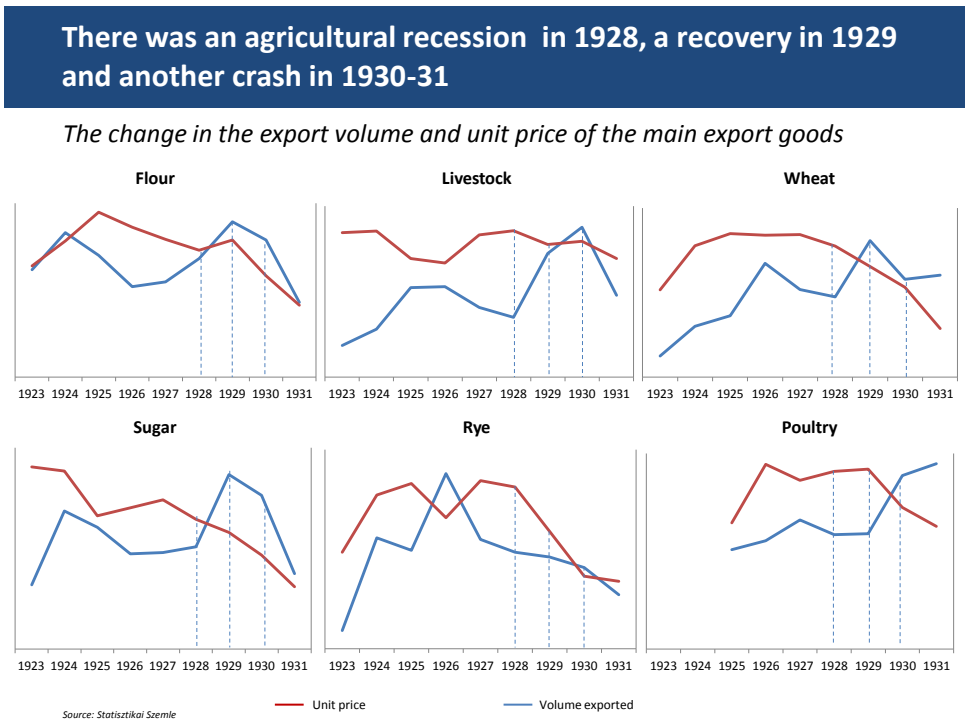

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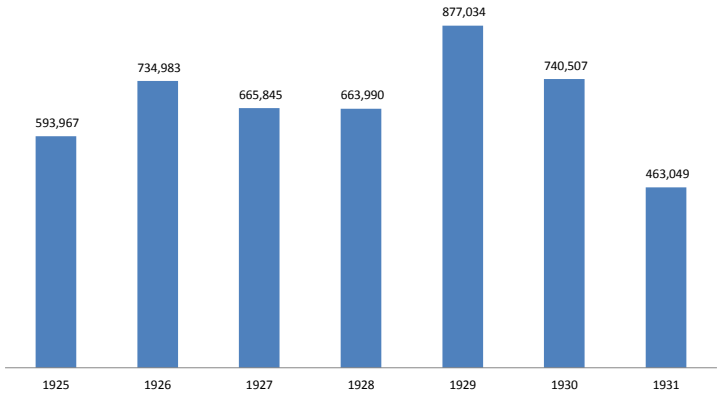
**Figure 10 Export revenues**

**Total export revenues declined in 1927 and stagnated in 1928. 1929 was a booming year but then 1930 and 1931 brought a collapse**

*Total export revenues, 1925-1931, th pengős*

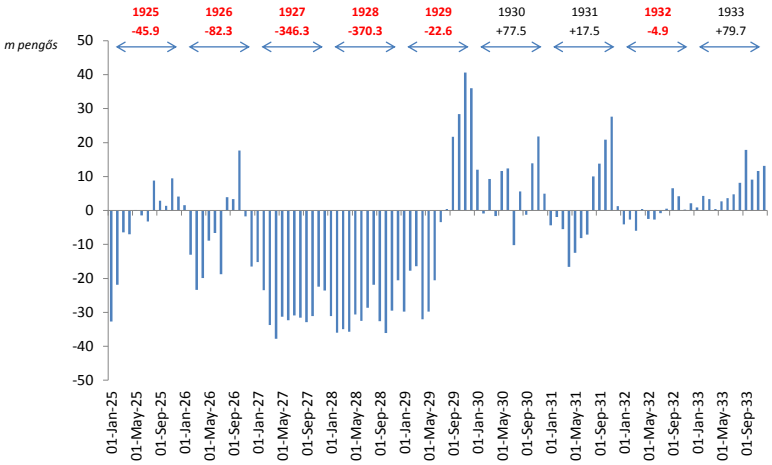



Source: Statisztikai Szemle

**Figure 11 Trade account**

**The trade account was in high deficit until mid-1929 and recovery lasted only for a few months**

*Hungary's trade account, 1925-33, m pengős*




Source: Statisztikai Havi Közlemények

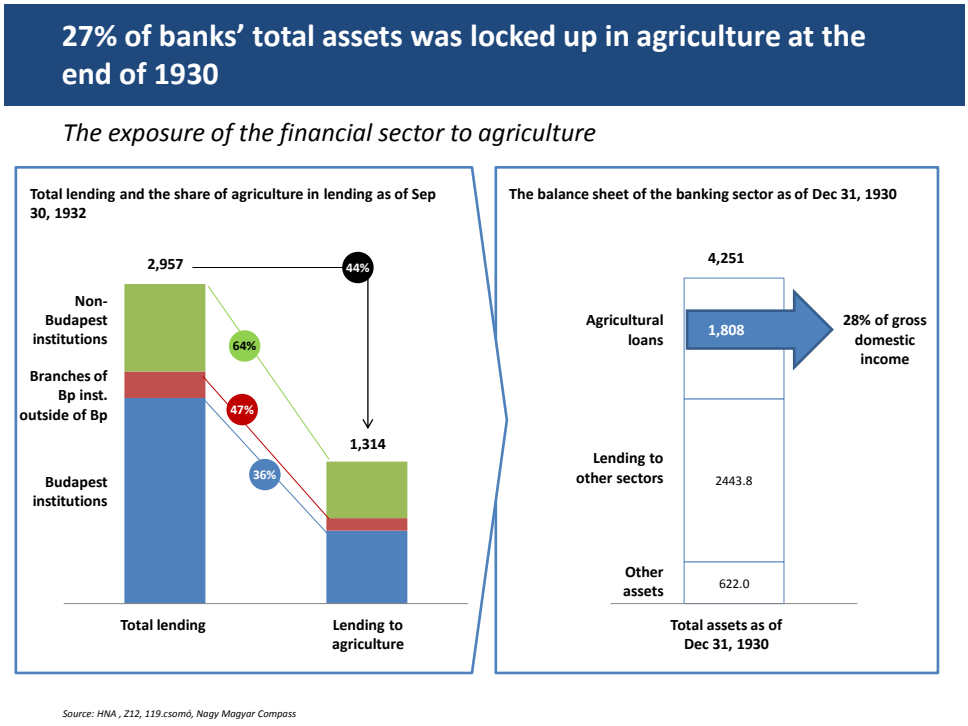
The decline in exports contributed to the country's continuous deficits in its trade account. Figure 11 shows that throughout 1927 and 1928, Hungary was importing more than it was exporting. The total deficit of the trade account was the 346.3m pengős in 1927 and 370.3m pengős in 1928. The trade account in deficit meant that the inflow of foreign exchange from exports was substantially lower than the outflow, i.e. a foreign currency deficit of over 700m pengős for 1927-28 somehow had to be financed. Considering that during the period the

reserves of the central bank were in the magnitude of 300m pengős, this was a substantial amount of foreign exchange to obtain. Therefore, the foreign currency deficit which was accumulating from 1927 put an increasing pressure on the central bank and eventually induced a currency crisis.

The banking system also could not escape the effects of the agricultural crisis. Although I do not yet have sufficient information on this matter, it is not outlandish to presume that when export revenues declined, companies involved in agriculture and trade experienced liquidity problems and very likely defaulted on their loans. Insolvencies data on Figure 3 suggest that loan defaults had been increasing from early 1928.

Since banks' exposure to agriculture was high, defaults must have been a great shock to their liquidity. Figure 12 shows banks' exposure to agriculture as of Sep 31, 1932 and Dec 31, 1930. Based on this, even after the crisis of 1931, in late 1932, 44% of total lending was to agriculture and at the end of 1930 1,808m pengős of banks' total assets of 4,251m pengős constituted lending to agriculture. My assumption is that going back to 1928, financial institutions were exposed to the crisis-ridden agriculture at least to the same extent, if note more.[40]

**Figure 12 The exposure of the financial system to agriculture**

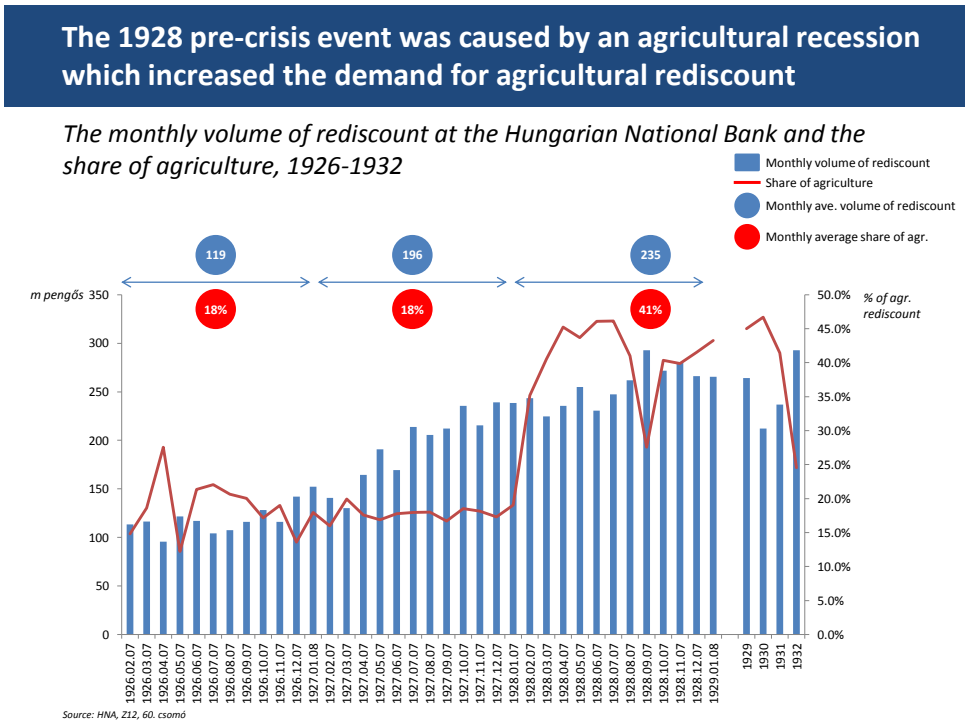



Therefore, to improve their liquidity in the face of defaults, banks turned to the central bank and requested the rediscount of their bills. Figure 13 shows the monthly volume of rediscount by the Hungarian National Bank as well as the share of agriculture in rediscounted bills. The chart demonstrates that in early 1928 the share of agricultural bills within the total soared from 18% per month to 41%. This was also a period of a high profile bankruptcy in the banking sector:

[40] I am still working on clarifying the financial system's pre-1930 exposure to agriculture. Nevertheless, the assumption that banks were exposed to the agriculture to the same extent in 1928 as they were in 1932 is quite conservative considering that after the insolvencies and the crisis financial institutions were likely seeking to reduce this exposure.

Földhitelbank, a member of the group of large Budapest banks and a large lender against agricultural land, announced its financial distress in mid-1929.[41]

**Figure 13 Total and agricultural rediscount at the Hungarian National Bank during the 1928 crisis**




The demand for foreign exchange to finance the deficit of the trade account on the one hand, and the quite sudden increase in the demand for agricultural rediscount by banks on the other hand, were the two sources of substantial pressure on the central bank in 1928. As Figure 7 has already shown, this was the period when the gold cover started to fall and as these trends would not subside, within a year Governor Popovics would be knocking on the door of the Bank of England.

The agricultural crisis of 1927-28 induced pre-crisis currency and banking events in 1928. On the one hand, the decline of foreign exchange inflow put a pressure on the currency and on the other hand, the deteriorating performance of agricultural loans increased banks' demand for the refinancing of agricultural bills at the central bank. These two developments became interwoven at the central bank, placed a great stress on the gold cover and culminated in a twin pre-crisis episode.

Nevetheless, these pre-crisis events did not eventually wind up as a major crisis. Hungary averted a big crisis in 1928 for three reasons.

First, the Hungarian National Bank received a foreign exchange facility from the Bank of England and then a loan from a group of European central banks and the US Federal Reserve. The total amount of this foreign exchange injection was app 130m pengős which was substantial for a central bank with reserves of app. 300m pengős. The inflow of foreign exchange from these sources bolstered the currency and pushed the gold cover to and over the mid-40% range again.

[41] Nagy Magyar Compass and the Minutes of the Board Meetings of the Central Commission for Financial Institutions

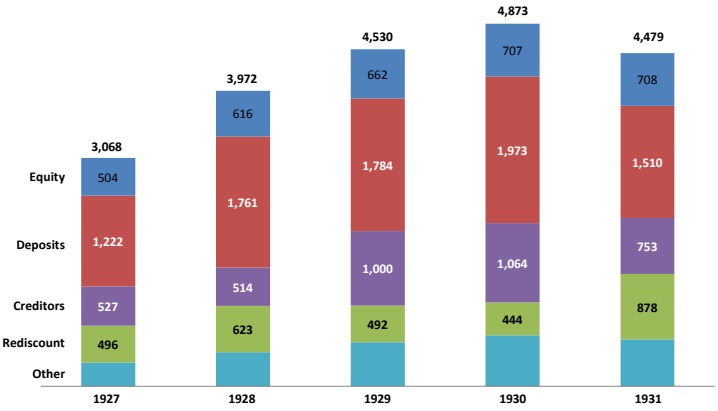
The positive turn of the trade account also provided support for the currency in 1929. As Figure 11 shows, the trade account experienced surpluses in the second half of 1929, unseen since the stabilization of the country's finances in 1925. This change in direction may be attributable to a temporary improvement in the export of agricultural goods. Going back to Figure 9, the charts show that apart from rye, for all other export goods either volumes or unit prices or both were on the increase in 1929. As Figure 10 shows, the total value of exports climbed up from 664m pengős in 1928 to 877m pengős in 1929.[42] This translated into an increasing inflow of foreign exchange which relieved the pressure on the currency.

Finally, the third factor that helped avert the crisis in 1928 was related to the financial system, in particular to banks' financing: their balance sheets were strengthened by the inflow of domestic capital. Figure 14 reveals that the total assets of the financial system increased by app. 25% from 1927 to 1928, i.e. by close to 900m pengős. Deposits accounted for the majority, approximately 540m pengős of this increase. I believe that the reason behind this significant deposit inflow was that the country moved to the new currency, pengő from January 1, 1927 and as the public gradually regained its confidence in the new currency, they replaced their capital on bank accounts. Because of this substantial capital inflow from domestic sources, financial institutions placed a relatively low and decreasing pressure on the central bank for refinancing and this greatly contributed to the fact that 1928 did not experience a big crisis.

**Figure 14 The equity and liability side of banks' balance sheet**

**Banks were saved by the deposit boom in 1928 and they increased their exposure to hot money in 1929**

*The equity and liability side of the balance sheet of Hungarian joint-stock banks, 1927-31, m pengős*




Source: Nagy Magyar Compass, 1925-26 – 1934-35

## *THE REAL CRISIS IN 1931*

The 1928 pre-crisis episode did not pass without consequences. One was that the experience made the central bank extremely cautious and protective of the parity. This had the positive result that the strength of the currency was maintained at a high level, with the gold cover around 50% going into the 1931 crisis. On the other hand, it also had the negative outcome that the central bank became ever more restrictive when it came to rediscounting bills for the

[42] Statisztikai Szemle (English: Statistical Review), monthly statistical publication, published by the Hungarian Central Statistical Office

banking sector. Another consequence of 1928 was that as a result of central bank stringency and due to the decreasing inflow of deposits, in 1929 the financial sector was thrown into the hands of "hot money", that is, short-term foreign creditors who could withdraw their capital with almost immediate effect.

What happened in 1931 was not different from the events of 1928: the country again experienced an agricultural crash. Figure 9 shows that from 1930 through 1931 all of the country's major export goods underwent either a volume or a unit price decline, or both. Figure 10 underscores this by demonstrating that the total export value declined from the highest point of 877m pengős in 1929 to 740m pengős in 1930 and then nosedived to 463m pengős in 1931. The 1931 export value was actually below the 1925 figure. The trade account shifted from high positives in the second half of 1929 to low values or to a deficit in 1930 and then to continuous deficit in the first two quarters of 1931. (Figure 11)

These changes similarly impacted the currency as in the 1928 episode: the inflow of foreign exchange from exports declined. However, there was a significant difference between 1928 and 1930: in 1928 foreign financing was unavailable due to global conditions. Towards the end of April 1928, the US Federal Reserve had increased its interest rate. This resulted in the departure of US capital from Hungary (and from the Continent, in general).[43] The situation of the currency was therefore, more critical in 1928 because neither export revenues, nor foreign capital could increase the central bank's foreign exchange reserves. Hence, in early 1929 the Hungarian National Bank had to reach out for an emergency foreign loan. By 1930 the situation was different: as the Bank of England, the Banque de France and the Federal Reserve together decreased their rates, foreign financing (primarily of short-term nature) was again abundant in the economy and financial institutions were heavily relying on this source.[44] Therefore, due to the deterioration of the trade account in 1930, the gold cover of the central bank only suffered a minor drop from 46.7% on June 30, 1930 to 43.8% on December 31, 1930 and by the end of March 1931 it was already above 55%.

Banks' situation, however, was not so rosy: they were struggling with non-performing loans. Figure 3 shows that the first peak in insolvencies came in late 1929 and 1930 experienced only a temporary relief mid-year before corporate failures were on the rise again from the last quarter of 1930. In addition, the deposit inflow that saved the financial system in 1928 was not repeated. Deposits stagnated in 1929 and then there was an increase of some 200m pengős which was less than 40% of the rise experienced in 1928. (Figure 14) Further, the central bank became increasingly inflexible in its rediscount policies. Already during the 1928 crisis, there were requests from the financial sector that the central bank widen the discount window. However, the management of the bank resisted these entreaties.[45] After the 1928 crisis, in which banks were saved primarily by the unprecedented deposit-inflow and to a much lesser extent by central bank resources, in mid-1929 the central bank restricted its rediscount policy. This was in response to the fact that financial institutions relied on the central bank during 1928 more than during previous years and the rediscounted bills on their aggregate balance sheet increased from 496m pengős to 623m pengős. (Figure 14) The central bank issued a warning to financial institutions that they should refrain from using the discount window and they should more diligently evaluate the bills they accept. In addition, the national bank also informed financial institutions that bills with certain types of collateral would not be accepted for rediscount.[46] Even though some of the board members of the Hungarian National Bank's board raised concerns that perhaps the restriction of the central bank's discount window was a

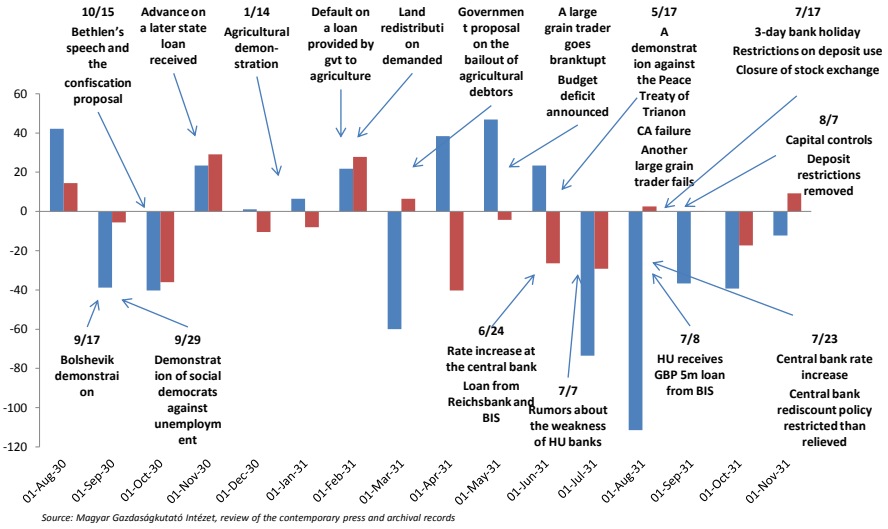
[43] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, April 25, 1928 and June 21, 1929
[44] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, May 28, 1930
[45] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, Nov 28, 1928
[46] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank, June 26, 1929

burden on banks, the management of the bank was unmoved. Therefore, since banks could not count on the central bank and in addition, deposits were only slowly rising, from 1929 they stuffed up their balance sheets with short-term foreign loans. Figure 14 shows that the "creditors" item which constituted predominantly short-term foreign credits, increased by close to 500m pengős from 1928 to 1929. This is particularly interesting since the shift to foreign resources happened during a period when short-term foreign financing was relatively scarce in the country due to the global decline in liquidity. This reinforces the view that the financial sector was in desperate need for liquidity in the face of non-performing loans and as a result of the central bank's reluctance to provide financing.

**Figure 15 The change in deposits and the chronology of events**

**Deposit withdrawals started in Q4 1930 and intensified and became continues from July 1931**

*The monthly change in deposits and the chronology of events from Aug 1930 until Nov 1931, m pengős*




*Source: Magyar Gazdaságkutató Intézet, review of the contemporary press and archival records*

Therefore, the banking system was even more vulnerable in 1930 than in 1928: the rise in insolvencies increased its non-performing assets, deposits were not flowing in as much as before, the central bank became more restrictive than it was in 1928 and banks' exposure to short-term foreign loans became higher. The only outstanding question was which event would expose the system's over-reliance on the crisis-ridden agriculture and its exposure to short-term foreign financing. Figure 15 shows the monthly change in domestic and foreign currency deposits between August 1930 and November 1931 along with a timeline of events. My view is that the Bethlen speech was the trigger and the confiscation rumor started off the sequence of events. A Member of Parliament also demanded that interest rates be fully regulated and maximized.[47] There were calls for nationalizing financial institutions.[48] In the meantime, the government was forced to increase taxes to stabilize the budget and leveraged on the public anger against banks by introducing a poverty tax as well, payable by financial institutions and used for the payment of unemployment benefits.[49] Therefore, this seems to be the point when it became clear to the larger public that the country's financial situation was not sustainable and there was no prospect for short-term improvement. In January 1931, there was a demonstration of 200 agricultural producers who went to Budapest, demanded their loans to be settled and

[47] Magyar Pénzügy, Oct 15, 1930
[48] Magyar Pénzügy, Oct 29, 1930
[49] Magyar Pénzügy, Jan 28, 1931

placed the blame on financial institutions for their current situation.[50] In response, the government started working on a program for the settlement of agricultural loans.[51] After the program was announced, agricultural producers stopped servicing their debt which further aggravated banks' liquidity.[52] Then in May, a few days after the Credit-Antalt collapse, another demonstration was organized by revisionists, protesting against the Peace Treaty of Trianon. Afterwards, in late May there was a League of Nations conference in Budapest which placed the issue of disarmament on its agenda and Hungary expressed strong opposition against the matter. These last two events most likely did not alleviate the anxiety foreign investors felt towards the country. After this, the outflow of deposits became more substantial and continuous.

Based on the above, it appears that Hungary suffered from a twin crisis in 1931. The trigger of the crisis was the banking sector which, through its increasing demand for rediscount at the central bank, spread the crisis further on to the currency. The 1928 pre-crisis banking and currency events which originated from an agricultural recession and a subsequent decline in export revenues, made the central bank ever more protective of the parity and restrictive in its rediscount policy. This was a thoughtful policy with regards to the currency and led the exchange rate into the crisis with a gold cover over 55% at the end of March 1931. On the other hand, it had a detrimental effect on banks because it threw them into the hands of short-term foreign financiers from 1929. Since financial institutions were heavily exposed to agriculture, when another crash occurred in that sector from 1930, they could not weather the storm. Their loans became non-performing and they did not have domestic depositors' confidence or the central bank to alleviate their liquidity position. In addition, their previously acquired exposure to foreign funding was damaging: they lost 31% of their foreign deposit holders and almost 100% of their short-term foreign creditors by the end of 1931.[53]

Nevertheless, what started in the banking sector in the last quarter of 1930 did not leave the currency unaffected. The gold cover was 55.9% on Mar 23, 51.8% on April 23 and still just below 50% on May 23. A decline of app. 10%points came in the next month which brought down the gold cover to the range of 40% and on July 15 it was at 39.4%. The big decline came after this and within 2 weeks the rate was at 28% and reached its legal minimum, 24% on Aug 15. By this date, capital controls had already been in effect for seven days.

# SECTION III - DISCUSSION OF NEXT STEPS

The foregoing analysis sought to demonstrate that the Hungarian crisis of 1931 is more describable through the third-generation model of financial crises than through first- or second generation models. The reason is that, in my view, the Hungarian crisis was not an entirely monetary event which resulted from policy failure, in particular the high level of indebtedness and the country's exposure to foreign financing. Based on the evidence presented in the foregoing, the crisis had its origins in the real economy, agriculture and the vulnerability of the banking sector was critical to the outbreak of the crisis. In 1931 Hungary experienced a twin crisis which originated in the financial system that was highly exposed to the distressed agricultural sector. The banking panic then affected the currency and culminated in a Kaminsky-Reinhart-type twin crisis.

[50] Magyar Pénzügy, Jan 14, 1931
[51] Magyar Pénzügy, Mar 1, 1931
[52] Magyar Pénzügy, Mar 27, 1931
[53] Statisztikai Szemle

Needless to say, the findings of this paper are preliminary and there are still a number of areas where my arguments need clarification. I am planning to continue the work on this paper in the following ways. First of all, as I pointed out at certain parts in the paper, on a few matters I do not yet have sufficient data or an adequately clear understanding. I want to more clearly understand the financial sector's exposure to agriculture to clarify the extent to which banks' lending was tied up in agricultural loans. Afterwards, I also want to delve further into analyzing the extent to which the agricultural decline was the reason behind the increasing number of insolvencies. Putting these two together would help me understand the extent to which the agricultural decline contributed to non-performing loans on banks' balance sheets. I am currently working on a database of individual banks' balance sheets and profit and loss statements for the period of 1925-1933. I hope I will be able to use this database to find out more about the impact of the agricultural decline on banks' financial health. I also plan to discern more clearly the role of the agricultural recession in bringing about the 1928 pre-crisis currency event. Second, (and this might in itself be a separate paper) I also want to further examine the relationship between the Hungarian banking and currency crises and test my current argument through different methods. What I have in mind is the methodology applied by Schnabel or Adalet[54] who use regression analysis to establish which factor was the culprit behind the twin event: the banking system or the currency.

I am also inclined to go a bit further in analyzing the current argument. What I find intriguing about the above story of Hungarian events is the question of why banks were so heavily exposed to agriculture. Was this their conscious decision because they believed in the sector and thought they would make money out of lending to it? Or was it a response to some sort of political pressure? My hypothesis is that the second option is likely. One source which suggests this is the minutes of the board meetings of the Hungarian National Bank. The sentiment of the central bank was that financial institutions should reduce their interest rates and provide cheap money to agriculture to ensure that producers' costs were low. To that effect, the bank established an "interest rate police" from its board members whose responsibility was to ensure that financial institutions were lending at a "reasonable" rate.[55] In addition, the central bank also used its branches all over the country to place pressure on financial institutions: central bank branches had the option to refuse to rediscount the bills of those financial institutions which, according to the central bank, did not follow an acceptable interest rate policy.[56] The board minutes also reveal that the Ministry of Finance actively organized financial institutions to seek foreign financing for agriculture. Consequently, a number of times during the course of the second half of the 1920s, the largest financial institutions came together, established an investment corporation and tried to place their debentures in foreign markets. The proceeds of these securities were then lent to agriculture. The Ministry of Finance's intervention into these transactions even went as far as to determining the interest rate margin and the commission that financial institutions could earn on these investments.[57] In other cases, the government provided direct subsidies to agriculture.[58] Therefore, I am interested in further pursuing the hypothesis that perhaps banks' high exposure to agriculture was the result of political pressure. This investigation would tie into my overall hypothesis that the financial systems of Austria, German and Hungary, and especially universal banks were used by policy-makers in extending their political agenda.

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[54] Isabel Schnabel, 'The Role of Liquidity and Implicit Guarantees in the German Twin Crisis of 1931', *Journal of International Money and Finance,* 28/1 (2009), 1-25, Muge Adalet, 'Fundamentals, Capital Flows and Capital Flight: The German Banking Crisis of 1931', (University of California, Berkeley, 2003).
[55] HNA, Z12, 1. doboz - Minutes of the Board of Governors of the Hungarian National Bank - April 29, 1925
[56] HNA, Z12, 1. doboz - Minutes of the Board of Governors of the Hungarian National Bank - May 27, 1925
[57] HNA, Z12, 1. doboz - Minutes of the Board of Governors of the Hungarian National Bank - Mar 29, 1926; Jan 27, 1927; Nov 30, 1927;
HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank - Mar 22, 1929; Jan 8, 1930; Jan 29, 1930; Apr 16, 1930; May 21, 1930;
[58] HNA, Z12, 2. doboz - Minutes of the Board of Governors of the Hungarian National Bank - May 28, 1930

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# SOURCES OF THE FIGURES IN THE PAPER

| Figure | Data | Source |
|---|---|---|
| Figure 1 | Total deposits<br>includes demand and term deposits<br>includes foreign and domestic currency deposits<br>sample: the 12/13 larges Budapest banks, the 34/35 largest non-Budapest banks and the Postal Savings bank<br>sample covers app. 85% of total deposits in the country | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 2 | Total deposits<br>includes demand and term deposits<br>sample: the 12/13 larges Budapest banks, the 34/35 largest non-Budapest banks and the Postal Savings bank<br>sample covers app. 85% of total deposits in the country | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 3 | Number of insolvencies | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 4 | Total deposits<br>includes demand and term deposits<br>sample: the 12/13 larges Budapest banks, the 34/35 largest non-Budapest banks and the Postal Savings bank<br>sample covers app. 85% of total deposits in the country | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 5 | Total deposits<br>includes demand and term deposits<br>includes foreign and domestic currency deposits<br>sample: the 12/13 larges Budapest banks, the 34/35 largest non-Budapest banks and the Postal Savings bank<br>sample covers app. 85% of total deposits in the country | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |

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| Figure | Data | Source |
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| Figure 6 | Gold cover as a proxy for the exchange rate | |
| | Gold cover based on the statutes of the Hungarian National Bank | Hungarian National Archive, Z12, 129. csomó (File Z12, binder 129) |
| | Calculated gold cover as a ratio of species reserves and banknotes in circulation | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| | Base rate of the Hungarian National Bank | Hungarian National Archive, Z12, 1-2. doboz (File Z12, boxes 1-2) |
| | Commercial paper rate at primary institutions | |
| | Calculated as an average of the low and high rates | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| | Central bank reserves | Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 7 | Bills rediscounted by the Hungarian National Bank | Hungarian National Archive, Z12, 128. csomó (File Z12, binder 128) |
| | Gold cover based on the statutes of the Hungarian National Bank | Hungarian National Archive, Z12, 129. csomó (File Z12, binder 129) |
| Figure 8 | Domestic national income by sector | Eckstein, 1956 |
| Figure 9 | Export volume of various goods | Statisztikai Szemle (Statistical Review) |
| | Unit price of various export goods | Statisztikai Szemle (Statistical Review) |
| Figure 10 | Total export revenues | Statisztikai Szemle (Statistical Review) |
| Figure 11 | Trade account | Statisztikai Havi Közlemények (Monthly Statistical Report) |
| Figure 12 | Total lending | Nagy Magyar Compass (Big Hungarian Compass) |
| | sample: all joint-stock financial institutions | |
| | Lending to agriculture as of Sep 30, 1932 | Hungarian National Archive, Z12, 119. csomó (File Z12, binder 119) |
| | sample: all joint-stock financial institutions | |
| Figure 13 | Bills rediscounted by the Hungarian National Bank | Hungarian National Archive, Z12, 60. csomó (File Z12, binder 60) |
| | Agricultural bills rediscounted by the Hungarian National Bank | Hungarian National Archive, Z12, 60. csomó (File Z12, binder 60) |

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| Figure | Data | Source |
|---|---|---|
| Figure 14 | Total equity and liabilities of financial institutions<br>sample: all joint-stock financial institutions | Nagy Magyar Compass (Big Hungarian Compass)<br><br>Magyar Gazdaságkutató Intézet (Institute for Hungarian Economic Research) |
| Figure 15 | Total deposits<br>includes demand and term deposits<br>sample: the 12/13 larges Budapest banks, the 34/35 largest non-Budapest banks and the Postal Savings bank<br>sample covers app. 85% of total deposits in the country | Hungarian National Archive, Z12, 1-2. doboz (File Z12, boxes 1-2) |
| | Event-based review | Hungarian National Archive, Z91, 2-3. doboz (File Z91, boxes 2-3)<br>A pénzvilág (Financial world), various publications from 1930-31<br>Magyar Pénzügy (Hungarian Finances), various publications from 1930-31 |