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No. 5397

**THE LOGIC OF COMPROMISE:
MONETARY BARGAINING IN
AUSTRIA-HUNGARY 1867-1913**

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***INTERNATIONAL MACROECONOMICS
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Discussion Paper No. 5397
December 2005

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CEPR Discussion Paper No. 5397

December 2005

ABSTRACT

The Logic of Compromise: Monetary bargaining in Austria-Hungary 1867-1913*

This paper examines the historical record of the Austro-Hungarian monetary union, focusing on its bargaining dimension. As a result of the 1867 Compromise, Austria and Hungary shared a common currency, although they were fiscally sovereign and independent entities. By using repeated threats to quit, Hungary succeeded in obtaining more than proportional control and forcing the common central bank into a policy that was very favourable to it. Using insights from public economics, this paper explains the reasons for this outcome. Because Hungary would have been able to secure quite good conditions for itself had it broken apart, Austria had to provide its counterpart with incentives to stay on board. I conclude that the eventual split of Hungary after WWI was therefore not written on the wall in 1914, since the Austro-Hungarian monetary union was quite profitable to Hungarians.

JEL Classification: F31 and N32

Keywords: free riding, market integration, monetary union and secession

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*I am grateful to Jérôme Legrain for research assistance. Clemens Jobst provided expert advice and many additional insights. Thanks to John Komlos, Jacques Mélitz, Bernard Michel, Michael Pammer, and two anonymous referees for their comments and criticisms on earlier drafts. Responsibility for errors and misinterpretations remains entirely mine. Address for correspondence: Chaire Finances internationales, Sciences Po, 27 rue Saint Guillaume, 75007 Paris, France.

Submitted 21 November 2005

“This Austro-Hungarian political feeling was an entity so curiously constructed that it seems almost useless to try to explain it to someone who has not experienced it. It was not made of a Hungarian part and an Austrian part which would have, as one might have thought, completed each other, but indeed of a part and of a whole, that is, of one Hungarian feeling and of one Austro-Hungarian, the latter being at home in Austria, so that Austrian citizens had properly speaking no homeland. Austrians therefore only existed in Hungary, and even there, only as an object of aversion; at home they called themselves citizens-of-the-kingdoms-and-lands-of-the-Austro-Hungarian-monarchy-represented-at-the-Imperial-Council, which amounted to saying ‘one Austrian plus one Hungarian minus that very same Hungarian’; and they did so less out of enthusiasm than for the sake of an idea they disliked, since they could not stand the Hungarians more than the Hungarians could stand them, which further complicated the matter.”

Robert Musil, *Der Mann ohne Eigenschaften*, 1930

Except perhaps for Sissi, the Habsburg dual monarchy, over the course of its last half-century of existence, has never been too popular. Novelist Robert Musil’s famous mockeries on “Cacania” (as he nicknamed the defunct Empire) are still in our minds: but his jokes merely followed a venerable tradition, dating back to such writers as Elysée Reclus who had defined the monarchy as a “political chaos complicated with bureaucratic fancy”.¹ The Romantic nineteenth century had had sympathies with the nationalist uprisings that followed the French Revolution and its principle of self-determination. One must side with the French at Valmy, with the Italians at Magenta. Can one resist siding with Hungary, another victim of Austria? The Talmud says that even if it is the Just who does tyrannize the Unjust, God is with the Unjust. What else could we do?

For modern European economic historians, there are two reasons to take the standard interpretation of the dual monarchy with a grain of salt. The first has to do with being Europeans: one century of exacerbated nationalism has led us to take “nations” with less respect. We do find virtues in the creation of cosmopolitan institutions if they can be conducive of peace and prosperity: Cacania has merits. The second reason has to do with being economic historians. Cliometrics, with its arsenal of data, hypotheses and counterfactuals is especially well endowed to determine the economic logic that consciously (or, since Vienna is involved, unconsciously) presides over political arrangements.

This paper thus deals with the Austro-Hungarian “Compromise” of 1867 in the period before WWI.² The Compromise was a constitutional treaty that secured fiscal sovereignty for Hungary. It had been obtained from Austria by the Magyar elite in return from political

¹ . Reclus [1878], p. 131.

² . *Ausgleich* in German or *Kieghyezés* in Hungarian.

obedience at a time when the Habsburgs were at a disadvantage, being defeated by Prussia in Sadowa and losing Lombardy-Veneto to Italy. After its initial signature in 1867, the Austro-Hungarian compact would be renegotiated every 10 years: four drawn-out and quite painful ‘Compromise rounds’ prolonged its life until WWI gave a lethal blow.³ Because the Compromise was precisely meant to prevent secession, it has often been portrayed as the continuation of the Habsburg rule in a new guise, and as a result inherited much of the Habsburg’s unpopularity. Musil (1930) again summarized the majority view quite well when he pronounced the Compromise “more difficult to comprehend than the Mystery of the Holy Trinity”. This paper takes a different view. In line with the early opinion of the British newspaper *The Economist* defining the Compromise as “ the ultimate adjustment of all common interests between Austria and Hungary ” (January 17, 1903), it argues that it should be studied as an economic bargain.

The importance of *trade* within the Habsburg Empire has already attracted the attention of economic historians. Some years ago, John Komlos’ seminal study (Komlos 1983a) demonstrated that, contrary to the traditional prejudice, the Austro-Hungarian custom union provided huge benefits to Hungary: Magyars were hardly victims. They gained from access to a wide market for their agricultural products. Indeed, the measured effect of the Habsburg union on bilateral commerce was a three-fold increase (Flandreau and Maurel 2005). Moreover, substantial productivity gains were achieved by Hungary between 1890 and 1910 in the agricultural sector (Schulze 2003).

However, nobody has examined the *monetary* aspects of the Compromise so far, because nobody has looked at the Habsburg Empire as a monetary union. This is because of the deceptive nature of the Compromise: The Austro-Hungarian monetary union was not the result of a monetary marriage but the by-product of a fiscal divorce. Austria and Hungary became in 1867 two sovereign budgetary entities. In the process, they retained a common bank of issue and thus formed a *de facto* monetary union that would operate until its post-WWI collapse (Nemec [1924], Zeuceanu [1924], and Garber and Spencer [1994]).

One consequence of this set up was the development of a debate, not over union, but over the mirror image problem of secession. Of course, the reasons for not breaking free from a

³ . In 1877, 1887, 1897, and 1907. Negotiations usually started early and ended late.

monetary union cannot be very different from the reasons for joining it. This observation is in effect at the heart of the modern political economy of the size of nations (e.g. Alesina and Spolaore 1997). Consider a monetary union comprising two parts, a “large” (Austria) and a “small” (Hungary) country. The common central bank delivers a range of services that are valuable to both parts, but not equally. The exact mix of services produced depends on the division of power. If power is proportional to size, the small country has very little control over common decisions. It is bound by the discipline of the union without being able to influence decision-making in a way that would address its own specific interests. Cooperation (i.e. participation to the union) is sub-optimal and the small country prefers to quit. Sustained cooperation requires that the large country does accept a decision-making process in which the small country receives a greater voting share than size alone would predict.

Thus smaller “nations” influence disproportionately monetary unions. However, it is not clear why the large country should accept this dilution of power. The normal outcome should therefore be secession: i.e. a multiplication of political entities customized to meet the demands of heterogeneous groups of agents. Conditions to prevent this result include Olson and Zeckhauser’s free rider problem (the large agent cannot really avoid free-riding by smaller members and prefers to commit them by giving them a greater controlling share : Olson and Zeckhauser 1966) and Kindleberger’s benevolent “hegemon” (the large agent internalizes the costs of anarchy: Kindleberger 1973). More relevant to the case of monetary unions however, is the work of Casella [1992] who shows that if cooperation delivers a number of public goods that are useful to all parts, then the large country may nonetheless accept a reduction of its relative ability to set decisions, since the additional output may compensate the initial loss.

The current paper uses this class of insights to analyze of the economic logic of monetary bargaining in the Habsburg Empire, 1867-1913. The vantage point it takes is that of the small country – Hungary – showing how secessionists’ threats succeeded in increasing its controlling share over the common central bank. The paper proceeds as follows. Section I gives a narrative of Austro-Hungarian monetary negotiations between 1867 and 1899. It shows that Hungary consistently increased its formal control before reaching full parity with Austria. Section II focuses on the 1900s when secession was seriously considered before being somewhat mysteriously discarded. Section III disposes of the view that fear of adverse

consequences of secession on reputation is what deterred Hungary from breaking apart. Finally, section IV finds the explanation for the Hungarian turnabout in the policies of the Austro-Hungarian Bank, which began supporting Hungary over and beyond what statutes stipulated. The conclusion wraps up the argument and makes suggestions for future research.

Section I. Monetary union as deal making: 1867-1899

The 1867 “Compromise” delineated powers that were shared from those that weren’t. Austria and Hungary would share a common market and trade policy, monetary standard, legal system, army, diplomacy, foreign representatives, and the Emperor of Austria would also be King of Hungary. On the other hand, each part would have its own parliament, government, and budget.⁴ Gerschenkron (1962, 1977) has emphasized the role of government spending in Central European development policies in the 19th century (see also Wysocki [1975] and Brandt [1978]): In effect, a key concern of Hungarian elites when they requested fiscal sovereignty was be able to finance infrastructure spending, such as the building of railways.

Money had not been discussed in detail. The Compromise only provided that the inconvertible notes of the Austrian National Bank, a private institution under government charter, would continue to be legal tender with the joint guarantee of the two parts. Moreover, through a separate agreement between the two governments (not ratified by parliaments: Zückerkandl [1908]), Hungarians assumed the obligation not to allow any bank of issue to be created in their territory. This was acknowledging that the Austrian National Bank was the sole bank of issue of the whole monarchy.⁵ Hence while “monetary union” between Austria and Hungary was not an explicit part of the Compromise, it was an implication. The dual monarchy was a *de facto* monetary union.

However, in the nineteenth century, “banks of issue” were seen as important instruments for nation state building. They provided the national public good of a national market via homogenization of the currency and contribution to financial integration (Helleiner [1999] and

⁴ . The budgetary set up of the Habsburg monarchy can be called confederate. A common budget served to pay for the army and the foreign policy, but this “federal” level had no authority over taxation. Its resources were, apart from the custom duties, transfers from the two countries’ individual budgets. For details, see Flandreau [2003].

⁵ . Agreement of September 12, 1867: Zückerkandl [1908].

[2003]). Controlling credit was also seen as a policy instrument for redistribution across regions and sectors. Finally, it was felt that ability to rediscount “national” bills would encourage the “national” economy and the creation of ‘national banks’ was supported by economic elites.⁶

The Austrian National Bank was thus not long to seek formal recognition from the Hungarian Diet. Hungary had conditions: an autonomous *Direction* in Budapest (as opposed to the existing *Subsidiary*), with more resources. The bank refused (Kövér and Pogány [2002]). Hungary’s requests escalated as the 1873 crash of the Vienna and Berlin stock exchanges led to widespread calls for bank support to depressed areas (Bailey [1876]). The expiration of the privilege of the ÖNB in the end of 1876 was also in sight. It conveniently happened to coincide with the renegotiation of the Compromise. Monetary bargaining involved the Austrian government, the Hungarian governments and the shareholders of the Austrian National Bank. Experimenting with a technique that would be used repeatedly, the Magyars threatened to set up a National Bank of Hungary. On the other hand, shareholders were worried to grant control to a ‘foreign’ authority (shareholders were mostly citizens of Austria). The Austrian government was concerned among other things with preserving the political unity of the monarchy. In the end, on July 1, 1878, the Bank became the Austro-Hungarian Bank (*Österreichische-Ungarische Bank* in German - *Osztrak-Magyar Bank* in Hungarian).

By this act, the new bank (which inherited the balance sheet of its predecessor) became a “federal” institution. It had two main “Directions” (*Hauptanstalten*) in Vienna and Budapest respectively run by a “Managing Board” (*Direktorat*) and a central office in Vienna, headed by the General Council (*Generalrath*), the executive body of the bank in charge of setting the discount rate. The sophisticate design of the Bank’s organizational chart is a suggestion of the intricacy of the discussions involved (see Noël [1889], Conant [1895], Zuckerkandl [1908] for details). The Governor was to be appointed by the Emperor and King upon joint nomination of the Austrian and Hungarian finance ministers. He was to be seconded by two Vice-Governors, one Hungarian and one Austrian, appointed by their respective governments from

⁶ . Hungary was a case in point. During the 1848 uprising, the emergency Magyar government had given the exclusive right of issue to a *Hungarian Commercial Bank* in which Kossuth, hero of the Revolution, played a major role (see Lévy [1911a], p. 137 and [1911b])

a list submitted by the shareholders. There were also twelve Councillors: two were appointed by the government in Vienna, two by that in Budapest, and the rest by the assembly of shareholders. The Governor, the Vice-Governors and the Councillors, formed the General Council. The Managing Boards were presided by the Vice-Governors of the respective nationality. The two governments were entitled to a share of the profits.⁷ Finally, the new charter had a short duration of 10 years, against 25 years for earlier ones.⁸ This was obviously the Compromise's signature.

Austro-Hungarian arrangements were renewed without substantial change or resistance in 1887.⁹ However, during the 1890s, the decision to stabilize the paper florin onto a gold parity (called the crown and worth 0.5 florins at the current exchange rate) re-opened difficult issues. The reform envisioned the transfer of all monetary prerogatives from the fiscal authorities (national governments) to the Bank (Flandreau [2003]). Specifically, governments had to repurchase early issues of state notes and discontinue silver coinage for their own account. Since new issues of state notes had been ruled out in 1867 and silver coinage was marginal, the loss of monetary control was inexistent. But the repurchase of government paper was costly. The Austrian government used this as an excuse to claim some form of control, and it was supported by Hungary who was not so sure it should contribute to repurchase pre-Compromise paper issues. According to external observers “ the general opinion is that there ought to be substantial restrictions to the autonomy of the Bank ”.¹⁰ The Bank insisted that the credibility of the currency would gain from this so that no further compensation was needed.¹¹ It also wanted a longer duration of its charter to be protected from the political hazards of periodical compromise rounds.

Hungary floated its now routine secessionist threat. Premier Wekerle suggested creating two separate banks of issue.¹² The fall of the Hungarian cabinet removed part of the urgency,

⁷ . Austria was entitled to 70% and Hungary 30% of the part of dividends that was not distributed to shareholders.

⁸ . Such short charters were rare by European standards : See Flandreau et al. [1998].

⁹ . Law of May 21, 1887.

¹⁰ . Crédit lyonnais Archives, “ *Réforme de la Valuta* ”, Crédit lyonnais Archives, DEEF 73211.

¹¹ . This was the substance of the so-called Mecenseffy memorandum of 1894: Flandreau [2003].

¹² . “ *Aujourd’hui, la Banque appelée à proposer ses conditions les a faites tellement exorbitantes qu’on a pensé à créer à sa place deux Banques nouvelles: une Autrichienne et une Hongroise* ”. Crédit lyonnais Archives, DEEF 73211, “ *Réforme de la Valuta* ”. See also Conant [1895], p. 233 : “The tendency towards local institutions in Hungary has led to considerable discussion of the project of separate banks of issue [...] and this was one of the reasons why the project for the renewal of the charter proposed by the Imperial bank in the Spring 1894 was not accepted by the two governments ”.

facilitating monetary stabilization.¹³ Despite no agreement was reached, the Bank nonetheless began pegging the florin exchange rate within gold points, a scheme that would last until WWI (Flandreau and Komlos [2005]). But Hungarians insisted that they wanted full parity within the common bank, and made it an absolute condition for their continued cooperation. After two more years of muddling through they eventually got their way.¹⁴ The new Charter, granted by the law of September 21, 1899, was valid until 1910 (i.e. slightly beyond the date when the next Compromise was to be renegotiated, i.e. in 1907). It formally acknowledged that each nation retained the right to set up its own bank. Monetary sovereignty was thus a political prerogative, and the common central bank, an alienation of that right. Moreover, statutes resulted in establishing full parity. The influence of shareholders' was reduced to drawing up a list of eligible candidates, which Hungary and Austria formally designated. The autonomy of each regional direction was enhanced (Michel [1976], p. 20). It was further decided that the shareholders assembly would meet in either Vienna or Budapest depending on the majority's country of residence.¹⁵ Profits accruing to the two governments became a function of where bank income originated. Finally, the influence of the two national commissaries was increased beyond their former purely consultative vote.¹⁶ After 1899, they had a veto right, motivated by exceptional circumstances ("*raison d'état*").¹⁷

There was thus a definite trend in Hungary's formal influence within the common Bank. This trend was also reflected in substantive policies of the Bank, such as the coverage of the Magyar territory by subsidiaries. As Figure 1 shows that the Austro-Hungarian National Bank transformed itself from being a predominantly Austrian institution in 1867 into being a truly bi-national institution. There were only 5 Hungarian branches out of 23 in 1878 (21%), but 19 out of 50 in 1888 (38%), and 29 out of 69 in 1900 (42%). One sure criterion to assess

¹³ . According to Lyonnais' economists, "*depuis la chute de M. Vekerlé (sic), cette idée paraît abandonnée*" (Crédit lyonnais Archives, DEEF 73211).

¹⁴ . The account given by Pressburger [1966] is interesting. The Austrian government had presented the Bank with a choice of increased Austrian control or Hungarian parity. It apparently wanted to corner the Bank in order to secure increased control. The Bank opted for the latter despite a long tradition of Austrian support against Hungary. The Bank may have wanted to encourage rivalry between governments. It must have discounted the risk of collusion.

¹⁵ . In practice, the vast majority of shareholders were Austrians and until 1914 the Assembly always gathered in Vienna.

¹⁶ . Crédit lyonnais Archives, DEEF 40407, *Banque Austro-Hongroise*, 1918, p. 3.

¹⁷ . According to external observers, this had been introduced under Hungarian pressure to restrain Austria's influence: Crédit lyonnais Archives, DEEF 40407, *Banque Austro-Hongroise*, 1900, p. 23. Note that since veto did not encompass the setting of the discount rate, monetary policy was essentially free from government interference. Note that Hertz [1903] is less confident.

the achievements of Hungary is to compare its “share of the cake” with economic size: With about 40% of the dual monarchy’s population, Hungary controlled 50% of the decision making process. And with about 30% of the Habsburg GDP, it hosted 42% of the Bank’s branches. Therefore, Hungary had a more than proportional influence. Moreover, we saw that this had been secured by threatening to set up an own bank. In light of the theoretical elements discussed in the introduction, the implication must be that Hungarians would have been able to secure better terms for themselves had they actually quitted the union than the ones they would have faced if those favourable adjustments had not taken place. And of course, it must also be that both Austria and the Austro-Hungarian Bank found the deal palatable – the alternative being that they had no choice.

Figure 1: here

Section II. The Independent Hungarian Bank: Rise and Fall

On January 26, 1905, a coalition led by the Independence Party, or Party “of 1848”, defeated the incumbent Liberal Party. The Independence Party was headed by Ferencz Kossuth, son of the 1848 hero. Despite the Emperor and King’s animadversions, Kossuth was received in Vienna in late February. His party’s claims were a separate army, diplomacy, trade policy, and custom duties *inside* the union. They could not be readily implemented, because they did not represent the coalition’s consensus.¹⁸ However, former supporters of the Liberal Party, led by Wekerle, set up their own “Dissidents” group, and leant towards Kossuth. On April 8 1906, a Wekerle cabinet was created, in which Kossuth participated. At this point, monetary secession, the only kind of separation that was feasible without Vienna’s formal agreement, became the focus of nationalists.¹⁹

In the Spring of 1905, separatists began a campaign against the AHB, criticizing “overly restrictive” monetary policies, “unsuitable” to Transleithania.²⁰ Attacks on the monetary union were taken seriously: Special arrangements to decide of unit of accounts in the event of secession were considered. Austrian banks such as the *Boden Creditanstalt*, took steps to

¹⁸ . For a chronicle of the episode, see *The Economist*, February 11, p. 229, February 25, p. 316-317, 1905.

¹⁹ . External observers saw monetary secession as a consequence of the Kossuth program. Conant, for instance, describes it as “one of the projects which grew logically out of the movement which gained momentum at the beginning of the twentieth century for the restoration of Hungarian independence” Conant [1915], p. 249.

²⁰ . Similar attacks on “too high” interest rates had been repeatedly heard in the past, but this time they were crystallising. Michel [1976], p. 229-230.

make sure credits would always be paid back in Austrian money.²¹ The Compromise of 1907 did contain provisions for the liquidation of crown debts.²² The fate of the bank remained pending. On December 30, 1907, a worried General Assembly of shareholders requested from the Imperial and Royal governments a renewal of the charter before its scheduled expiration date of December 1910.²³

By that time, however, it had become clear that secession stirred much debate within Hungary. In March 1908, the Wekerle government set up a special parliamentary committee, the “Hollo Commission”,²⁴ to examine the technicalities of separation from Austria. A questionnaire was sent out to leading economists.²⁵ Hearings turned out to be a forum of dissenting opinions (Michel [1976]). Despite the exiguity of Hungary’s ruling classes two opposed views emerged.²⁶ On the one hand was Budapest, where bankers feared that monetary secession would make it difficult to tap the Vienna money market. The Hungarian land-owning gentry, who lived in Budapest and was Count Tisza’s Liberal Party’s base, also shared this position. It feared that dissolution of the monetary union would herald the collapse of the custom union. Austria might then increase tariffs on corn and force Hungarian producers to compete against Russia for their market. An Austrian observer argued: “One thing is certain: just as it is absolutely necessary to have a common currency and a common bank for a common trade area, it is impossible to keep together a common trade area without a common bank and a common currency. The leaders of the Independence Party seem to believe that it is politically easier to obtain a monetary separation than a division of the trade area, and consequently tenaciously pursue their goal of a separate bank, in the hope that the customs union will collapse by itself as a result.” (Federn [1910], p. 466-7).

On the other hand the pro-secession group comprised “provincial” interests. These included chiefly the Chambers of Commerce representing industrialists and regional bankers.

²¹ . Michel [1976], p. 230.

²² . The so-called ‘Benedikt clause’ (after Moritz Benedikt, famous owner of the Austrian Newspaper *Neue Freie Presse*) was negotiated between the two governments, but not presented to the Parliaments. It recognised the need, should monetary separation occur, to fix the value of the Austro-Hungarian exchange rate in order to protect outstanding contracts against the exchange risk, which may follow secession.

²³ . Crédit lyonnais Archives, DEEF 40407, *Banque Austro-Hongroise*, p. 6. The demand was officially transmitted to each government on December 30, 1908.

²⁴ . The choice of 21 members in the commission symbolically evoked the 1892 commissions of experts on the adoption of the gold standard in the dual monarchy see Conant [1915].

²⁵ . *L’Economiste Européen*, April 10, 1908, XXXIII, 473.

²⁶ . According to Tatu Vanhanen’s Polyarchy database, it below 7% of the population before WWI. On Hungarian parliamentarism see Hadjù [1987].

The industrialists discarded the risk of exchange depreciation, which at worst would boost their competitiveness (Michel [1976], p. 231). They were also prepared for custom duties within the monarchy since this meant protection against Austria's industry. They also wanted cheap credit and believed that a national bank would be successful at meeting their specific needs. Regional bankers concurred, complaining that the Austro-Hungarian Bank was not paying enough attention. They claimed they were victims of discrimination and credit rationing. The contrast between bankers' views in Budapest and the provinces is really intriguing. How could Budapest and the Provinces differ so much?

As divisions became apparent in 1908, two evolutions took place. First, regional interests, and especially bankers, began adopting more union-friendly tones. The chasm between financiers in Budapest and the regions was being bridged over. In February 1910, a congress of provincial bankers acknowledged that access to the common bank's discounting facilities was quite useful. The conference concluded with a declaration reflecting the turnabout: "This century is not devoted to disruption but to intense and pervasive exchanges, to mutual understanding, to reasonable compromises. Agreeing on the basis that is necessary to the satisfaction of all parts involved is by no way a lack of patriotism".²⁷

Second, evidence that a fraction of the public wanted to retain some benefits of a common central bank led Wekerle to produce an alternative secession scheme. It combined full separation between the two parts of the Austro-Hungarian Bank along with a cartel agreement between the two resulting entities. The "Central Bank Cartel" would impose a uniform interest rate throughout both countries, and a fixed exchange rate between each part. That would still be a monetary union, but the centralization of decision-making would be restricted to minimum. For what we can understand, it seems that the scheme envisioned reciprocal par acceptance of the notes issued by each bank. The free rider problem was obvious, and resulted in depriving Austria from control over the money supply. Agents would have obtained credit where it was cheapest (in Hungary), and monetary policy would have been set in Budapest. The Austrian reaction was "quick and violent".²⁸ It could not prevent Hungary from setting up its own bank, but it could refuse cooperation with that scheme.²⁹ On April

²⁷ . Quoted in *Neue Freie Presse*, February 4, 1910.

²⁸ . Federn [1910], p. 456.

²⁹ . This mechanism is known as the inflationary bias of common currencies: if, in a monetary union, money issues are decentralized, an inflationary bias shall emerge with each central bank seeking to exploit the union by

25, 1909, the Emperor Franz-Josef vetoed the Cartel on the ground that it endangered the solidity and credit of the Austro-Hungarian bank of issue.

By the Autumn of 1909, the Independence Party was disintegrating: extremists led by Justh, insisted on the strict application of the initial project of a fully sovereign Hungarian National Bank. But a more moderate fraction, led by Kossuth and Count Apponyi resisted. The Wekerle Cabinet fell in January 1910.³⁰ Hungary began to negotiate a renewal of the Austro-Hungarian Bank's charter for another ten years. In the Spring of 1910 a new election sealed the fate of the Independence Party.³¹ An arrangement was arrived at with the Bank before the former statutes expired. The charter of October 1910 extended the life of the common bank for another round in essentially the same shape as in 1899. The independent central bank project had collapsed, apparently of Hungary's own accord. In 1912, the Hungarian finance minister Teleszky would declare: "The common bank is a better deal for us than an independent bank of issue would have been".³² What had changed between 1899 and 1910 that made secession so less attractive?

Section III. Reputation and Secession

Supporters of secession vituperated that the change of mind had resulted from their adversaries' skilful propaganda. They accused them of having threatened the "less knowledgeable categories of national production" with apocalyptic and of course unfounded predictions such as a "constant, ruinous increase of the discount rate".³³ Given the elitist

exporting the costs of inflation. Flandreau [1993] argues that if central banks retain the right to discriminate against foreign notes, they can enforce discipline. This was understood by contemporaries. According to Federn [1910], p. 457: "Where did the risk lie? In the maintenance of the value of notes. The Hungarian notes, if there was no legal obligation to take them at par in Austria, would have been very much as the notes of other foreign banks - a fluctuating value in the Austrian bourse. [...] The Hungarian bank would have had to make sure that it would always hold a metallic treasure so that nobody would doubt of the capacity of Hungary to meet its foreign obligations, in gold if necessary. Hungary would have had for this purpose to raise its discount rate in order to prevent the excesses of credit that would cause too big an efflux of notes, and a disequilibrium between the reserve and the outstanding circulation. On the other hand, if Hungarian notes were to be taken par in Austria, Hungary would have neglected to behave, because it could always have poured in Austria its surplus of notes. Then the problem would have been Austria's [...] The advantages of the independent bank of issue, if they exist, would have been for Hungarians, with Austrians eliminating the risks".

³⁰ . See *Economiste Européen*, May 7, 1909, XXXV, p. 601. The newspaper also mentions that the Budapest stock exchange welcomed the collapse of the central bank cartel project. The cabinet was not replaced until January 1910.

³¹ . According to Lévy « the elections of the Spring of 1910 have given a large majority which is hostile to extreme solutions; the renewal of the privilege of the Common Bank seems more and more likely » p. 145-6.

³² . *Neue Freie Presse*, September 24 1912, "Eine Grosse Anlekenemission in Ungarn", p. 13-14. Quoted in Michel [1976], p. 232.

³³ . Aberdam [1910], p. 226.

nature of the debate, it is not clear that such accusations were warranted. One does find evidence of sophisticated contemporary discussions of the economics of secession as illustrated for instance by two survey articles published in 1910. The first, by Federn, editor of the *Österreichische Volkswirt*, supported the continuation of monetary union. The second, by one Aberdam, popularized the views of Béla Földès (a Professor of Political Economy at the University of Budapest and expert for the Hungarian monetary commission of 1892), supported secession.³⁴ Taken together, the two articles provide a comprehensive review of the arguments.

Protagonists concurred that secession hinged critically on measuring the cost of capital with and without monetary union. Thanks to the pioneering work of economist Frigyes Fellner on Hungary's balance of payment (Fellner [1903], [1908], [1917]), contemporaries were aware of Hungary's dependence on foreign capital.³⁵ Hungarian government bonds were largely held in Austria, even if this fraction was declining in the early 1900s, owing to purchases by Hungarians investors (Figure 2). Moreover, scattered evidence pointed to a substantial reliance of Hungary on short-term capital from Vienna.³⁶ Overdrafts and deposits from Viennese banks helped finance credit expansion in Hungary.³⁷

Figure 2 : here

Opponents to secession emphasized that lack of a common currency might complicate Hungary's management of its external books. For instance, Viennese banks would not be as willing to supply money to their Hungarian counterparts as they had been previously. Difficulties could also arise if Austrians were to dump Hungarian securities on the market. Federn argued that "Austria removes the problem of stabilization of the currency from Hungary, and that is probably the greatest service which Austria gives to the Hungarians, through the banking and monetary community".³⁸ Finally there would be exchange rate fluctuations, which, albeit small (they would occur within 'gold points' since it was generally

³⁴ . See his opinions on monetary stabilization in *Gutachten über die Österreichisch-Hungarische Währungs-Reform*, p. 8-9.

³⁵ . See especially Fellner [1917], p. 80-81. Michel ([1976], p. 223) emphasizes the Hungary's dependence on "Austria and the rest of the world, not only for the government bonds but for railways and other section as well, such as banks (only 35% of Hungarian banks' capital held in Hungary in 1899). See Pammer [1998] for new material.

³⁶ . See Flandreau and Gallice [2005] for a discussion of the mechanisms involved.

³⁷ . Michel [1976] provides estimates of the extent of this.

³⁸ . Federn [1910], p. 456.

agreed that a sovereign Hungary would be on gold) would require the National Bank of Hungary to raise interest rates when needed. But would the new Bank of Hungary enjoy the experience and credibility of the Austro-Hungarian Bank? ³⁹ Secession may have the perverse effects given its intended objective of greater supply of credit.

Secessionists conceded that over the short run, there might be some costs, due to the inevitable “jolts of transition, lack of experience and age-old traditions on behalf of the new Bank, and exchange rate fluctuations”.⁴⁰ But the process would generate self-stabilizing forces in a “neo-classical” fashion: With Austrian sales of Hungarian securities, yields would rise, but this would encourage foreigners to increase their holdings of Hungarian bonds, restoring equilibrium. To the notion that an adverse balance of payment meant losing gold and forced discount rate increases, secessionists objected using an early variant of the monetary approach of the balance of payments (Frenkel and Johnson [1976]).⁴¹ International gold flows were determined by national monetary requirements, not by the current account. The international monetary equilibrium produced a “smooth distribution of gold between the various countries, according to each nation’s needs”.⁴² If gold leaked out in excess of needs, interest rates might rise but only transitorily, and this would check the export of gold thus ruling out the supposed need for continued interest rate hikes (this is similar to McCloskey and Zecher, 1976). After all, other debtor countries were able to retain their gold reserve.

Thus, secessionists disregarded the transition to the post separation equilibrium as a problem of secondary importance. Perfect international arbitrage (the “resources of modern finance” and the “speed of communications” in the language of the time) would ensure that monetary equilibrium be obtained at low cost. Some institutional details could determine the cyclical behaviour of interest rates.⁴³ But a carefully designed exit strategy would prevent

³⁹ . The new Bank, warned Federn, “would have to take care that its notes get a stable price in foreign stock exchanges, if it wanted to prevent damaging its reputation” Federn [1910], p. 458.

⁴⁰ . Aberdam [1910], p. 226.

⁴¹ . « *Si la solidarité étroite du mouvement de l’or et de la balance des dettes et des créances existait, le pays à balance défavorable se verrait — en bonne logique - vite dépouillé de son métal précieux [...] Conclusion évidemment absurde* », Aberdam, p. 227.

⁴² . Aberdam [1910], p. 228.

⁴³ . This included the precise institutional design of the central bank. Among options, Aberdam (1910, p. 227) identifies the British model of assertive interest rate increases to check gold outflows, the French one of gold devices, and the German system of moral suasion. Separatists found that the British case required a degree of financial development Hungary had not reached, and opted for one of the Continental models.

interest rates from rising.⁴⁴ If a given security is indeed a low risk, someone shall inevitably end up holding it at the right price: The question thus boiled down to a matter of “credit standing”.⁴⁵ Secession only required “foreign confidence, in which in last analysis all economic relations rest. As long as Hungary knows how to retain that trust, its transactions will not encounter, on the international money market, any serious difficulty”.⁴⁶ On this account, secessionists emphasized that the Magyar government had “never abused its creditors, never reneged on its commitments”⁴⁷.

Who was right? This paragraph focuses on one aspect of the debate, namely the effect of secession on bond prices. In 1905, Hungary’s public debts comprised two parts: on the one hand were Hungary’s “domestic” paper bonds, denominated in crowns. On the other hand, were the “gold” bonds, denominated in Western European gold convertible currencies. The concern opponents to secession had was that paper bonds, denominated in the union’s currency, were “at home” both in Vienna and Budapest, and in effect largely held in Vienna. Haupt [1896] indicated that around 1890, 52% of Hungary’s paper debts were held in Hungary, 44% in Vienna and only 4% abroad.⁴⁸ But this situation would only continue for as long as Hungary would remain within the monetary union. In the event of monetary secession, and even if debts were denominated in Austrian currency as they normally should (redenomination in Hungarian currency being equivalent to a default since it had not been considered in initial contracts), Austrians might have become much less eager to hold such bonds. As for investors outside the Habsburg Empire – in Berlin, Paris, or London – they may not have been willing to make up for the difference and buy what Austria may be selling. This, not so much because of distrust, but rather because of the transaction costs they faced when

⁴⁴ . Aberdam [1910], p. 229. Secessionists even called mathematical economics to the rescue, emphasizing that the ultimate determinant of interest rates was marginal productivity of capital, which was bound to equalize across the world. Aberdam explicitly quotes to the work of the Italian economist (and later politician) Francesco Saverio Nitti had demonstrated in 1898 that “in the ideal case of a pure credit economy, the maximum interest rate is given by the average profit rate”. It seems that Aberdam was referring to *La misura delle variazioni di valore della moneta*, quoted by Fisher [1911].

⁴⁵ . Such was the conventional view among contemporaries. As James de Rothschild had reminded the Austrian minister of finance a few months after the first Compromise was signed “the price of public securities is, with good reasons, considered as the exact measure of the degree of trust which national credit deserves. It is on that basis that the credit of all national companies is in turn assessed, and, from that point of view it has a tremendous influence on the development of prosperity”. Quoted in Gille [1967].

⁴⁶ . Aberdam [1910], p. 230.

⁴⁷ . See Kövér [1988] on how Hungary acquired a reputation in the early 1870s, by agreeing to pay the Corporation of Foreign Bondholders – a balance that was due by Austria.

cashing their coupons or performing arbitrage operations: The market for crowns in, say, Berlin, was less liquid than the market for, say, sterling, explaining why such a modest fraction of Hungary's crown paper debts (4% in 1890) were held outside the dual monarchy. Therefore, the argument would go, the bulk of Hungary's crown debts would have inevitably fallen back on Hungarian hands, causing a deterioration in borrowing conditions.

But this problem could be taken care of via financial innovation. One only had to combine secession with a conversion of the crown debts into gold debts. Indeed such is the standard purpose for including foreign exchange clauses in debt contracts – to secure of liquid market abroad (Flandreau and Sussman [2005]). Haupt [1896] provides evidence on the effects of gold clauses circa 1890: the breakdown of Hungarian gold debts was 82% abroad, 12% in Austria, and 6% in Hungary.⁴⁹ Unsurprisingly therefore, financially literate Hungarian separatists authorities opened talks with international banks in 1905 in order to organize a conversion of Hungarian government debts traded in Vienna into some gold-denominated international instrument (Michel [1976]). As they found, the size of the required conversion would be manageable. Standing at 57% of Hungary's so-called “special debts” in 1890, paper debts declined to 36% in 1898 and 20% in 1907.⁵⁰

Thus the whole issue boils down to measuring the impact of secession on the yield on gold denominated government securities. While this cannot be measured directly, it is possible to address a tightly related question. We can determine whether Hungary benefited from better borrowing conditions as a result of her being part of the Habsburg Empire. In Flandreau and Zumer [2004], we used contemporary data to price gold bonds yields for an almost comprehensive list of European nations (plus Argentina and Brazil) in the late 19th century (1880-1914). The study found that debt burdens, measured as the ratio of debt service to government revenues, accounted for most of the cross-sectional and time series variations of long term interest rates. Because the sample precisely contains sovereign countries of varied size, location, and reputation, it provides an estimate of the average elasticity of borrowing

⁴⁸ . Haupt source was Dr Ign Gruber, *Tabellen zur Währungsfrage*, Vienna: Ministry of Finance, 1893, Corresponding numbers for Austria are: 81% of government paper debts held in Austria, 9% in Hungary and 10% abroad.

⁴⁹ . Corresponding totals for Austrian gold debts were: held abroad 81%; held in Austria 19%; held in Hungary 0%.

⁵⁰ . Author's computations, from Crédit Lyonnais Archives. Figures refer to the fraction of post 1867 debts. I have included the crown debts of the 1900s on the understanding that there included fixed exchange rate clauses.

terms to the debt burden for a sovereign nation, and can thus serve to simulate what would have been Hungary's borrowing costs, had it been sovereign.

If being part of the Habsburg Monarchy improved Hungary's borrowing prospects, then we should find that Hungary faced lower rates than those implied by its "fundamentals", using the general formula that applies to sovereigns.⁵¹ Figure 3 below provides a visual test of the value of being part of the Habsburg Empire. It depicts the actual spread between Hungarian and Austrian yields, the simulated one, and confidence margins. If Hungary benefited from union, we should expect the simulated spread to be *significantly above* the observed one. But the actual and simulated spreads are very close to one another, and discrepancies are neither large (at most 10 basis points) nor significant.⁵² One can reject the hypothesis that membership to the Habsburg monarchy entailed credibility gains. Hungary was essentially priced as a sovereign nation.⁵³ One interpretation, of course, is that Habsburg membership was never taken very seriously by the market, given all the secessionist threats, so that investors already priced Hungary as a sovereign country. In which case we may understand why secession could not have affected borrowing costs.

Strictly speaking, this finding says nothing on what would have actually happened in the event of secession. Hungarians authorities might of course have become crazy, they might have printed money, issued debt, defaulted, etc. Or they might have been able to cut military spending, improve their fiscal capacity by raising custom duties, etc. All these moves would have influenced interest rates in one way or another, so that a "complete" counterfactual is just not feasible. The point, however, is that they might have done just the same as they actually did, and wouldn't have behaved more badly than any other sovereign nation of the time. But that's all we need to prove: that in this case the market would not have penalized Hungary. In sum, we should not look in the bond market for participation incentives, for they were just not there.

Figure 3: Here

⁵¹ . For details, see Flandreau and Zumer [2004], p. 38-44 and 72-93.

⁵² . Interestingly, the 1905 election might have played a role in marginally deteriorating borrowing conditions, but the effect remains very modest.

⁵³ . Contrast with the discussion in Eddie [1982] who argues that Franz-Joseph would never have accepted that Hungary would default. That Hungarian rates were on average above Austrian rates is evidence that investors disagreed. And this is the only thing that matters when measuring the costs of secession.

Section IV. “A better deal for us”: the Austro-Hungarian Bank and the Compromise

So why didn't Hungary secede? This paper's interpretation of why monetary union turned out to be a better deal for Hungary rests on two complementary arguments, having to do with national and international monetary integration respectively. Consider international monetary integration first. The previous section has shown that the credibility costs of secession were probably inessential since financial innovation could secure a replacement to Vienna as supplier of capital. Not all costs could be escaped, however: In a sovereign Hungary, private credit, in the form of bill discounting, would be conducted at higher costs than if the Magyars remained part of the Empire. This is because, as long as they were part of the Empire, Hungarian borrowers could draw crown denominated bills of exchange on Viennese correspondents. These bills could then be sold anywhere in the world where Viennese financiers had connections. Flandreau and Jobst (2005a) show that the Austro-Hungarian currency was traded in a very large number of centres. It was bought and sold in virtually every European market and in a few non-European markets such as Mexico. Its international standing was comparable to that of the Dutch Florin or Belgian Franc two important European currencies.

Moreover, Flandreau and Jobst (2005b) report evidence of a tight correlation between international circulation (measured by the number of markets where a given currency was traded) and short-term commercial rates. At a time when fixed exchange rates ruled, persistent interest differentials must be interpreted as liquidity premiums. Figure 4 illustrates this relation for 1910. As can be seen, currencies traded in the smallest number of foreign markets had short-term interest rates at least 200 basis points above London rates (and possibly much more since it is quite likely that the true relation was non linear), The currency of the Habsburg monarchy, which enjoyed regional circulation, had rates on average only about 50 basis points above London. In this background, a reasonable guess on the rates that would have prevailed in an independent Hungary can be inferred. A crude guess would be to assume that Hungary would not be very unlike Romania, or roughly 150 basis points above London. A more rigorous measure is to use empirical data to predict the number of markets where the

Hungarian currency would be traded.⁵⁴ The answer one gets is that it would have been traded in one foreign market at most – Vienna. Using the regression line in Figure 4, we may conclude that Hungarian short term spreads against British rates would have stood at about 100 basis points above what they were when Hungary was part of the dual monarchy. This is one measure of the cost of secession, and it is substantial.

Figure 4: Here

An independent Hungary would thus have had a higher discount rate than if it had remained part of the Habsburg Union. This helps to understand the commitment of Budapest bankers to monetary union, discussed earlier, and their concerns that secession would mean a higher price for working capital. But how to understand then that Hungarians could be so bold and so successful when threatening with secession? And how could regional bankers fail to understand this? To explain this paradox, we must take into account the existence of very poor regional monetary integration of Hungarian provinces to the rest of the monarchy, including Budapest. While precise data on this is lacking, anecdotal evidence suggests that Hungary's provinces had substantially higher interest rates than the rest of the monarchy.⁵⁵ Moreover, a parallel may be drawn with the findings of David Good for Austria (Good [1977a], [1977b]). Good reports evidence of higher interest rates in Austria's provinces than in Vienna during the period 1870-1910, and shows that these differentials declined in proportion to the decrease in transaction costs and the greater circulation of capital across regions.⁵⁶ Most critically, Good specifically acknowledged the importance of the central bank in fostering market integration in Austria. In any case, all evidence we have on the relative development of the two parts of the monarchy, both economic and financial, point to Hungarian retardation and a worse situation in its provinces.⁵⁷ Therefore, there was gap between the credit conditions in Hungarian regions and those in Budapest. For the Provinces, the benefits of being tied to an international currency could be offset by local inefficiencies. A

⁵⁴ . The procedure is to use the estimated parameters of the determinants of foreign quotation considered in Flandreau and Jobst 2005b, and then simulate the number of expected quotations on the basis of data for Hungary. For simplicity, It is assumed Hungarian trade patterns to be constant post secession. Given the pre-secession concentration of Hungarian trade this provides an upper bound to the likely number of quotations.

⁵⁵ . According to Michel [1976], p. 20, the Austrian Vice-Governor argued during the Generalrath meeting of 26 June 1901 that the current bank rate was “certainly too low” given Hungary's systematic tendency to have higher rates.

⁵⁶ . Some partial results on Hungary, supporting the intuition here, but for an earlier time period are provided by Good [1984].

better course of action was thus to set up an independent bank in Budapest. This would create higher benchmark rates, but this could help pushing down local rates.

A simple model of credit markets can help clarify the intuition (Figure 5.a to 5.c). We consider the situation around 1900. Bankers in Budapest can rediscount bills at the Austro-Hungarian Bank's rate. Interest rates in Budapest are thus equal to interest rates in Vienna. Hungarian Provinces are isolated by large transaction costs and face high rates. Figure xx shows what would have happened in the best of all worlds, had secessionists got their way. Conditions in Budapest would have deteriorated, but conditions in the Provinces would have improved given that the Hungarian National Bank would have improved Hungarian money market integration. Obviously, the net gain from secession depends on balancing the costs and benefits: but we do not need to get into that to explain the conflict between alternative groups of bankers identified earlier. Of course, a superior arrangement (from the point of view of all Hungarian interests) is one where the Austro-Hungarian Bank takes care of fixing Hungary's regional integration problem. Then, both Budapest and the Hungarian provinces gain. A prediction of this analysis, shown in Figure 5.c, is that there should be a massive transfer of credit to Hungarian Provinces.

Figure 5a to c: Here

Figure 6 shows what happened to the Austro-Hungarian Bank's portfolio of commercial bills after the victory of the Independence Party in 1905. Four items are identified: "Vienna", "Budapest", "Austrian branches" and "Hungarian branches". Between 1906, when the campaign against the bank began, and 1912, when Teleszky pronounced the common bank "a better deal", the share of the Hungarian branches' discounts increased from being the lowest to being the highest. This is exactly the prediction in Figure 5.c. A better deal indeed: Hungary's second thoughts may be easier to understand now.

Figure 6: Here

Further evidence can be obtained by looking at Figure 7, which shows the average maturity of bills held. In Hungarian branches, maturity was close to two months throughout the entire period under study. It was by contrast much lower in Budapest and in Austrian provinces, and even lower in Vienna (30 days). This shows that, while the Bank acted in Vienna more

⁵⁷ . For traditional reference, see e.g. Berend & Ranki [1974], Eddie [1989], Hertz [1947], Katus [1970],

like a “modern” central bank, rediscounting bills from bankers, it behaved in Hungarian provinces as a primary discount house, probably supplying funds to merchants, industrialists and certainly local financiers. Combining this with the evidence of an increase in overall lending, we must conclude that the Austro-Hungarian Bank became after 1906 a powerful engine of regional market integration in Hungary.

These elements point to a simple interpretation of the failure of the Hungarian National Bank project. The reason why secessionists lost the support of the provincial elites is because the Bank bought in this group. The generous share of the total credit supply of the Bank that the Hungarian provinces received aligned their incentives with their Budapest counterpart. By standing ready to give credit in Hungarian Provinces at conditions close to those in Vienna, the Austro-Hungarian Bank provided a net benefit that would be lost in the event of secession. This is what stabilized the bargaining relation within the monarchy. Historian Bernard Michel once suggested: “Financial links between Vienna and Budapest were one of the strongest foundations of the continuation of the compromise” (Michel [1976], p. 233). This paper has provided some elements on why and how this was the case.

Figure 7: Here

Conclusions

This paper has argued that the Austro-Hungarian Compromise of 1867 should be studied as a bargain in which monetary interests loomed large. But if the compromise was a “deal” then the natural instruments of investigation should be the tools of public economics and political economy. We found that the survival of the monetary union between Austria and Hungary really resulted from an adjustment of incentives. Hungary had been able to secure formal control over the common central bank. Moreover after 1900 it was also able to secure an increasing share of Austro-Hungarian Bank lending. This evolution makes perfect sense in the light of the theoretical elements put forward in the Introduction. Because the Magyars had pretty definite ideas about how their development strategy should look like, and because they were prepared to discontinue their membership to monetary union if they did not have their way, their negotiating counterparts had to give in, or face the prospect of secession.

Rudolph [1976]. Modern references include Good [1994], Good and Ma [1998], and Komlos [1983b].

What remains to be fully understood therefore, are the motives for Austria and the Austro-Hungarian Bank shareholders' behaviour. Future research should explore this matter systematically, but a few leads seem obvious. For Austria, candidate explanations include security, dynastic and imperial considerations. Economic factors might have played a role as well: for instance, one such is the maintenance of the crown as an international currency. It is likely, and in effect, consistent with the evidence in Flandreau and Jobst [2005b], that the size of the dual monarchy was a critical factor in explaining the international success of its currency. Austria might have suffered as well from Hungary's secession. Another important item was the impact of the monetary union on bilateral trade. There again, Austria would have lost from secession. Another promising research avenue is to explore the cooperation incentives of the Austro-Hungarian Bank. On the one hand it may have been willing to extend its business in Hungary for purely political motives: because Austria wanted it and because the Bank could not afford upsetting the master. On the other hand, increasing its activity in Hungary might have turned out to be a rewarding job. Before more work is done, we can conservatively remark that we do not know that the Bank became less profitable after it extended its activity in Hungary. Keeping Austria and Hungary together might have been a rewarding business. The conclusion would be that central banks are powerful political/bureaucratic actors in monetary unions. Because they may benefit from expanding their size, they are concerned with keeping the union together and thus tend to transform themselves, over time, into a tool for redistribution.

To conclude, we should note that the evidence on the monetary aspects of the Habsburg union reported here reinforces earlier suggestions (Komlos 1983b) that the Habsburg union was a good deal for Hungary, in blatant contrast with the conventional views on the matter. Recast in terms of the classic debate on "centrifugal" vs. "centripetal" forces in the pre-WWI Austro-Hungarian monarchy, this paper's main finding is that strong cooperative forces were at work in the period under study, as evidenced by the ability to strike a series of monetary deals and by the failure of the secessionist project. The eventual break-up of the Austro-Hungarian Empire was by no means written on the wall.

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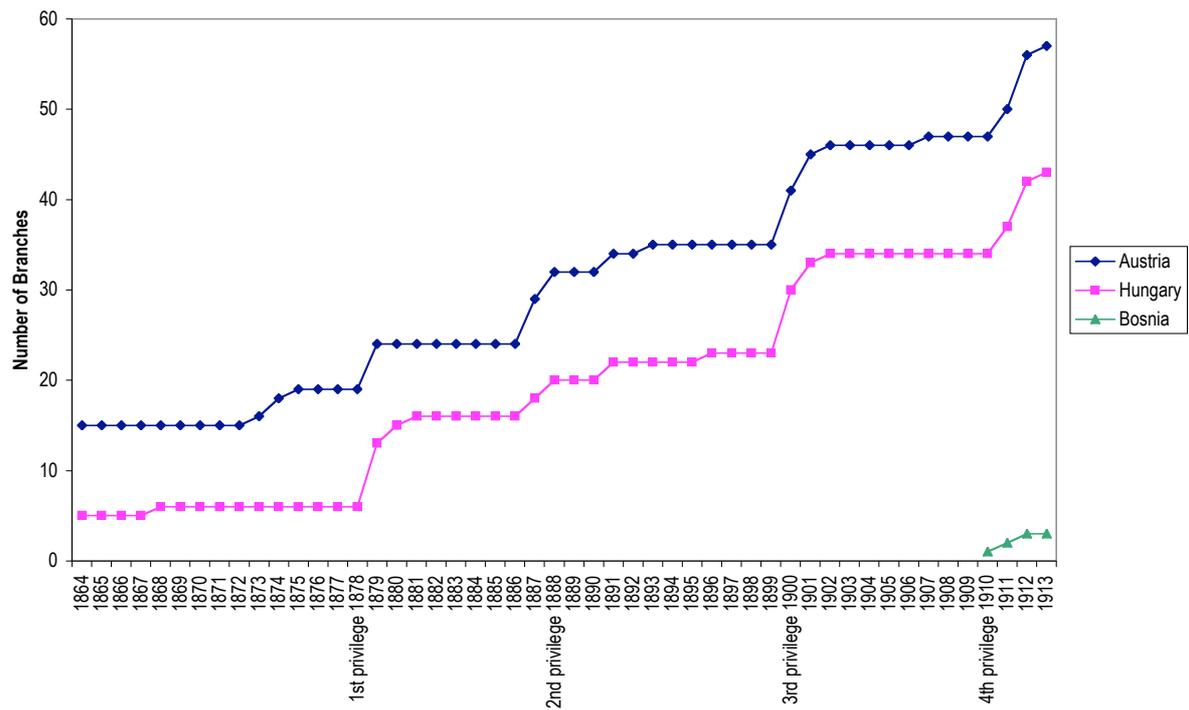
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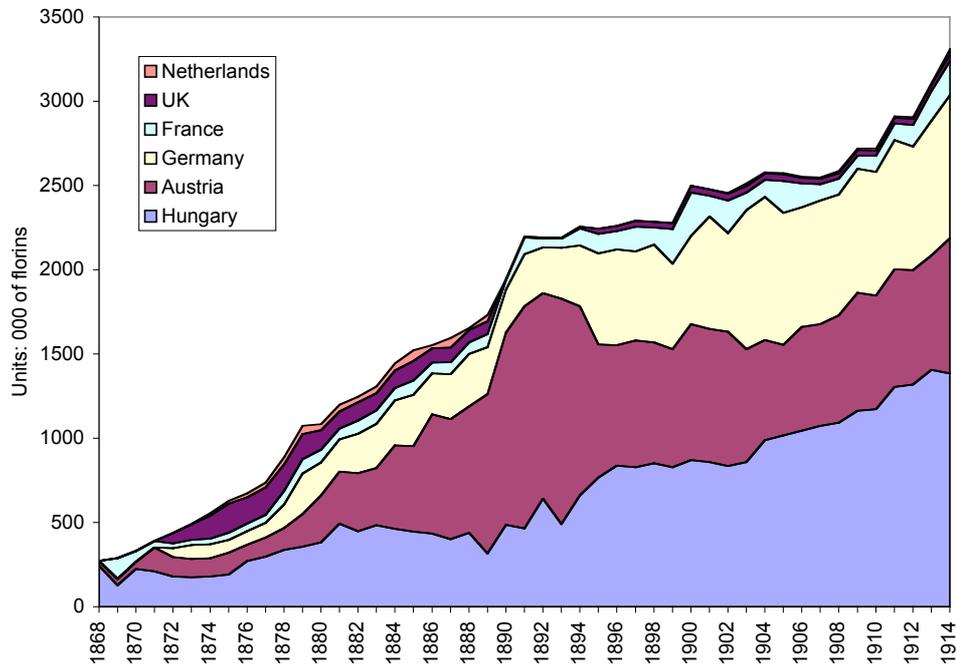
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Figure 1. Total number of agencies (branches plus direction) in Austria and Hungary



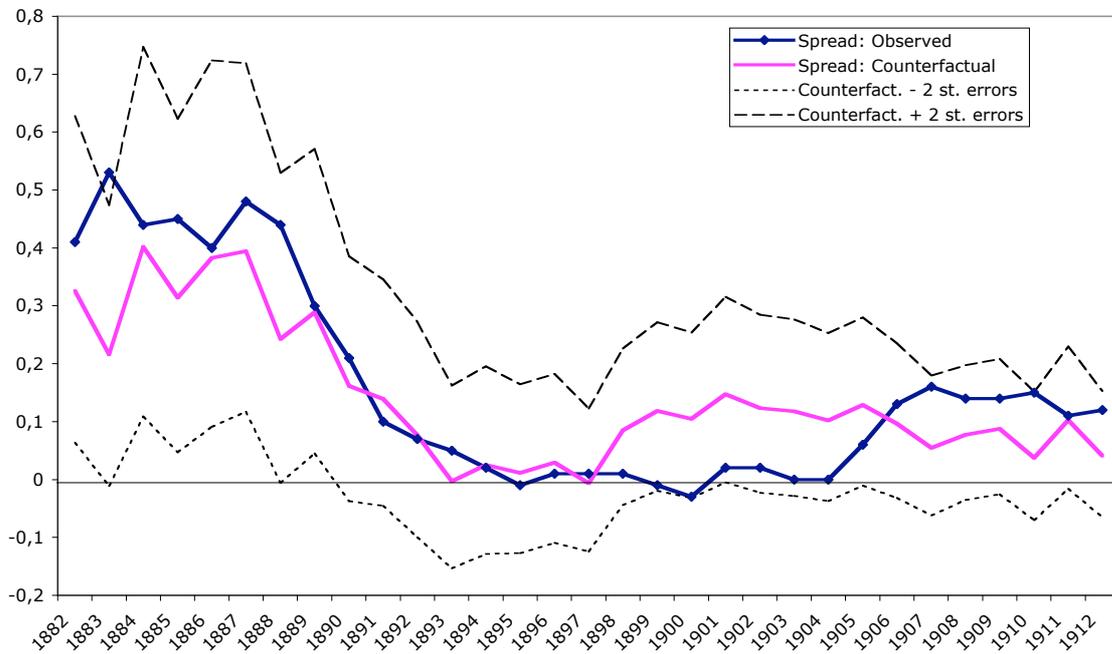
Source: Annual reports of the ÖNB and of the AHB, National Library Vienna

Figure 2. Breakdown of Hungarian State Securities



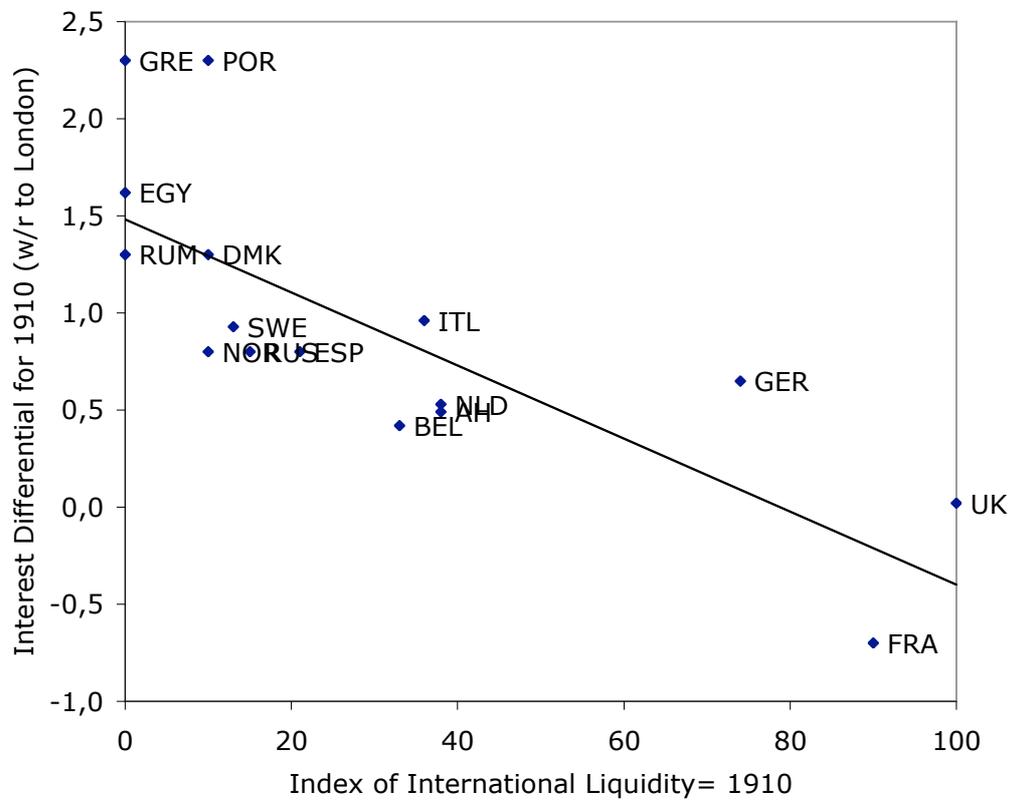
Source: Fellner, 1917. The figures were derived from information on where the coupon's on Hungary's «special debt» was paid. This does not include the part of the pre-1867 «common debt» for which an annuity was paid to Austria.

Figure 3. Hungarian premium—observed and simulated



Source—author's computations (see text and appendix).

Figure 4. International circulation and interest rates



Source: See text. Indices of international liquidity are from Flandreau and Jobst [2005a]. Interest rates are from Flandreau and Jobst [2005b].

Figure 5.a. Setting circa 1900. Integration between Budapest and Vienna, No integration between Budapest and Hungarian provinces

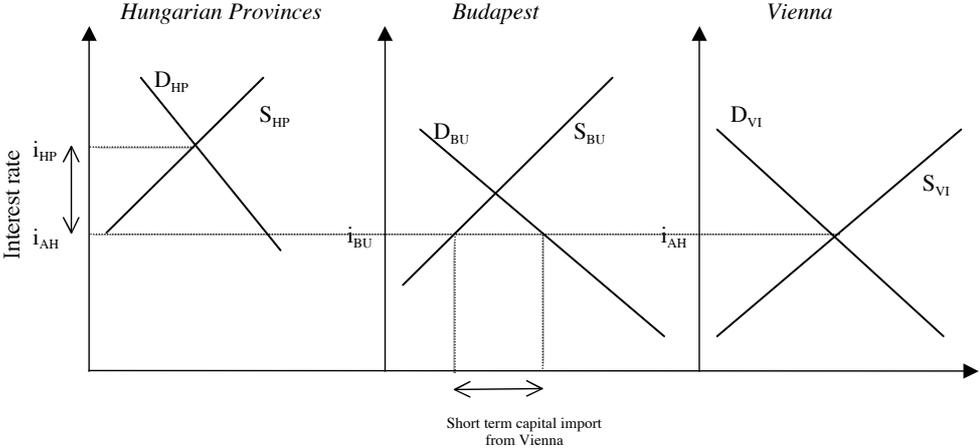


Figure 5.b. Counterfactual Effect of Secession: Higher rates in Budapest, Lower Rates in Hungarian Provinces

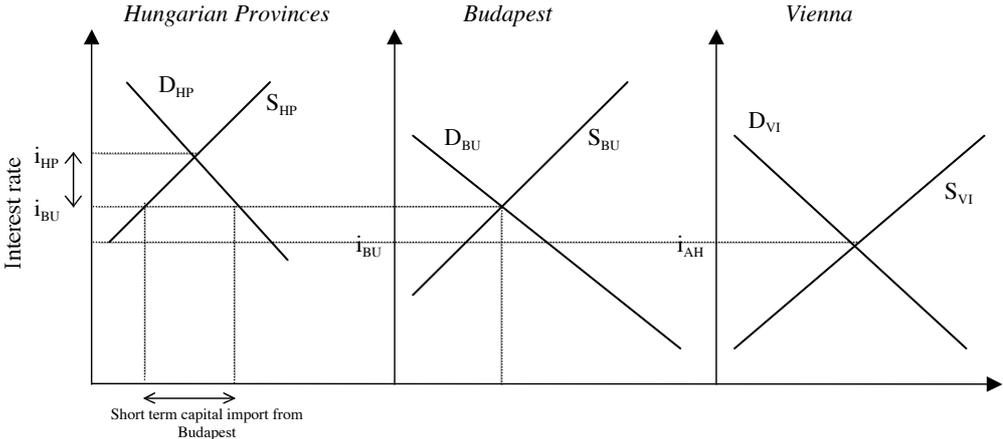


Figure 5.c. Effect of Market Integration and Monetary Union

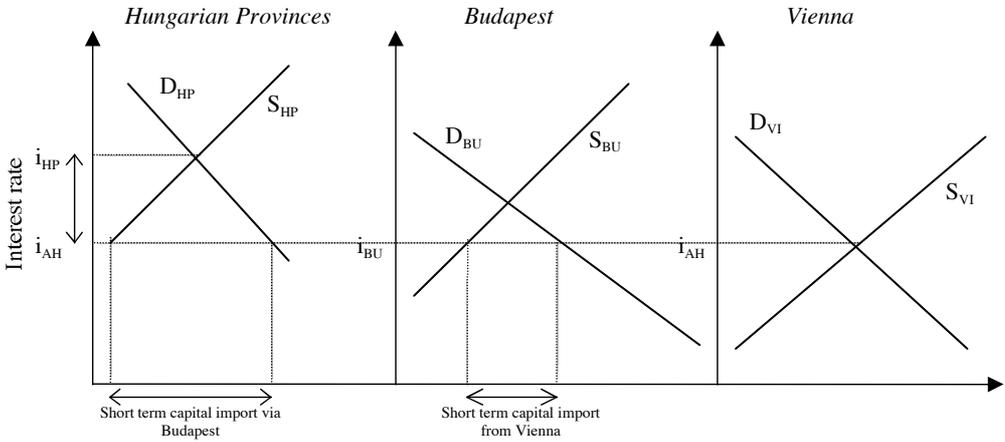
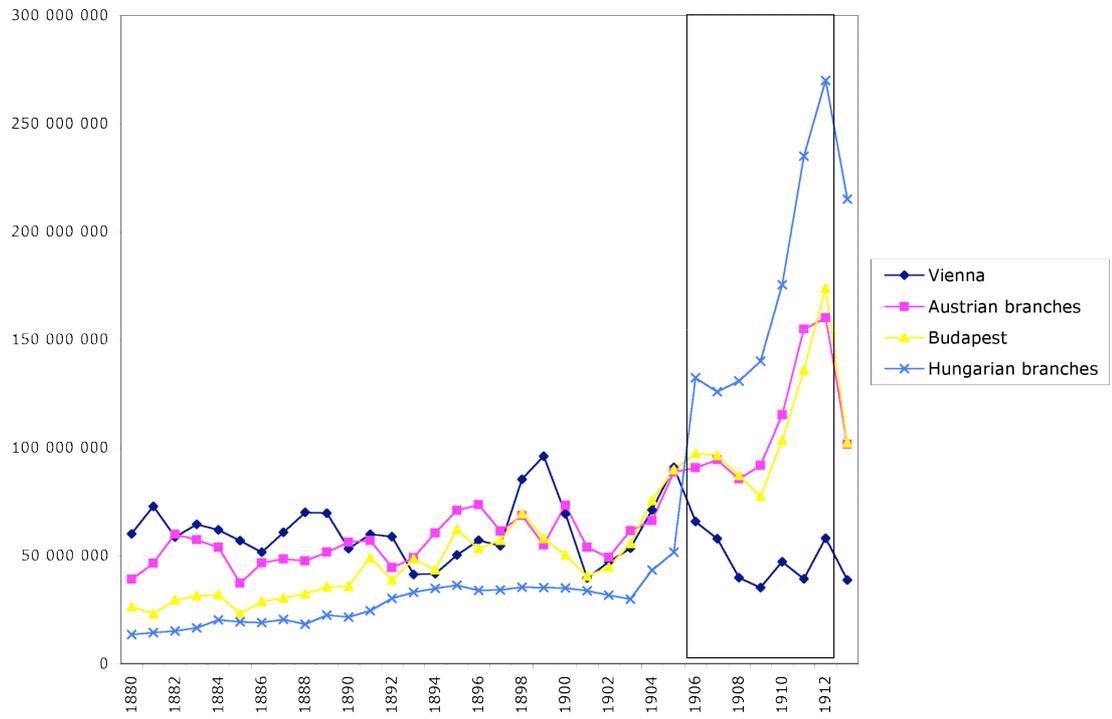
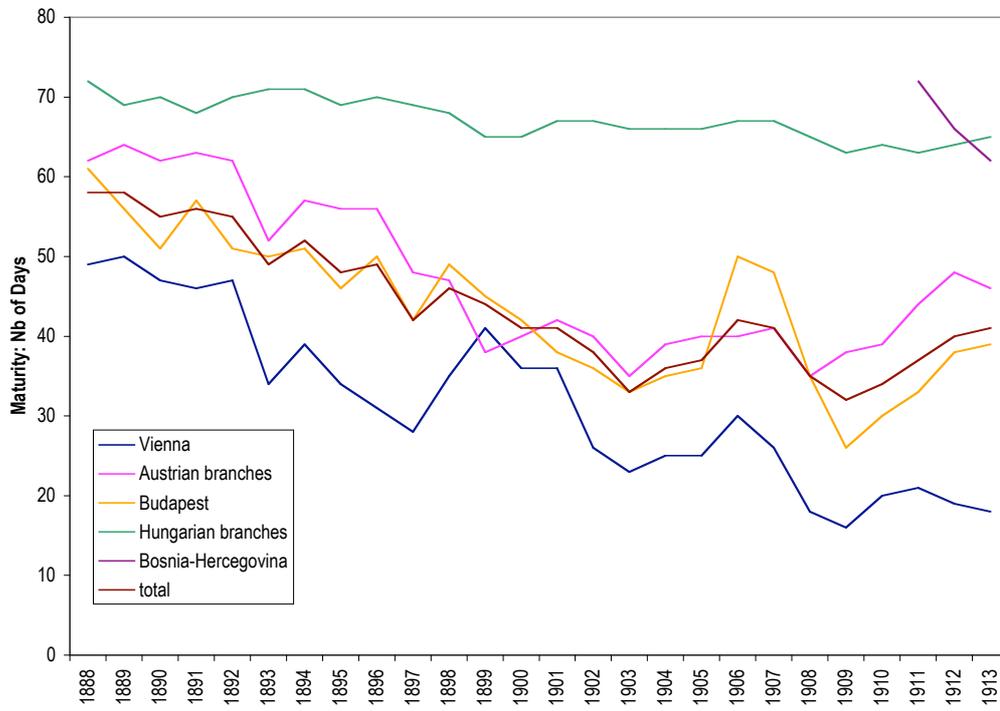


Figure 6. Breakdown of AHB's bills portfolio (florins)



Source: see appendix.

Figure 7. Average Maturity of Austro-Hungarian Bank's Bills Portfolio (by Location)



Source: see appendix.