Sui Generis EMU[1]

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1. Introduction

The thesis of this paper is that there is no historical precedent for Europe's monetary union. To be sure, it is possible to point to similar historical experiences, the most obvious of which were in the 19th century, occurred in Europe, and had "union" as part of their names. But EMU differs from these earlier monetary unions.[2] The closer one looks the more uncomfortable one becomes with the effort to draw parallels on the basis of this, and related, historical experience.

I elaborate these points by reviewing previous efforts to use historical experience to shed light on European monetary union. I argue that these earlier efforts to draw parallels between EMU and monetary unions past are more likely to mislead than to offer useful insights. The important lesson is the need for nuance when drawing lessons from this history.

Where history is useful is not in drawing parallels but in pinpointing differences. It is useful for highlighting what is distinctive about EMU and why, therefore, parallels mislead. I illustrate the point with reference to three issues around which discussion of EMU currently focuses: the relationship between monetary union and financial

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[2] Here I use EMU to refer to European Monetary Union (as opposed to Economic and Monetary Union as tends to be the practice in Brussels). Alas, "Sui Generis Euro Area" does not roll off the tongue.

integration; the connections between monetary union and financial stability; and the probability that the euro area might break up.

2. Imperfect Analogies

The leading historical analogies with EMU are the classical gold standard, the Latin and Scandinavian Unions, a number of relatively specialized 20th century monetary unions, and various national experiences with monetary and political unification.

2.1. The Gold Standard. A number of authors have sought to use gold standard experience to draw implications for EMU. The idea is that the gold standard constrained national monetary autonomy in the same manner as EMU. Its maintenance therefore required the development of alternative adjustment mechanisms. Evidence from the gold standard permits one to test the notion that wage and price flexibility – and the flexibility of markets generally – is important for the smooth operation of such a regime. It can be used to explore whether adoption of this regime encouraged the development of the relevant flexibility. It can be used to test whether by limiting exchange rate variability the gold standard was conducive to the growth of international trade and to financial integration. It can be used to investigate how much fiscal and macroeconomic policy coordination was needed for the operation of this system.[3]

The problem is that the gold standard was a first and foremost a national arrangement. It involved a national decision to peg the national currency to an external numeraire, like Latvia's today, not a decision to abolish the bilateral exchange rate by abolishing the national currency, as the founding members of EMU agreed in 1999. To

[3] Thus, Flandreau, le Cacheaux and Zumer (2006) inquire into how much fiscal autonomy was retained under the gold standard and attempt to draw out lessons for EMU. Panic (1992) seeks to draw a variety of lessons from the gold standard for Europe's monetary union.

be sure, the attractions of adopting the gold standard were not independent of the number of other countries that similarly adopted the gold standard.[4] But occasional international conferences on the desirability of harmonizing national monetary arrangements notwithstanding, the decision was taken at the national level and the regime was operated by the national central bank, treasury or equivalent.

Under the gold standard, as in the case of all exchange rate pegs, the central parity was surrounded by a fluctuation band, reflecting transactions costs.[5] Thus the gold standard, unlike a monetary union, did not eliminate exchange rate variability among the participants.[6] Studies of modern experience caution against drawing inferences about the effects of monetary union on, say, the volume of trade from evidence on the effects of reducing exchange rate volatility. They suggest that the trade-promoting effects of reducing exchange rate variability, even to low levels, are less powerful than those of establishing a monetary union. (This is the finding of Rose 2000.) Similarly, in their study of exchange rate regimes and international trade prior to 1913, Lopez-Cordova and Meissner (2000) find a smaller trade-promoting effect of the gold standard on a pair of gold-standard countries than when two or more countries established a monetary union.

Moreover, because the gold standard was a national arrangement, it was straightforward for the national authorities to suspend or abandon it, as they not infrequently did. They could and did suspend the law or statute requiring the free convertibility of the national currency into gold at a fixed domestic-currency price or

[4] Gallarotti (1995) and Meissner (2005) analyze these interdependencies.
[5] The edges of the band being the famous gold import and export points, defined by the costs of international gold market arbitrage. Giovannini (1989) generalizes the point, showing that all fixed-rate regimes have in practice involved not just a central parity but a fluctuation band. The point will also be familiar to students of Argentina's recent quasi-currency board and Hong Kong's currency-board regime.
[6] Thus, countries that maintained the gold standard but also formed a monetary union where they committed to accepting the obligations of their partners at par further narrowed these fluctuation bands. See the discussion of the Latin Monetary Union and Scandinavian Monetary Union below.

even just complicate the operation of convertibility.[7] Europe's monetary union treaty, in contrast, makes no provision for exit.[8]

It has been argued that suspensions of convertibility in periods of distress, during which the exchange rate was allowed to depreciate, were integral to the operation of this system.[9] In the absence of another adjustment mechanism, this escape clause provided partial insulation from balance-of-payments disturbances. Countries were able to peg under normal circumstances precisely because they could float in periods of exceptional volatility. This escape clause was not destabilizing because it was presumed that convertibility at the previous parity would be restored as soon as the crisis had passed. There is no analogous escape clause in EMU.

This mechanism functioned differently at different times and places. The presumption that, as soon as the period of distress had passed, convertibility would be restored at the previously prevailing price of gold applied more powerfully in some cases than others. The more economically and financially developed was a country, the more likely it was that it would adhere to this resumption rule. The assumption that convertibility would be restored at the earlier exchange rate was also more prevalent before World War I than after.[10]

Whatever the other advantages of the escape clause, it created uncertainty. Currency stability today did not guarantee currency stability tomorrow. Especially after 1914 and especially in less developed countries, there was little assurance that the

[7] Thus, the authorities might use moral suasion in an effort to discourage banks and others from converting domestic currency into coin, or they might follow the Bank of France by only accepting requests for conversion at a remote country office of the central bank (for details see Bloomfield 1959).
[8] Countries could conceivably exit from EMU by unilaterally abrogating their treaty obligations, but the barriers to unilateral exit are substantial, as I argue in Section 3 below.
[9] See Bordo and Kydland (1996).
[10] This is the argument about the decline in the stability of the gold standard between the pre-World War I and interwar periods developed in Eichengreen (1996).

exchange rate would retain its value. Investors in domestic-currency-denominated securities might see their claims devalued. The literature on interest rate spreads suggests that the gold standard made for interest rate convergence, but it does not suggest that the gold standard, unlike EMU, eliminated currency risk.[11]

2.2. Multinational Monetary Unions. Pre-1913 monetary unions, the Latin Monetary Union and Scandinavian Monetary Union, have also been studied in an effort to shed light on these questions. The Latin Union was established in 1866 by France, Belgium, Italy and Switzerland, joined subsequently by Greece. The union treaty specified standard sizes and fineness for the gold and silver coins of the participating countries, guaranteed the acceptability of each member's coins as legal tender for effecting private and public payments in other member states, and attempted to regulate the emission of subsidiary silver coins (with lower specie content) by each union member.

Flandreau (2000), Einaudi (2001) and Helleiner (2003) discuss the members' motivations. These included the desire to simplify international transactions and foster trade, the desire on the part of France to enhance the position of Paris as a financial center by enlarging the domain over which a franc-like monetary unit circulated, and the effort to reinforce French foreign policy by raising the influence of the franc.[12] But the fundamental problem that the Latin Union was designed to solve had nothing to do with

[11] See Bordo and Rockoff (1996) and Ferguson and Schlurarick (2006). Similarly, even if adherence to the gold standard enhanced the ability of governments to issue long-term, domestic-currency-denominated debt securities on international markets, this does not tell us anything about how quickly monetary union might solve this problem. See e.g. Flandreau and Sussman (2005) and Bordo, Meissner and Redish (2005).

[12] Some of these ambitions will resonate with historians of the euro. Certainly the possibility that the euro would encourage intra-European trade figured prominently in discussions of whether to create a single currency. There were also those who suggested that the single currency would encourage the development of a European financial center to rival New York (not that they anticipated that this financial center would develop outside the euro area, namely in London). And, in academic circles at least, there was also the argument that the single currency would encourage political integration and eventually the emergence of a single European foreign policy.

modern arguments for or against monetary unification. The participating countries, led by France, operated a bimetallic system under which they supplemented full bodied large-denomination coinage with less valuable silver coins and, where necessary, subsidiary coinage whose metallic content was less than its face value. Bimetallism required stabilizing the relative price of silver and gold in the face of fluctuations in world market prices. This could be done if central banks paid out the metal whose price was high in return for the metal whose price was low and allow the composition of the domestic circulation change so as to meet changes in the composition of global demand without exhausting the circulation of either metal.[13] While a single bimetallic country, even one as large as France, was too small to exercise this stabilizing influence, doing so be might easier for a collection of countries whose weight relative to world markets was greater. From this flowed the effort to coordinate.

In the event, the Latin Union proved too small to stabilize the world market price of silver. As silver supplies continued to expand, the Latin Union countries were forced to suspend silver convertibility and go onto de facto gold standards. Now the problem shifted to their subsidiary coinage, which they had an incentive to overproduce and circulate in neighboring countries. There followed a series of agreements designed to limit its emission, which proved incompletely effective. The Latin Union treaty was another effort to solve this problem.

In contrast to EMU, then, this was an attempt to create a common monetary circulation without a common monetary authority. There was no central bank at the level of the union. Precisely because policy was not decided by a transnational entity like the European Central Bank, there was more scope than in Europe today for individual

[13] How exactly this worked is the subject of Flandreau (1997).

member states to control their money supplies. Countries were able to produce their own subsidiary coinage in excess of levels specified in the monetary union treaty so long as they could get away with it. They had an incentive to do so, since increases in the circulation drove up prices not just at home but monetary-union-wide.[14] The requirement that the issuing central bank redeem that subsidiary coinage at par or accept it in payment of taxes and other public obligations provided a check, but an imperfect one insofar as collecting large amounts of small coin and transferring it from, say, Paris to Athens was costly. Greece's partners in the Latin Union sought to solve this problem by requiring that all small Greek coins be produced at the Paris mint, but the provision does not appear to have been effective.[15] No analogous free rider problem exists under EMU, since the national central banks participating in the European System of Central Banks have no independent control of the money supply.

Nor does membership in the Latin Union appear to have been as difficult to modify as membership in EMU. Within a few months of ratification of the Latin Union treaty, Italy suspended the convertibility of her banknotes into metal coin and injected into circulation large numbers of small denomination banknotes, contravening provisions of the treaty. The result was increased seigniorage for Italy and inflation for its partners, as Italy's small silver coins flowed into the Latin Union countries.[16] Monetary options under this earlier union were thus quite different than under EMU.

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[14] Equivalently, since the cost of producing subsidiary coins whose metallic content was less than their face value was less than the ability of those coins to command goods and services in neighboring countries.
[15] See Bailey and Bae (2003).
[16] Just why the Latin Union agreement was not more effective and why it was not as constraining as the EMU treaty are interesting questions. My own view is that the LMU treaty was not part of a larger political bargain that involved also commitments on other nonmonetary issues that could be jeopardized by reneging on its monetary provisions (for more on this, see below). Others would say that the LMU treaty was less effective because there was nothing to constrain irresponsible fiscal behavior, which led countries like Italy to pursue policies that heightened their need for seigniorage.

The other prominent 19th century experiment along these lines, the Scandinavian Monetary Union, was in many respects similar. The motivation for its formation was to simplify transactions among the participating states (Denmark and Sweden, joined subsequently by Norway) and to restrain the temptation to engage in excessive emission of currency notes that might also circulate in neighboring countries. The union was formed in the 1870s following Germany's adoption of the gold standard and the concurrently with the shift of the Latin Union countries to gold. Hence the circulation of the participating countries (Denmark and Sweden, joined subsequently by Norway) was based on gold. Gold coins being impractical for small transactions, they were supplemented (in practice dominated) by token coins and notes convertible into gold.[17] From 1873 the three central banks agreed to accept one another's coins at par. From 1894 they agreed to permit the drawing of drafts on one another at par. From 1901 they accepted one another's notes at par.[18] The result was a significant narrowing of the gold points.[19]

Again, however, analogies with EMU are strained because there was no central bank at the level of the union. The three members retained their national central banks and the ability, within the constraints of the gold-bullion standard, to regulate their money supplies. Separate exchange rates continued to be quoted in financial centers like Copenhagen on their respective monies, reflecting the fact that the gold points had been

[17] This, then, was a gold bullion standard, under which notes were backed by the bullion reserves of the respective central banks. This is distinct from a gold coin standard (where only gold coin circulates, obviating the need for the central bank to hold bullion reserves) and a gold-exchange standard, where notes are backed not just with gold bullion but also with convertible foreign exchange.
[18] The Swedish central bank accepted Norwegian and Danish notes at par from the beginning of the union, but Norway accepted Swedish notes at par only from 1894 and Denmark accepted the notes of its partners at par only from 1901. See Bergman, Gerlach and Jonung (1993) and Hendriksen and Kaergard (1995).
[19] See Bergman (1999), p.366 and footnote 5 above.

narrowed but not eliminated. All this is quite different from the current European situation.

What deterred the excessive emission of token coins and banknotes during the period when these were accepted at par? In part the answer is the gold standard; partner central banks could demand conversion into gold by the issuing monetary authority; knowledge of this restrained the temptation to over-issue.[20] Another part of the answer is mechanisms for detecting attempts to renege on the agreement: to prevent debasement, the union agreement provided for regular examinations of national coins and for sharing of information on minting and issuance practices. A final part of the answer is political. Recall that Sweden and Norway maintained a political union from 1814 until 1905. Revealingly, dissolution of that union led the Bank of Sweden to terminate the agreement to accept the notes and drafts of its partners at par.[21] The outbreak of World War I then led national imperatives to the fore and forced the participating central banks to suspend gold convertibility and subordinate the creation of paper money and token coins to the war effort. Sweden threatened to withdraw from the union unless its partners agreed to embargo gold exports, which they quickly did. Even this did not prevent the agreement to accept one another's gold coins at par from being terminated in 1920.

The Scandinavian Union was more durable than the Latin Union.[22] But exit – either partial as in 1905 or complete as during and after World War I – was relatively easy because the participating countries never stripped their national central banks of the power to create money. Indeed, the Scandinavian Union treaty included an explicit exit

[20] Although it did not eliminate that tendency, owing to transactions costs. See also the discussion of this question in the subsection on the Latin Union above.
[21] It continued to accept them at a discount.
[22] This is also the conclusion of de Cecco (1992).

clause, which required members terminating their participation only to give one year's notice (Bergman, 1999, p.365). In this respect as well, the Scandinavian Union was very different from EMU.

2.3. 20th Century Monetary Unions. Previous work has also examined a number of 20th century monetary unions. Examples include the Anglo-Irish monetary union that prevailed from the foundation of the Irish Republic until the creation of the European Monetary System in 1979, the CFA franc zone of francophone West and Central Africa (and one former Portuguese colony, Guinea-Bissau) that has operated for more than 45 years, the Belgium-Luxembourg monetary union that prevailed from the early 1920s until the advent of the euro, the Switzerland-Lichtenstein monetary union, the France-Monaco monetary union, the Italy-San Marino-Vatican City monetary union, the U.S.-Liberia monetary union, and the U.S./Panama monetary union.[23] There have also been attempts to draw lessons for EMU from these experiences. Studies have shown that members of these common-currency groupings trade more extensively with one another than their characteristics otherwise predict.[24] They run lower inflation rates than otherwise comparable countries with national currencies. Their financial markets are unusually integrated. There is little evidence that they exhibit more fiscal discipline than nonmembers (Fatas and Rose 2001).

The problem is that these arrangements are all quite unlike EMU. Typically they are composed of one large country and a much smaller one rather than of several

[23] Rose (2000) provides a catalog of such arrangements.
[24] Although how much more is disputed; see Baldwin (2006). The same qualitative result as obtained in these cross-country comparisons has been found in time series studies of countries forming or dissolving a monetary union (as in the case of Ireland in 1979; see for example Dwane, Lane and McIndoe (2006).

comparably sized members.[25] Policy is delegated to the large member, giving the small member little say. Belgium determined monetary policy for the Belgium-Luxembourg monetary union (subject to Luxembourg's consent).[26] The Swiss National Bank makes policy for the Switzerland-Lichtenstein union. The Federal Reserve Board sets policy without input from the Liberian or Panamanian authorities. Issues of shared governance and of the creation of transnational institutions analogous to the ECB do not arise.

One can reasonably question the generality of inferences drawn from trade, financial and other effects when one country is so small relative to the other. Technically, the problem is that the control group and treatment group are very different.[27] At least this is the problem if one doubts the ability of multivariate regression (where the independent variables include measures of country size) to adequately control for differences in the two groups (Baldwin, 2006).

An unusual case is the CFA franc zone, which includes a number of countries of broadly similar size and where there exist two transnational monetary authorities, one for the West African Currency Union and one for the Central African Currency Union .[28] But countries are restrained from exiting (and their policies are restrained in other ways) by the fact that France provides them with direct assistance and subsidies, partly contingent on their participation in the arrangement. France's ability to do so derives from the fact that its financial system is roughly 30 times the combined size of the financial systems of the CFA franc zone countries; in this sense this system exhibits the

[25] Together with some smaller ones.
[26] An interesting study of this case is Meade (1956).
[27] Unless one limits the latter to country pairs where one member is also very small relative to the other.
[28] See Masson and Patillo (2004) for details. Comoros, and island in the Indian Ocean, has its own currency, the Comoros franc, and its own central bank, although its pegs to the CFA franc and participates in other CFA franc zone arrangements.

same asymmetry as the other monetary unions enumerated above. To be sure, the relationship between France and the members of the CFA zone is not exactly that of monetary union partners. Indicative of this, the CFA franc has been devalued several times against the franc of Metropolitan France, most recently in 1999. France's role in the system means that this case is not particularly useful for drawing analogies with EMU.

2.4. National Monetary Unions. At one level, the most relevant of these imperfect analogies are cases of national monetary unification – how the United States became a monetary union (Rockoff 2006), how Germany became a monetary union (Holtfrerich 1989), how Italy became a monetary union (Toniolo, Conte and Vecchi 2003). These countries all evolved true monetary unions, with a single currency whose availability was regulated by a single central bank. They were more than quasi-fixed-exchange-rate arrangements like the gold standard, the Latin Union and the Scandinavian Union. They all ended up creating central banks at the level of the union that effectively monopolized control of the money supply.[29] All of them eventually abandoned monetary rules like gold convertibility that had relieved the central bank of responsibility for making policy decisions.[30]

At another level, however, these national cases lack the distinguishing feature of EMU, which is monetary union in the absence of political union. In Europe today there exists a central bank whose domain is wider than that of the national political institutions whose consent was required for its creation and continued existence. The United States

[29] "Effectively" because a number of private banks retained limited note-issuing powers in Italy significantly into the post-unification period.
[30] In these respects the analogy with EMU is direct. Hence these are the type of cases on which I focus for much of Section 3 below.

and Germany have (or had) a federal government and a central bank at the level of that federation. Europe possesses the central bank but not the federal government.[31]

This is not simply EMU's distinguishing feature but also the source of its most fundamental challenges. How can the ECB be held socially accountable for its decisions in the absence of an equally consequential political counterweight at the level of the monetary union?[32] In the absence of political federation, how can the fiscal policies of the member states be restrained? How can a monetary union work in the absence of a federal government with an economically consequential budget to effect stabilizing transfers across member states?

History offers few useful answers. Some observers argue that monetary union without political union is not viable in the long run, either because the answers to the preceding questions are negative on a priori grounds or because evidence shows that monetary union not accompanied by political union tend to be unstable.[33] My own view is that history does not demonstrate any such incompatibility because the combination has never been tried. History provides no useful evidence one way or the other.[34]

3. Highlighting Differences

I have argued that historical experience with monetary unification is quite different from EMU. Where that history is useful, therefore, is in identifying what is

[31] This is not to overlook the existence of political institutions like the European Commission and European Parliament at the level of the EU or the emergence of proto-European politics (Hix, Noury and Roland 2007). But the degree of centralized decision making characteristic of true political federation is still far off in the case of Europe.
[32] The argument is that the European Parliament lacks gravitas and in any case is the representative body of more than two dozen EU members, not just those participating in the monetary union.
[33] The analytical and historical arguments are advanced by DeGrauwe (2006) and Bordo (2004), respectively.
[34] Again, the point is that EMU is sui generis.

distinctive about Europe's 21st century monetary union. I now illustrate the point with reference three issues concerning the operation of Europe's monetary union: implications for financial integration, provision of the financial stability function, and exit and dissolution. In the first two contexts I contrast EMU with the experience of the United States.[35] In the last one I look at the collapse of the Austro-Hungarian Empire, a case that has attracted considerable attention.

3.1. Financial Integration. I first show that the connections between financial integration and monetary union are different in 21st century Europe than in earlier historical cases. I do so with reference to the experience of the United States in the 19th century.

The relevance of the American case derives from the fact that, as in Europe today, the task was to build a monetary union and an integrated financial market that were continental in scope. Physical distance posed a challenge for monetary and financial integration (Snowden 1995), as did cultural and institutional differences between north and south (Wright 1986).[36] Different levels of development (lack of cohesion in EU parlance) implying excess supplies and demands for capital and therefore large capital flows and current account balances – placed further demands on the financial system.

The Constitution had prohibited the states from issuing paper money and gave Congress the exclusive right to "coin money."[37] The United States thus entered the post-confederation period with a monetary union based on specie. But the convenience of paper money was irresistible. Where the Constitution had prohibited state governments

[35] Which I have argued previously is a particularly revealing national case. See Eichengreen (1992).
[36] Not to mention limited labor mobility.
[37] Why is debated. Rockoff (2003) argues that the motivation was to restrain inflationary tendencies in the Western states. Rolnick, Smith and Weber (1993) suggest that it was to encourage trade within the new federation.

from issuing notes, it did not prevent commercial banks from doing so. This they began doing, especially once the charter of the Bank of the United States was not renewed.[38] Had those notes always been convertible into specie at par, the resulting system would have been no different from a conventional gold-bullion standard in which the circulation of gold coin was supplemented by convertible paper. In practice, however, convertibility of notes was less than assured – the states relaxed restrictions on bank entry, allowing fly-by-night operators to obtain charters and emit inadequately backed notes that traded at a discount.[39] In effect, the U.S. had two monetary systems: a unified system of coinage based on specie, and a fragmented paper system in which the notes issued by banks in different states traded at variable exchange rates against one another.[40]

Markets and institutions responded with mechanisms for dealing with the information and transactions costs associated with incomplete monetary integration. Banks in New England formed the Suffolk System to clear drafts at par, sharing information and imposing sanctions and rewards to make par clearing incentive compatible.[41] Other banks built reputation by cultivating correspondent banking relationships with institutions in regional financial centers, holding deposits with them in return for par clearing of their notes. Circulars known as "note reporters" listed the discounts at which different banknotes traded in different financial centers, easing the conduct of business.

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[38] As Bodenhorn (2000, p.169) explains, the Second Bank under Nicholas Bibble possessed a large volume of state bank notes and used them to discipline those banks by threatening to redeem them or actually doing so if a bank showed signs of emitting excessively and allowing its notes to trade at a significant discount. With the expiry of the Second Bank, this mechanism no longer operated.

[39] See Rockoff (1974) and Rolnick and Weber (1983).

[40] Again, this was not the case in the 1820s, when Biddle oversaw the operations of the Second Bank. Under his direction, the Bank integrated the operation of its branches. Acting as a quasi-central bank, it then used that branch network to purchase and sell inland bills of exchange at a fixed price, effectively pegging interregional exchange rates. See Fraas (1974).

[41] Bodenhorn (2002) questions the incentive compatibility of the system.

The severity of the obstacles that all this posed to the integration of U.S. financial markets is the subject of ongoing debate.[42] The key point for present purposes, and on which there is no dispute, is that U.S. financial markets remained much less integrated than European financial markets today – even after residual barriers to full monetary integration dissolved following the Civil War.[43] While there was convergence over time – according to the conventional wisdom, from the 1870s – interregional interest rate differentials on bank funds of 100 basis points and more remained unexceptional. These large and persistent interest rate gaps were an order of magnitude larger than those under EMU.[44]

The explanation lies in a set of factors that were quite different than in the euro area. The risks of banking differed more dramatically across regions than today, and banks had more limited mechanisms for diversifying them away. Default rates were higher in the agricultural west, where knowledge of temperature and precipitation patterns was imperfect and much of the population was transient.[45] Regulation prohibited banks from branching across state borders and lending out of state. Barriers to entry, both regulatory and economic, were significant, rendering some regions underbanked and giving incumbent financial institutions significant market power.[46] There was no efficient, centralized clearing and settlement system. There was no modern interbank

[42] The traditional argument, due to Davis (1965), is that the domestic financial market was fragmented until the very late 19th century. Bodenhorn and Rockoff (1992) and Rockoff (2000) are two of the very few studies to look explicitly at ante-bellum data. They argue that financial integration traced out more of a u-shaped pattern over time: reasonably high prior to the Civil War, then low during the Reconstruction period as a result of wartime destruction of financial institutions and relationships, and gradually rising to ante-bellum levels and presumably beyond up to the turn of the century.
[43] Following the Civil War, new taxes and restrictions on state bank note issues were imposed, and par clearing of the notes issued by more stringently-regulated national banks became the rule.
[44] See Lane and Walti (2006) and Baele et al. (2004). ECB (2007), especially pp.24-5, provides an analysis of country differences in bank interest rates that is most directly comparable to the historical evidence discussed here.
[45] As emphasized by Smiley (1975) and Eichengreen (1994).
[46] As emphasized by Sylla (1969).

market. There was no integrated commercial paper market. Rather than a single, centralized stock market, there were a set of segmented regional markets.

With time, financial innovation, including regulatory innovation, responded to these imperfections. Capital requirements, which were a significant obstacle to entry in small markets in particular, were reduced for country banks.[47] Information accumulated about the determinants of agricultural yields, and financial institutions developed mechanisms (inter alia, sending loan officers into the field) to more effectively monitor their clients. There was some diversification of regionally-concentrated portfolios, as mortgage companies in the west sold portfolios of mortgages to insurance companies in the east.[48] Some mortgage companies further spread the risks of lending by issuing mortgage-backed securities.[49] Bill brokers took commercial paper on consignment from wholesale grocers, manufacturers and others, offering it to potential buyers, including out-of-town banks and individual investors. They formed correspondent relationships with brokers in other cities to facilitate the collection and resale of bills. The development of commercial paper houses, which purchased commercial paper outright and then offered it in secondary markets, thus bringing together lenders and borrowers from different regions, played a key role in integrating the market.[50] With the telegraph

[47] Most notably under the provisions of the Gold Standard Act of 1900.
[48] See Snowden (1995a).
[49] Afficionados of the "subprime crisis" will appreciate knowing that many of these securities then lapsed into default with the rural property downturn of the 1890s. Many of the Western mortgage companies failed in the course of this crisis, not unlike subprime lenders in 2007. On the history of mortgage-backed securities in the United States, see Snowden (1995b).
[50] See Davis (1965) and Janes (1976). This is another context in which the debate over timing arises. Whereas Davis emphasized the development of commercial paper houses in the 1880s, Bodenhorn (2000) emphasizes that those houses did not simply materialize at that point; rather, the developed out of the network of exchange brokers that was already active before the Civil War (see above). His amendment to the conventional wisdom only reinforces the present point, namely that financial integration was long in developing.

and the decline in information and communication costs, there was arbitrage among regional stock markets and competition between banks and security markets.[51]

These are the explanations for how it was that regional interest rate differentials showed a tendency toward convergence in the decades leading up to World War I. Historians disagree about when a substantially integrated national money market developed – in the 1870s and 1880s, in the first decade of the 20th century, in some accounts only following the foundation of the Fed. Still, the striking fact is that these differentials remained substantial for many years following the completion of the country's monetary union. Unlike Europe today, monetary unification did not catalyze an immediate and dramatic increase in financial integration.

On reflection, the explanations for this difference are obvious enough. Suspicion of financial markets and institutions with national scope was an abiding characteristic of the United States in the 19th century. This explains Jacksonian opposition to the First and Second Banks of the United States, restrictions on inter-state branching, and the absence of a central bank until the 20th century. Regulation did as much to segment financial markets as to integrate them, and its effects were not easy for market forces, even invigorated by monetary integration, to overcome. There was no attempt to build a centralized clearing and settlement system. There was no lender of last resort to provide liquidity to securities markets and banks. There was no public-policy argument that an integrated financial market was needed to support the monetary union.

In contrast, European policy makers today see financial integration as an achievement in and of itself and a foundation stone of monetary union. Financial integration is not something to be avoided on the grounds that it allows those in the

[51] This is the factor emphasized by Sushka and Barrett (1984).

financial centers to exploit their brethren in low-income regions (the complaint of Populists in 19th century America). Rather, it is something to be sought as a way of fostering growth and convergence. Financial integration is also seen as buttressing support for monetary integration, insofar as financial integration is conducive to efficiency and growth and as a backlash against EMU is more likely in a low-growth, high-unemployment environment.

Efforts to encourage financial integration go back to the Single European Act, if not before; in other words, they preceded monetary union by 15 and more years. Among the corollaries was the removal of restrictions on cross-border branching by existing financial institutions and on cross-border mergers and acquisitions. European policy makers similarly saw the creation of TARGET, Europe's wholesale payments system, as an integral corollary of monetary union.[52] Another integral element of the monetary union was a central bank with a mandate to contribute to the stability of the payments system by providing emergency liquidity assistance.[53] As recent events remind us, the fact that the euro area has an active, liquid interbank market through whose operation the cost of bank funds is equalized across countries and regions is due in no small part to the fact that this market is backstopped by the central bank. Pro-active policies in this area continue. The European Commission has issued a Green Paper detailing measures to promote the integration of national mortgage markets. The Giovannini Group has recommended simplifying cross-border securities clearing and settlement so as to facilitate the emergence of an integrated securities market.

[52] The launch of TARGET2, an enhanced successor to TARGET, is timed to coincide with our conference.
[53] For more on this, see the second subsection below.

There has been considerable discussion in Europe about how quickly monetary union will deepen financial integration. The issue is important, but it is not one on which historical experiences like that of the United States in the 19th century can shed much light, because the economic, political and regulatory circumstances are all quite different.

3.2. The Financial Stability Function. Next I examine the experience of the United States in the Great Depression in order to highlight what is different about the financial stability function in the European System of Central Banks.

The role of the banking crisis in the spread of the Depression and the failure of the policy response were famously highlighted by Friedman and Schwartz (1963). That failure had multiple sources, but one was that the framers of the Federal Reserve Act were ambiguous about the locus of responsibility.[54] Under the 1913 Act, reserves were held by the regional reserve banks, which could then provide credit to commercial banks operating in their region, up to the limit consistent with their holdings of reserves, via the discount window. Notes injected via the discount window (or for that matter via open market operations) had to be backed with 40 per cent gold. The remainder of the collateral could take the form of eligible paper, defined as commercial, agricultural and industrial paper and bankers' acceptances ("real bills").

But the 1913 Act was ambiguous about the roles of the reserve banks and the Federal Reserve Board in determining the rates charged for discounts and advances.[55] The relevant passage read that "Every Federal Reserve Bank shall have the power…to establish from time to time, subject to review and determination of the Federal Reserve

[54] This changed with the passage of the 1935 Banking Act, which definitively consolidated authority with the Board, but that episode is beyond the parameters of the present analysis.
[55] Even more ambiguously, nothing was said about responsibility for the conduct of open market operations, since their importance was not anticipated by the framers.

Board, rates of discount to be charged by the Federal Reserve bank for each class of business." In January 1915 Reserve Bank governors formed the Governors Conference to defend their prerogatives against encroachment by the Board. The outcome of their deliberations, predictably, confirmed the right of each regional bank to decide its own operations (Meltzer, 2003, p.142).[56]

In 1923, Adolph Miller, the economist on the Board, tabled a proposal to empower the Board to control the intervention policies of the Reserve Banks. Again the Reserve Banks resisted the recommendation. In response to Miller's proposal, an Open Market Investment Committee of five governors (led by Benjamin Strong of the New York Fed) was created to direct the intervention policies of the System, but individual Reserve Banks retained the right to opt out, as insisted on most vocally by James McDougal of the Chicago Fed.

In March 1930, the Open Market Investment Committee was replaced by the Open Market Policy Conference. All 12 Reserve Bank governors were represented, this reform being designed to reduce what other banks complained was the excessive influence of the New York Fed. But again it was unclear whether the banks were obliged to accept the recommendations of the Conference and execute its instructions. The 1930 resolution creating the Open Market Policy Conference stated that recommendations of the Conference, when approved by the Board, should be submitted to each Reserve Bank "for determination as to whether it will participate in any purchases or sales recommended; any Federal Reserve bank dissenting from the proposed policy shall be expected to acquaint the Federal Reserve Board…for the reasons for its dissent." "Acquaint" was ambiguous in this context, but evidently individual banks were still

[56] It was also agreed to execute those operations in the central money market, New York.

entitled to decline to engage in interventions recommended by the Open Market Policy Conference and the Board.

When it came to supervision and regulation, the Board had the power to conduct special examinations of member banks, but for information on where special examinations were required it relied on the Reserve Banks, which were in more regular communication (and were also allowed to examine) member banks in their districts. At the outset, the Office of the Comptroller of the Currency also conducted twice-yearly examinations of all national and state member banks, but the Comptroller was jealous of his prerogatives and instructed examiners not to provide the Federal Reserve with all the information they collected. Resentment of these actions led the Congress to strip the Comptroller of responsibility for examining state member banks in 1923, but this left the banks subject only to the oversight of state inspectors, the quality of whose supervision was variable (White, 1983, p.166 and *passim*).

This combination of decentralization and ambiguous responsibility undermined policy coherence. The Reserve Banks in their role as gatherers of intelligence on the local financial system did not provide accurate information in timely fashion to the Board in Washington, D.C. (The same could be said of the Office of the Comptroller until the mid-1920s.) This was less a conscious attempt on the part of the Reserve Banks to increase their power by withholding information than a reflection of the view that if intervention was required it should be organized by the a Reserve Bank and not the Board. State banking agencies responsible after 1917 for inspecting state member banks were even less efficient at passing information to the Board, given that this had to first be

communicated to a Reserve Bank and from there to Washington, D.C. The result was that the Board knew too little about the condition of the banking system.

Most importantly, disagreements among Reserve Banks over lender of last resort intervention compounded the difficulty of the System in providing financial assistance to problem banks and liquidity to distressed markets.[57] The New York Fed, attuned to liquidity problems in the New York market, decided on its own to inject $100 million in the wake of the 1929 crash in order to assist banks that had taken stocks as collateral against loans.[58] Although the majority of the Board approved of the intervention, it objected to New York having acted without prior authorization. The New York Fed was threatened with various consequences if, in the future, it did not secure authorization for similar action. Although if this did not necessarily prevent Reserve Banks from intervening – they were still permitted to do so with prior authorization and unilaterally in the event that the Board was not available – it created uncertainty about how the system would respond.[59]

A more extreme example was the third banking panic in early 1933. By late February, this had risen to the level of a run on the U.S. banking system. Intervention was essential to prevent the payments system from seizing up. But the New York Fed,

[57] In reviewing these ideological disagreements about the desirable extent of liquidity provision, one is reminded about differences between the ECB and the Bank of England in August 2007 – when the Bank of England took a harder line, at least initially, about the danger of moral hazard and was therefore more reluctant to intervene. The difference then was that no one was constrained in intervening by the availability of gold reserves. The ECB could therefore proceed unilaterally, and problem banks in the UK could turn to it, as those with euro-area branches in fact did.

[58] And which therefore experienced withdrawals from correspondent banks in the interior of the country that had placed deposits with them.

[59] Friedman and Schwartz (1963) and Meltzer (2003) disagree on the nature of the conflict and its consequences. Friedman and Schwartz argue that the New York Fed curtailed its operations due to criticism from the Board that these would aggravate moral hazard – together with the threat of consequences if New York officials failed to comply. Meltzer argues that there was no real difference between the New York Fed and the Board over appropriate policies but that the Board was concerned to establish its prerogatives.

which had disproportionately borne the burden of earlier interventions, saw its gold-reserve ratio fall to the statutory minimum of 40 per cent on March 4th. Providing emergency liquidity now required intervention by other regional reserve banks; equivalently, intervening in the central money market required other Reserve Banks to transfer gold to the New York Fed.[60] But the Chicago Fed, which by this time was the principal repository of the system's gold reserves, was reluctant. Together with the Boston Fed, it emphasized the dangers of moral hazard; the two banks had repeatedly warned that providing emergency liquidity might only encourage another round of stock market speculation leading to an even more devastating crash. On March 1st the Chicago Fed had lent $105 million to its counterpart in New York. But on March 3rd it withdrew its cooperation. On March 4th the Board declined to compel the Chicago bank to support New York, and the New York Fed curtailed its intervention in the markets. The situation deteriorated further, leading the Board to reverse its decision three days later. But by this time the damage had been done.

The situation in Europe today differs extensively. The ECB is not constrained in providing emergency liquidity by any remaining vestiges of the gold standard. The closest analogy is with the central bank's commitment to stabilize the general price level.[61] From the start there have been worries that fixation on this mandate might lead the ECB to neglect its other responsibilities.[62] But in fact that mandate is multi-faceted: the central bank is also responsible for contributing to the stability of the payments and financial system. It does not have to keep core inflation below 2 per cent week by week,

[60] Alternatively, it would have been possible to suspend the statutory gold backing provision or take a variety of other exceptional measures, but this was not something that officials were yet prepard to broach.
[61] As opposed to a specific component of that price level, namely gold.
[62] In fact, even before the start: such warnings go back to Folkerts-Landau and Garber (1992).

day by day, or hour by hour. If emergency liquidity creates inflationary pressure, it can be drained from the financial system subsequently. The knowledge that interventions with inflationary consequences will be reversed out should minimize those inflationary consequences in the first place, assuming the credibility of the ECB's commitment to price stability. Thus, the ECB can be thought of as possessing the stabilizing escape clause that the Fed and other interwar central banks lacked.

The Eurosystem has simulated a variety of crisis scenarios. An April 2006 simulation exercise, for example, involved representatives from all EU banking supervisory authorities, central banks and finance ministries. The results "indicated that the relevant Member State authorities were able and willing to cooperate in managing cross-border systemic financial crises" (ECB, 2006, p.173).

Of course, one can question whether an exercise where the stakes are hypothetical and the participants know that they will be judged on their cooperation is a useful predictor of how they will act in true crisis situations. But we now possess evidence on this, courtesy of the subprime crisis. The precipitating event of the crisis was the revelation at the beginning of August of large losses at IKB Deutsche Industriebank, a prominent small-company lender. The German financial regulator Bafin, the German finance ministry, and the Bundesbank swiftly cobbled together a $5 billion rescue package.[63] While this intervention did not eliminate questions about the adequacy of risk standards at other German banks, it prevented runs.

[63] With the participation of private banks as well as public Landesbankenand and Sparkassen. One reason for involving private banks was to minimize the likelihood that the rescue would be found to conflict with the EU's anti-subsidy laws. In the event, the Commission quickly announced that it would examine the rescue's compliance with those regulations. Note that the decision to aid a bank that lacks the collateral needed to tap the ECB's standard facility (the ECB's equivalent of the Fed's discount window) resides with the national central bank of the relevant jurisdiction. That national central bank is required to inform the other members of the Eurosystem of its actions so that, inter alia, the ECB can adjust the provision of

Then on August 10th, in response evidence of stringency in the interbank market, the ECB injected E95 billion of liquidity in the first of a series of special tenders.[64] These took the form of reverse repurchase agreements under which the ECB lent funds to commercial banks against eligible collateral.[65] Initially the ECB provided funds at its policy interest rate of 4 per cent without limit. A series of further such operations followed. On September 27th, for example, the ECB granted a $5.5 billion loan to an unnamed borrower, again through its standing facility, against collateral, using an overnight reverse-repo transaction. In December the ECB agreed to coordinate further liquidity auctions with the Fed and the Bank of England.

Europe's response to the crisis remains controversial. But while there were sporadic reports of depositors queueing up at banks (in Spain for example, and outside the euro area at offices of Northern Rock), there were no widespread bank runs. There was no cascade of defaults. The ECB's response was not obviously delayed by the failure of regulatory authorities to convey information about the delicate condition of financial institutions and markets.[66] There was no 1933-style scenario.

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liquidity to limit the potential impact on monetary policy. One can imagine a national central bank ideologically opposed to the provision of emergency assistance might refuse to aid a bank in its jurisdiction even when the ECB and other national central banks were concerned about the implications for systemic stability. One can imagine that, even in the absence of ideological considerations, emergency liquidity assistance might be underprovided if the adverse effects of that bank's failures were felt in other jurisdictions. But one can also argue that there is nothing unique to EMU about these problems: cross-border banking is widespread in the 21st century; such structures and therefore the associated externalities are not limited to Europe. That said, the fact that the EU has gone further in promoting the development of an integrated financial market suggests that, qualitative similarities notwithstanding, the problem is probably more pervasive in Europe.

[64] This was its first emergency injection of liquidity since September 12 and 13, 2001, when the ECB had injected E100 billion of liquidity in the aftermath of the attack on the World Trade Center in New York.

[65] Which was then repurchased the next day, at the agreed price, by the counterparty.

[66] This is not to deny that inadequate information was a problem for crisis management. But the problem was that all of the relevant regulators were incompletely informed about, inter alia, the position of conduits and Specialized Investment Vehicles (SIVs) to which commercial banks had off-balance-sheet exposures. A unified regulator at the level of the monetary union would have been little different in this regard.

In anything, the problem lay not in the ECB's capacity to respond to the crisis but with the ability of European authorities to anticipate it.[67] Padoa-Schioppa (2007) criticizes supervisors for failing to failing to see the crisis developing, for failing to share critical information before it erupted, and for failing to hold emergency meetings. Supervisors, he argues, adopted narrowly national perspectives and resisted pooling the information needed to anticipate problems in transnational banks and contagion through interbank markets. Although the EU possesses common principles for bank supervision, those principals are implemented in different ways by different national supervisors overseeing local branches of the same banking group. There is also a race to the bottom insofar as supervisors have an incentive to apply common standards forgivingly in order to make their market attractive to footloose financial institutions.

But Padoa-Schioppa also suggests that Europe possesses arrangements and understandings capable, if suitably strengthened, of solving these problems. Discussion of these issues dates back to 2000, when the Economic and Financial Committee (or EFC, established by treaty to advise the ECOFN Council and the Commission) established an ad hoc "Financial Stability Table" comprised of finance ministry and central bank representatives. In April 2000 the EFC recommended measures to strengthen cross-sector cooperation, enhance the exchange of information among responsible authorities, reinforce cooperation between supervisors and central banks, and foster the convergence of regulatory practice. Its conclusions were quickly endorsed by ECOFIN. A second report in April 2001 offered three specific recommendations. Supervisors should adopt measures ensuring their access to accurate information (from large financial groups, in

[67] The ECB's June 2007 *Financial Stability Review* had in fact anticipated at least some of the problems that followed.

particular) and establish contingency plans. Member states should remove legal and practical obstacles to the exchange of information among supervisors and central banks. And there should be ex ante agreement on who would do what in a crisis situation.[68]

These recommendations informed the EU-wide Memorandum of Understanding (MOU) on cooperation in crisis situations adopted under the auspices of the ESCB's Banking Supervision Committee (BSC) in March 2003. This MOU set out procedures for identifying which authorities were responsible for taking the lead in a crisis situation, enumerated the required flows of information between supervisors and central banks, and specified modalities for information sharing.[69] A second MOU in 2004-5 provided a more detailed description of procedures for sharing information and assessments.[70]

None of this is to deny that more needs to be done to strengthen the supervisory function so that nascent threats to financial stability in the monetary union are more effectively anticipated. Padoa-Schioppa argues against creating a single European supervisor, in parallel to the ECB, suggesting instead that existing arrangements should simply be strengthened. Specifically, there should be more uniformity in the application of EU regulations and more systematic information sharing. Again, the situation ten years after the creation of the euro is very different from the situation in the United States

[68] In addition, there was a fourth recommendation: competition authorities were called on to "maintain timely and robust procedures" for considering the competitive implications of crisis-management efforts. The issue here was whether public credit or a public takeover of a distressed institution might violate anti-subsidy provisions of the single market. I cite an example of this below.

[69] Including a list of emergency contacts.

[70] One could go on. In addition there exist a series of bilateral and regional agreements for managing financial crises arising out of problems in banks with cross-border establishments. Beyond that, there are EU Committees (the EFC, BSC, Committee of European Banking Supervisors, and Financial Services Committee), all of which include banking supervisors, central bank officials, and/or representatives of finance ministries that provide venues for ad hoc information sharing. A number of these bring together European officials from both inside and outside the monetary union, which is helpful insofar as cross-border establishment and other links do not respect the borders of EMU. Finally, the Eurosystem itself has formed committees of ECB and national central bank officials in order to establish operational procedures for dealing with financial disturbances.

ten years after the creation of the Fed, when there was open hostility among competing supervisors.

3.3. Exit and Dissolution. Finally I discuss the disintegration of the Austro-Hungarian monetary union and how it should make us think about the possible dissolution of EMU.

Elsewhere I have analyzed the barriers to exit facing an incumbent member of the euro area struggling with problems of competitiveness and high unemployment.[71] My argument emphasizes procedural obstacles to exit. There may be economic costs, but it is not clear ex ante that these will dominate the benefits. The main such cost is likely to be the increase in debt service if investors anticipate that exit will be followed by chronic deficits. However, countries can minimize and may even be able to eliminate that increase if they take their exit from the euro area as an occasion to strengthen fiscal institutions and procedures. Similarly, there may be political costs – a member state unilaterally abrogating its EMU obligations will not be welcomed at the table where EU policies are made. But it is not clear that such international political considerations dominate domestic political pressures, especially in periods of high unemployment.

In the end, the binding constraints are likely to be procedural. In a democracy, the decision to exit will require discussion. Executing it will require planning. Computers will have to be reprogrammed. Vending machines will have to be modified. Payment machines will have to be serviced to prevent motorists from being trapped in subterranean parking garages. To prevent counterfeiting, high-quality notes and coins

[71] See Eichengreen (2007). The case of a country that abandoned the monetary union over dissatisfaction with excessive inflation is more complicated to think about. This is discussed in the revision to the aforementioned paper (available from the author on request).

will have to be printed, imported, and positioned around the country. One need only recall the elaborate planning that preceded the introduction of the physical euro.

During the transition to the euro there was little reason to expect changes in exchange rates and thus little incentive for currency speculation during the period when discussion and planning were underway. In 1998 the founding members of the euro area agreed to lock their exchange rates at the then-prevailing levels as of the beginning of 1999. This effectively ruled out efforts to manipulate currencies in order to steal a competitive advantage prior to the locking of parities in 1999. In contrast, during a period when the reintroduction of the national currency is discussed, changes in exchange rates would be viewed as all but certain, since the very motivation for leaving would be to change the parity.

Market participants would be aware of this fact. Households and firms anticipating that domestic deposits would be involuntarily converted into, say, lira, which would then depreciate against the euro, would shift their deposits to other euro-area banks. In the worst case a system-wide banking panic would ensue. Investors anticipating that their claims on the Italian government would be redenominated into lira would shift into claims on other euro-area governments, causing a bond-market collapse. Insofar as the precipitating event was a government decision to abandon the lira, the ECB would not be inclined to provide lender-of-last-resort support. And if the government was already in a tenuous fiscal position, it would not be able to borrow to bail out the banks and buy back its debt. This would be the mother of all financial crises.

History, specifically in the form of the dissolution of the Austro-Hungarian Empire, is invoked by those who argue that the problem is not so difficult (see e.g.

Dornbusch 1992 and Garber and Spencer 1994). Austria, Hungary and the other ethnic regions of the empire all successfully introduced national currencies following World War I. Previously they had operated a formal monetary union, with control of the circulation vested in the Austro-Hungarian bank in Vienna. The component parts of the empire constituted a free trade zone, and both real and financial integration were extensive. At the same time, like EMU today, constituent states (Austria and Hungary) decided on separate budgets while contributing to some of the expenditures of the union.[72]

Ethnic demands for autonomy boiled up during World War I. Vienna, occupied elsewhere, lost the capacity to assert its control over non-Austrian parts of the empire. Other regions held back food supplies, disrupting the operation of the internal market. Czechs and other ethnic groups withdrew from the military alliance, siding with the Allies. With the armistice, the Czechs, Poles and Hungarians declared their political independence and sought to establish and defend their national borders. They also abandoned prior restraints on their fiscal policies, partly owing to postwar exigencies, partly in reflection of the value they now attached to political sovereignty.

Importantly, however, the Austrian crown remained the basis for the monetary circulation throughout the former empire.[73] This was awkward for separate sovereign nations that did not share the seignorage, experienced asymmetric shocks, and suffered from chronic fiscal and financial imbalances. Starting with Czechoslovakia and the

[72] Flandreau (2005) describes how budgetary autonomy was granted Hungary in 1867 in order to damp successionist pressures.

[73] In Poland, rubles and German markets circulated alongside Austrian crowns, while in the Kingdom of Serbs, Croats and Slovenes Serbian dinars, Montenegran perpers and Bulgarian leva circulated along side the crown. But these cases were exceptional.

Kingdom of Serbs, Croats and Slovenes (Yugoslavia), one successor state after another left the monetary union and introduced a national currency.

Typically, this involved first announcing that only stamped Austrian banknotes would be acceptable in transactions. Stamping (either overprinting with an ink stamp or adding a physical stamp) had to be conducted carefully, with a high level of uniformity, to discourage forgery.[74] At the same time the currency was stamped, a portion was withheld as a capital levy (as a way of transferring desperately needed resources to the government). In Hungary, for example, 50 per cent of tendered notes were withheld as a forced loan. In Czechoslovakia, the 50 per cent tax was applied to current accounts and treasury bills when these were redenominated in stamped crowns.

In turn this created an incentive to withhold currency from circulation if there were prospects of using it in other countries where stamping had not yet taken place. Thus, there was an incentive for capital flight not unlike that which might afflict an inflation-prone country today that chose to opt out of Europe's monetary union. Stamping was therefore accompanied by physically closing the country's borders and comprehensive exchange controls. Individuals were prohibited from traveling abroad, and merchandise trade was halted. The capital levy, equivalent to depreciation of the new currency against the old one, could also precipitate a run on the banks, as it did in Czechoslovakia. In Austria, which could observe Czechoslovakia's earlier experience, bank securities and deposits were frozen at the outset of the transition.

One interpretation is that this history demonstrates the feasibility of exiting from a monetary union and (re)introducing a national currency. But in these historical cases,

[74] Forgery was still a significant problem. In the case of a European country that sought to reintroduce its national currency, it would similarly be necessary to contract for the production of high-quality bank notes relatively immune from forging, which would add to the time involved in the transition.

avoiding serious financial dislocations required closing the borders, banning foreign travel, halting merchandise trade, and imposing draconian exchange controls while the conversion was underway. The feasibility of similar measures today is dubious. Exchange controls would be difficult to enforce in a European country with a highly developed financial system that is the host and home of international banks. Given the development of the single market, suspending foreign trade would be prohibitively expensive. Residents would not stand for a ban on foreign travel. And then there are the country's other obligations to the single market. Exit would be relatively attractive if the country exiting the monetary union did not lose the other privileges of EU membership. But that it would have to interrupt the free movement of goods and services suggests that its partners in the single market would not be inclined to look the other way.

All this suggests that circumstances today are quite different than those following World War I. In today's more financially developed economies, freezing bank accounts and halting credit transactions would have higher costs. In long established democracies, where citizens are accustomed to traveling freely, the acceptability of closing borders is questionable. The costs of disrupting merchandise transactions would be greater than a century ago. Again, this history is useful not as a parallel or precedent but precisely for illustrating what is different about current circumstances.

A more recent historical precedent, with similar implications, is the *corralito* imposed in Argentina when one-to-one peso-dollar parity was abandoned in 2001.[75] The end of "convertibility" was not the same as reintroducing a national currency, since the peso had never been withdrawn from circulation. But discussions of the possibility that the currency might be devalued after a ten year period in which the one-to-one parity had

[75] "Corralito" being Spanish for little corral.

been treated as sacrosanct, together with the fact that bank deposits and other financial claims were denominated in dollars, created analogous problems for the Argentine authorities.

The Argentine crisis and the policy response have been extensively documented.[76] The authorities first suspended trading in their bonds. On December 1st, 2001, in order to stop the hemorrhage of deposits out of the banking system precipitated by the impending devaluation, they froze all bank accounts, initially for 90 days.[77] No withdrawals from accounts denominated in dollars were allowed without agreement to convert the proceeds into pesos. Cross-border transfers were limited to trade-related transactions.[78]

In fact, news of the freeze only accelerated the withdrawal of deposits by corporations and individuals able to circumvent its provisions. Depositors filed lawsuits in the effort to access their funds, and in several cases the courts decided in their favor. Protests and demonstrations, some violent, then led to the resignation of President Fernando de la Rua on 21 December. A five-day bank holiday ensued. De la Rau's second interim successor, Eduardo Duhalde, announced further bank holidays and hardened the *corralito*, requiring the compulsory exchange of many deposits for bonds denominated in pesos. On January 11th 2002 the government lifted its three-week ban on foreign exchange transactions, but the *corralito* remained in place.

On February 1st, the Argentine Supreme Court ruled against the restrictions on deposit withdrawals in response to claims filed by individuals.[79] In response, the government declared another bank holiday. At the end of the holiday the authorities

[76] See for example Mussa (2003). On the corralito itself, see Lopez (2002).
[77] They permitted only very small withdrawals, initially 250 pesos a week.
[78] And international credit card clearing.
[79] Previously the court had ruled in favor of the restrictions, but justices had been subjected to continuous public demonstrations and threats of impeachment proceedings by the Congress.

announced a new plan, which entailed the conversion of all debts into pesos at a 1:1 parity; conversion of dollar deposits into pesos at a 1.4 parity; the transfer of government bonds to banks that had suffered balance sheet damage as a result of differential conversion rates on bank deposits and assets; and a 180-day embargo on legal actions against the deposit restrictions. Further adjustments to these measures followed in February, March and subsequently. The last vestiges of the *corralito* were only eliminated in December 2002, fully a year after its imposition.

This was an exceptionally messy and costly episode. It disrupted the operation of the payments and financial system for the better part of 12 months. To be sure, the *corralito* was only one factor in Argentina's economic collapse. And it is possible to suggest that restrictions on deposit withdrawals, the conversion of foreign currency debt into local units, and limits on capital-account transactions could have been applied in a less chaotic manner. But the fact is that as soon as agents get wind of the government's intentions, they will act, requiring the authorities to respond before they are ready. There will be pressure to treat debtors and creditors differently when converting assets and liabilities into local currency. In turn this will require compensating the banks, a decision that will require further deliberation, during which the payments system will remain frozen.

There is no avoiding the conclusion that the process would be costly and disruptive. And, in turn, this makes it unlikely that a disaffected euro-area member would abandon the monetary union.

4. Conclusion

Everyone has a favorite quote about the uses and misuses of history. Mine is "History is the science of what never happens twice."[80] The point is that those drawing parallels should proceed cautiously.

The point applies to the search for lessons for EMU from the classical gold standard, multinational monetary unions in the 19th and 20th centuries, and experience with monetary unification at the national level. EMU is different. It is not like the gold standard, which left room for fluctuations in the exchange rates between participating countries and from which members could and did exit at will. It is not like multilateral monetary unions in the 19th century under which there was no centralized control of money supplies by a transnational central bank. It is not like the monetary union inherited by the successor states of the Austro-Hungarian empire, from which exit was straightforward because of relatively low levels of financial development and the ease of freezing transactions and sealing borders during the period when national currencies were being (re)introduced. It is not like national experiences with monetary unification, precisely because these were virtually all cases where political unification preceded monetary unification.

Does this mean that our organizers erred in commissioning historical papers for the present project? My defense of our organizers is that history is useful precisely for what is pointing up what is distinctive about EMU. EMU is monetary unification, extending to centralized control of the money supply by a central bank at the level of the union, without political unification.[81] It takes place in an environment of deep financial integration among a group of countries with well-developed capital markets. There is no

[80] Due to Paul Valery. My second favorite is attributed to Mark Twain. "Get your facts first, and then you can distort them as much as you please." Quoted in Kipling (1900), Letter 37.
[81] Subject to the qualifications in footnote 31 above.

provision for exiting and reintroducing a national currency. And there is no historical precedent for any of this.

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