Xavier de Vanssay*

Monetary Unions in Historical and Comparative Perspective

Summary:
Monetary unions can take (and actually have taken) many forms and the model of the European economic and monetary union (EMU) is just one of them. In the past, some monetary unions have been successful (lasting or being folded into an even larger monetary union), while some others have come apart. In this context, the paper presents two examples of past monetary unions: one successful (the German monetary union), and one that did not last, but was successful while it lasted (the Scandinavian monetary union). As it turns out, one can draw many interesting historic parallels between past monetary unions and the EMU.

* York University (Department of Economics, Glendon College, 2275 Bayview avenue, M4N 3M6, Toronto, Ontario) E-Mail: devanssay@glendon.yorku.ca. An earlier draft of this paper was presented at the Third International Conference “Institutions In Transition” organised by the Institute of Macroeconomic Analysis and Development, Maribor, Slovenia October 8-9 1999.

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Introduction: An historic event

January 1, 1999 saw an historic event in the construction of Europe. On that date, 11 of the 15 member countries of the European Union (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain)[1] took three steps that many observers thought they would never take. First, they tied their exchange rates to the value of the Euro. Secondly, they adopted a common currency (the "Euro") and finally they gave up national control over monetary and foreign exchange policies.

This was the third and final stage of the European economic and monetary union (EMU). The first two were the abolition of capital controls (in July 1990) and the creation of the European Monetary Institute, precursor of the European Central Bank (January 1994). Euro notes and coins will be (physically) introduced in January 2002 and, if everything goes according to plan, all national notes and coins will be withdrawn by July 2002.

This paper has two objectives: The first one is to show that monetary unions can take (and actually have taken) many forms and that the model of the EMU is just one of them. Elsewhere in the world, many new monetary arrangements are being created. The most recent "fad" is the currency board, which, one could argue, leads to a partial (and reversible) monetary union. A currency board stabilizes the exchange rate of a currency by guaranteeing

[1] Denmark, Greece, Sweden and the United Kingdom have not taken part in this first round. Greece, which did not meet the Maastricht Treaty 's criteria (on public finance, inflation and interest rate convergence), has expressed its wish to join the EMU around 2001. Denmark, Sweden and the United Kingdom, which met the Maastricht Treaty 's criteria, have voluntarily elected to remain outside the Euro-group for the present time.

that the domestic currency issued is fully backed by foreign exchange reserves.

The second objective of this paper is to look at two examples of past monetary unions: one successful (the German monetary union), and one that did not last, but was successful while it lasted (the Scandinavian monetary union). In the past, some monetary unions have been successful (lasting or being folded into an even larger monetary union), while some others have come apart. As it turns out, one can draw many historic parallels between past monetary unions and the EMU.

The birth of the European monetary union is all about timing and institutional change.

The abolition of capital controls across Europe in July 1990 played a major role in this policy. Once this step was taken, an ever- closer monetary union (in whatever form) was unavoidable. Specifically, without open capital markets, the need for a monetary union would have been less urgent. This is because, with open capital markets, a country cannot simultaneously maintain fixed exchange rates and pursue an independent monetary policy. This economic fact is known as the "inconsistent trinity". Two European countries that tried to defy this "open-economy trilemma" [2] learned their lesson the hard way in September 1992. Currency speculators forced the British *Pound* and the Italian *Lira* out of the European Monetary System. This debacle was followed by the devaluations of the Irish *Punt*, the Spanish *Peseta* and the Portuguese *Escudo*. Finally, in July 1993, following a speculative attack against the French *Franc*, the EMS nearly imploded. As a result, rules governing exchange rates for members of the EMS were changed. Exchange rates could now fluctuate by up to 15 % (instead of 2.25

%) either side of their central rates. This move effectively killed the pretense of fixed exchange rates within the EU. It reinforced the view that the only way to get fixed rates across Europe was to adopt a common monetary policy. This paved the way for a monetary union.

On the institutional side, the European System of Central Banks (ESCB) comprising the European Central Bank (ECB) and the national central banks, will be independent from political pressures. Indeed, the Maastricht Treaty (of December 1991) designed it as to be even more independent than the Bundesbank. This is no institutional coincidence. Price stability (which has been defined by the ECB as inflation of less than 2 % per year in the Euro area as a whole) is the central priority of the ESCB (Article 105[1] of the Maastricht Treaty). The Bundesbank's independence has been seen as an effective device to ensure price stability in post-war Germany (and some economists have even speculated on a positive link between economic growth and central-bank independence).[3] The mandate of the Maastricht Treaty for an independent central bank, later conveniently located in Germany, was a logical step (and it reassured the Bundesbank as to the future of its anti-inflation mandate). Incidentally, according to the Maastricht Treaty, the ESCB will not act as a lender of last resort and will play only a limited role supervising the stability of the financial system. National banking authorities keep their supervisory role and the responsibility of providing liquidity in a crisis.

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[2] Obstfeld, 1998.

[3] The economic importance of central bank independence has received a lot of attention from economists over the last decade. Alesina and Summers (1993), Cukierman, Webb, and Neyapti (1992), among others have identified a negative correlation between various indicators of central-bank independence and long-run industrial countries inflation rates. The link between economic growth and central-bank independence is less clear, see nevertheless Cukierman and Webb (1995). For an overview of the political economy of central-bank independence, see Eijffinger and De Haan (1996).

The stage is therefore set for an historic event: the disappearance of eleven currencies and the introduction of a new, common currency. The novelty is not the creation of a monetary union (indeed, as we shall see, these unions have been around for a long time) but rather in the sheer size and complexity of its inception.

1- Monetary union: the basic concepts

What is a monetary union? Basically, it is an agreement in which two or more countries agree to a jointly managed monetary policy. As noted by Allen (1976), a monetary union has three minimum requirements:

> First, in any monetary union either there must be a single currency or, if there are several currencies, these currencies must be fully convertible, one into the other, at immutably fixed exchange rates, creating effectively a single currency.
>
> Second, as the immutability of fixed exchange rates depends upon mutually consistent monetary policies within the union, there must be an arrangement whereby monetary policy for the union, including control of high-powered money and regulations affecting the commercial banks' ability to create money, is determined at the union level, leaving no national autonomy in monetary policy.
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> Finally, since there can be only one rate of exchange between an external currency and the union currency, there must be a single external exchange-rate policy. Toward this end, the national

authorities must relinquish individual control over their international reserves and invest such control in a union authority. [4]

The study of monetary unions of the nineteen and twentieth centuries leads to two observations about the institutional arrangements.

First, beyond the three requirements (**single effective currency**, **single monetary policy** and **single effective exchange rate**) which represent the bare minimum for a monetary union, various possible institutional models are possible and have been tried. In particular, monetary union arrangements may differ with respect of the currency, the central bank and the level of economic and political integration between the union members.

For the currency, we have three possible cases. First, we can have a supranational union-wide currency (for example with the EMU, the Euro is the union-wide currency). Another possibility is a national union-wide currency (for example: Switzerland and Liechtenstein both use the Swiss *Franc* and the Swiss National Bank coordinates their monetary policy). A final solution is to have separate currencies (for example Belgium and Luxembourg have distinct currencies, with a fixed exchange rate and with both currencies legal tender in both countries). This supposedly immutably fixed exchange rate[5] (in the case of Belgium and Luxembourg: one to one), with full convertibility is equivalent to having one single effective currency.

Similarly, for the central banks four cases compatible with a monetary union are also possible. First, we can have a *supranational* union-wide central bank. For example with the EMU, the European Central Bank is the union-wide central bank making monetary policy and instructing the

[4] Allen, p 4-5.

[5] Actually, in the case of Belgium and Luxembourg, the parity did change! From 1929 to 1935: 1Belgian *Franc* was equal to 1 Luxembourg *Franc*. In 1935, 1 Luxembourg *Franc* was worth 1.25 Belgian *Franc.* After the Second World War, the one-to-one parity was reestablished.

national central banks to implement it. A second possible arrangement for central banks in a monetary union is to have just one *national* central bank. Today, for instance, the Swiss National Bank sets monetary policy for Switzerland and Liechtenstein, the latter having also formally adapted its banking practice and legislation to Swiss norms. A third possibility is to have *more than one multinational central bank*. For instance, the Zone Franc, which covers 13 former French colonies and one former Spanish colony, has *two multinational central banks* (now located in Africa). The first one is *Banque Centrale des Etats de l'Afrique de l'Ouest* (BCEAO) which includes Bénin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Sénégal and Togo. The second is the *Banque des Etats de l'Afrique Centrale* (BEAC) which comprises Cameroun, Congo, Gabon, Guinée Equatoriale, the République Centre-Africaine and Tchad.[6]These two central banks have signed agreements with the French government. The last possible arrangement consists in having as *many national central banks* as there are members of the monetary union. Each central bank would then follow the appropriate monetary policy, consistent with the monetary agreement. This arrangement supposes an intense (and continuous) level of monetary and economic cooperation between the members of the monetary union. More precisely, it works as long as national central banks perceive that their national interest is best served by adopting cooperative behavior. Except for currency boards, there are no contemporary example of monetary unions with *multiple national central banks* following distinct monetary policies. However, in the nineteenth century, the Latin monetary union[7] and the

[6] To further complicate that arrangement, the République des Comores (in the Indian Ocean) is part of the Zone Franc, but has its own central bank, and its own currency.

[7] The Latin monetary union was comprised of France, Belgium, Switzerland, Italy and (later) Greece. It was an ambitious project to regulate exchange rates, based on a bimetallic standard during the

Scandinavian monetary union were perfect examples of a monetary union with multiple national central banks. As we shall see, both unions collapsed when these independent central banks tried to follow their own monetary policy. The lack of success of this arrangement in the past explains its current lack of popularity.

The second observation is that, despite good intentions, no monetary union arrangement is cast in stone. Indeed, these arrangements evolve over time. One could say that a monetary union is one aspect of a political union. As the nature of the political union changes, so does the monetary union. Some countries may leave the monetary union and then come back later (not necessarily under the same conditions). For instance Mali left the Zone Franc in 1962, then came back in 1967.

Some recent unions:

The oldest continuing monetary union is the one linking the U.S and Panama. Since 1904, Panama has pegged its currency (the *Balboa*) to the U.S. dollar. The U.S. dollar is legal tender in Panama and represents the bulk of the money supply. There is a *Banco Nacional de Panama*, which is not a central bank, issuing *Balboa* (mainly coins).

The situation of Belgium and Luxembourg is a second interesting example. As noted above, Belgium and Luxembourg form a monetary union. Actually, they first had an economic union (*Union Economique Belgo-Luxembourgeoise*) beginning in 1921, then a monetary union. The Belgian

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period 1865-1920. However, the enforcement mechanism was very weak and this encouraged some central banks to over-issue silver currency (after the drop in the relative price of silver). These problems were compounded by the financial demands of the war. It effectively collapsed shortly thereafter. See Flandreau (1993).

Franc, which replaced the German *Mark* after World War I, did not obtain legal tender status in Luxembourg until 1935 (although it circulated widely in that country since 1919). The Belgian Central Bank is responsible for monetary policy. This agreement has worked quite well, except in 1982 when Belgium devalued its currency against the wishes of Luxembourg. There were talks of an independent Luxembourg *Franc*, but they went nowhere. Not coincidentally, shortly after that, in 1983, Luxembourg created its own central bank: *l'Institut Monétaire Luxembourgeois* (which was later renamed *Banque Centrale du Luxembourg*).[8] But monetary policy has firmly remained in Belgian hands.

Although very closely linked to Austria, Liechtenstein officially adopted the Swiss *Franc* in 1924, which had already circulated widely since 1918. It also withdrew legal tender status for all locally-issued coins in 1931.[9] But things may change with the arrival of the Euro:

"Even in Liechtenstein, where Swiss francs line citizens' pockets, the new currency may prove hard to resist for those who trade with neighbouring Austria and other parts of euroland." [10].

A fourth lasting monetary union is the CFA Franc zone. CFA means "Communauté Financière Africaine" in the *Union Monétaire ouest-africaine*, and means "Coopération Financière en Afrique" in the six countries members of the *Banque des Etats de l'Afrique Centrale*. CFA used to mean "Colonies françaises d'Afrique". There is fixed link between the CFA *Franc* and the French *Franc*: 1 CFA = 1 /100 French *Franc*. The CFA was devalued (for the first time since 1948) by 50% on January 12, 1994.

[8] On a related issue, Belgium and Luxembourg show that it is possible for two countries with diametrically opposed fiscal policies to have an economic union and a monetary union.

[9] Olszak, p. 58-9.

[10] The Economist, January 9, 1999, p. 48

The causes of this devaluation (advocated by the IMF) were the persistent trade deficits and the secular downward trend in the price of raw materials. Interestingly, after this devaluation, a movement toward a common African market has started to emerge. The Dakar Treaty (January 1994) creates a "Union économique et monétaire ouest-africaine" (UEMOA), while a treaty signed in N'Djamena in March 1994 creates the "Communauté économique et monétaire de l'Afrique centrale" (CEMAC). So, unlike the European example, the CFA countries had a monetary union prior to having (one day) an economic union.

Finally, there are the currency boards. These are arrangements under which domestic currency can be issued only if fully backed by the central bank's holding of foreign exchange. This is not unlike the pre-1914 gold standard. With this commitment, a country (for example, Argentina, Hong Kong, Bulgaria) can credibly claim that it can redeem domestic currency for some particular foreign currency at a fixed rate. The foreign currency is usually the U.S. dollar or the Deutsche *Mark* (now the Euro). This effectively forces the country to give up any form of monetary independence. Empirically, this has led to lower inflation than under other exchange regimes, while having no negative effect on economic growth.[11] If a country runs a balance of payment surplus (current account plus capital account), it can increase its monetary base. Inversely, when a country has a balance of payment deficit, the monetary base decreases automatically (and therefore so does the money supply). In theory, this means that the money supply will be pro-cyclical: in good times, the money supply expands (further adding to aggregate demand) while in bad times, the money supply will contract. A reduction in the money supply, unless accompanied by a

corresponding decrease in the price level, leads to an increase in the interest rate. This exacerbates the recession and is the first drawback of a currency board.

The second drawback concerns the credibility of the exchange rate regime. While a currency board provides more certainty and credibility than the central bank simply fixing the exchange rate, it is not entirely credible. A currency board can control the monetary base (the high-powered money). It cannot -in general- fully control the money supply. For instance, in Argentina, the government can affect money supply by adjusting the required reserve ratio. This may explain why Argentina is considering replacing its currency by the US dollar.[12] Finally, unlike traditional monetary unions, "to date no currency board has had to be abandoned as a result of crisis."[13]

Table 1 lists successful monetary unions (including currency boards).

[Insert Table 1 here]

2- Monetary Union: historical examples

As noted in the introduction, monetary unions have been around for a long time. Some existed as far back as Ancient Greece[14], and during the time of Charlemagne[15]. But the golden age of monetary unification was the nineteenth century, after the industrial revolution. This was, not coincidentally, the period during which the modern Nation-States formed.

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[11] Enoch and Gulde, p.41.
[12] The Economist, January 23, 1999, p. 69.
[13] Enoch and Gulde, p.40.
[14] Graboyes, p. 8.

Among the most famous we find the German monetary union that accompanied the *Zollverein* (within the German Federation), the Scandinavian monetary union and the Latin monetary union. Of these three, only the German monetary union passed the test of time, as it led to the creation of the *Reichmark* and the *Reichsbank*, the precursors of the *Deutsche Mark* and the *Bundesbank*.

i- A lasting union: German monetary unification:

In 1990, we witnessed a new episode in German monetary unification process. The economic collapse of East Germany (1988-1989), with its important labor exodus to the West, led to the Treaty on Monetary, Economic and Social Union (May 18, 1990). It was basically an economic absorption of East Germany by West Germany. The monetary and financial aspects of the Treaty consecrated the triumph of the *Deutsche Mark*. It became the monetary unit of the new Germany, while the *OstMark* was converted at the rate of one to one for a *Deutsche Mark* (below a certain threshold, and at the rate of two for one above that threshold). That extremely high conversion rate (indeed, previously, on the black market one *Deutsche Mark* was worth up to ten *OstMark*) was controversial. On the one hand, it represented a massive transfer of wealth from the West to the East, as well as a competitiveness nightmare for (former) East German firms. On the other hand, this conversion rate was seen, by some, as an incentive to stem the labour exodus from the East to the West.

Interestingly, the issues of labor mobility, interregional wealth transfer, conversion rates and competitiveness were already present during the

[15] Olslak, p. 4-5.

nineteenth century and predate the creation of the modern German state. However, at the time, the monetary situation was much more complex.[16]

The Vienna Congress (1815) sanctioned the creation of the German Federation (the *Deutscher Bund*) composed of 35 independent states and four Free cities. The *Bund* removed all restrictions on the internal migration of labor and capital in 1815.

Within the *Bund*, Prussia, which had gained some territories (some of them without any common border with the former Prussia), now represented 54% of the population of the Federation. It had first to integrate its territories by eliminating internal trade barriers. This is what it did from 1816 to 1821. After that, Prussia set out to establish more customs unions with neighboring states (1831: *Zollverbund*). Finally, on January 1, 1834, Prussia formed a customs union (*Zollverein*)[17] with 25 other states (excluding Austria), with a common external tariff.

With the free movement of factors of production and (internal) free trade, the main obstacle to deeper economic and political integration was the absence of a common currency. The participant states agreed, and one article (Article 14) of the *Zollverein* Treaty stipulated that "governments of the *Zollverein* states should take action in order to bring their coinage systems on to a common standard."[18] . At the time, paper money did not have legal-tender status, although local governments sometimes issued it for fiscal purposes. Paper money was a credit instrument rather than a means of exchange. Coins (especially silver coins)[19] represented the majority of the

[16] The details on what follows are drawn from Holtfrerich (1989, 1993), James (1997) and Olszak (1996).

[17] Actually, it qualifies as a "common market" because of the freedom of movement of factors of production. On the respective roles of factor mobility and trade, see Mundell (1957).

[18] Holtfrerich, 1989, p. 220.

[19] Only Bremen adopted the gold standard in Germany.

money supply. Each state minted its own coins, with its own denominations, purity and weights. There were even different monetary standards (for instance, in the Northern states (with Prussia) there was the *Thaler* standard, and in the Southern states (with Austria) there was the *Gulden* standard). This monopoly on coinage allowed states to charge a fee ("coinage fee" or seignorage) which represented an important share of their fiscal revenues. For instance, for a *Thaler*, the coinage fee would be "the difference between the quantity of silver demanded by the mints in exchange for a *Thaler* coin and the silver content of the *Thaler* coin." [20]. To compound the monetary complexity of that period, different states charged different coinage fees (between 3 and 6%).

A first monetary agreement for the Southern states, the Munich Coinage Treaty, was signed in 1837. This agreement defined common coinage standards, limited the traditional rights to monetary sovereignty by member states, and established legal-tender for the *Gulden* coins. Note that this agreement did not eliminate coinage fees: it just standardized them.

In 1838, all members[21] of the *Zollverein* signed the Dresden Coinage Convention. It stipulated that each state had to adopt either the *Thaler* or the *Gulden* standard. The link to silver was established through the Cologne Mark (worth 233.855 grams) or 14 *Thaler* or 24.5 *Gulden*. Each signatory state had to mint *Thaler* or *Gulden* according to a precise silver-specification. Again, coinage fees were not abolished, just harmonized.

There was even, in 1842, an attempt to further the ideal of a common currency with the issue of the *Vereinsmünze* (union coin). It was worth 2 *Thaler* or 3.5 *Gulden*. This coin was too heavy to be used by merchants

[20] Holtfrerich, 1989, p. 218.

(who preferred bank notes), and too rich for ordinary people. It was more of a curiosity.

Austria wanted to join the *Zollverein* but Prussia derailed its application. However, Austria and the members of the *Zollverein* did reach an agreement on currency exchange. This was settled with the 1857 Vienna Coinage Treaty. Austria had wanted to establish the gold standard all over Germany. Prussia refused this also. The silver standard was now dominant. The new basic weight was half a kilo (one *Zollpfund*). There were now three currencies with a fixed parity to silver. One *Zollpfund* was equal to 30 *Thaler* or 52.5 *Gulden* or 45 Austrian *Gulden*. The 1857 Vienna Coinage Treaty also tightened the rules on the circulation of small-change coins. A ceiling was placed on the amount each region could issue. Small-change coins did not have legal tender outside the currency area (*Thaler, Gulden* or Austrian *Gulden*) to which the issuing state belonged.[22]

After Prussia's defeat of Austria (1866), the political unification of Germany started in earnest. Under the leadership of Prussia, the North German Federation[23] replaced the German Federation. The Federation outlawed the creation of new fiduciary money by the states. The issuing of bank notes was now essentially the responsibility of the Prussian Bank (created in 1847). After 1871, a unified coinage system was instituted. One *Mark* was worth a third of a *Thaler*. It was backed by gold – a move facilitated *in part* by the receipt of gold reparations payments from France following her defeat in the Franco-Prussian War of 1870[24]. All bank notes

[21] Well, not all of them … In 1842, Luxembourg joined the Zollverein but refused to adopt the Dresden Coinage Convention.

[22] Holtfrerich, 1989, p. 224 and James (1997), p. 5.

[23] In 1871, the South German States joined in to form the German Reich.

[24] James, 1997, p. 9.

not denominated in Marks were to be withdrawn by January 1, 1876. The silver *Thaler* kept its legal tender status until 1907.

The final installment of German monetary unification came with the creation of the *Reichsbank* (January 1876). It was a transformed Prussian Bank, but with more legislative power. The decision to create a "General German Reichsbank" was quite controversial at the time and engendered many (academic and political) debates. The Prussian government opposed the creation because it feared a loss of power, influence and seignorage. The south German states were in favor because they hoped to use the Reichsbank to take away some monetary power from Prussia.[25] In time, the *Reichsbank* progressively, and through successive legislative acts, would acquire the monopoly over the issue of bank notes. Initially, however, there were 33 regional note-issuing banks. It was not politically feasible to eliminate them and centralize everything. A final point of interest is that in theory the *Reichsbank* was subordinated to the government. Indeed, the "Banking Act made the *Reich*'s Chancellor the head of the *Reichsbank*." In practice, however, "the *Reichsbank* enjoyed a considerable degree of autonomy and – with minor exceptions- remained free from government interference." [26] This was due to the fact that government could not use the *Reichsbank* for its fiscal needs.[27] Commercial paper, gold, silver, and only a small quota of treasury notes essentially made up the *Reichsbank*'s assets. In 1922, the Reichsbank's autonomy would be established by law.

[25] As noted by James (1997, p. 14): "There is a precise analogy in this respect to the contemporary argument made in France and Mediterranean Europe that the monetary policy of Europe is already effectively made by the German Bundesbank and that the creation of a European central bank is the only practical way for Germany's partners to achieve influence over monetary policy."

[26] Holtfrerich, 1989, p. 233.

[27] Today, the Maastricht Treaty (Article 104[1]) also prevents the ESCB from monetizing public debt.

ii- A less successful union? The Scandinavian monetary union (1873-1920)

Denmark, Sweden and Norway share a geographic proximity, some linguistic similarity but they have also had numerous military conflicts. As a result, the monetary union between these three countries proceeded slowly, with a few modifications along the way (for instance Norway would join only on January 1, 1877). Most importantly, in contrast to the German monetary union, this union was neither part of a grand political scheme to unite these three countries, nor was it a part of a grand plan for an economic union. During that period, only Norway and Sweden had a customs union from 1874-1895.[28]

At the beginning of the 1860's, the Scandinavian countries were experiencing economic development (e.g. modernization of agriculture and the growth of the electricity and chemical and steel sectors). More trade ensued between the three countries, and accompanying this increase in trade, more transactions in foreign currency. There was a lot of currency inter-circulation and banks accumulated lots of foreign coins. For instance, in the south of Sweden, Danish coins were quite frequently used. However, the complexity, and the incompatibility of the denominations and weights between three currencies pushed the governments to initiate some discussion for currency unification. These discussions started in 1862 and would last ten years. In the meantime the idea of a universal currency was floated at the Conférence Monétaire de Paris (1865), but it remained just an idea.

[28] The details on what follows are drawn from Bergman et al. (1993), Heckscher et. Al (1930), Lester (1939) and Olszak (1996).

Prior to unification, Denmark, Norway and Sweden had a monetary system based on silver and their basic unit was the *Thaler*. But one Norwegian *Thaler* was equal to two Danish or four Swedish *Thalers*. To further complicate the matter, the Norwegian *Thaler* was divided into 120 *Schillings*, while the Danish *Thaler* was divided into 6 *Marks* (with each *Mark* worth 16 *Schillings*), while only the Swedish *Thaler* had a decimal division into 100 *Oere*. [29]

Politically, it was impossible for Denmark to adopt the German system (especially after the military defeat of 1864, when Denmark lost 2/5 of its territory to Prussia), and the Germans were not interested in a Danish association[30]. Denmark and Sweden considered joining the Latin monetary union. However, the bimetallic standard of the Latin union was not practical for the Scandinavians. Economically, it was tempting to adopt a gold standard. England had one, and so did Germany (1871). Therefore, the Scandinavian monetary union opted in 1872 for a gold-standard[31], with a decimal system.

The Convention called for the creation of a new common currency unit the Krone (*Krona*). Each country was allowed to mint gold coins of 10 and 20 Kr as well as subsidiary coins of 2 and 1 Kr., 50, 25 and 10 *Oere*.

Denmark and Sweden signed the Convention in 1873. However, the Norwegian Parliament rejected the deal in a close vote. Norway would nevertheless join the Convention by signing a Treaty in 1875, after having adopted a gold-standard and a new currency, the Norwegian *Krona*.

[29] Olszak, p. 70.
[30] Bergman et al. p. 508, footnote 2.
[31] The Scandinavian return to the gold-standard would be later copied by the Netherlands' (1873), Austria's (1879) and India's (1893). See Lester (1939, p. 175-176).

There were no limits placed on minting of subsidiary coins, which were legal tender in all three countries (Article 9). Subsidiary coins had a metal value lower than the nominal value. According to the Convention, each country was obliged, upon request of another country, to exchange its subsidiary coins for gold, thereby eliminating the temptation to over-issue subsidiary coins.

Paper money represented an important share of the money supply (52 % in Denmark, 70% in Sweden and 74% in Norway in 1885)[32] and was convertible. Each country's central bank accepted bank notes from the other two countries at parity immediately after the beginning of the Convention. The Bank of Sweden and the Bank of Norway would later formalize this unwritten agreement in 1894, and, in 1901, the Bank of Denmark and the Bank of Norway would do the same. The three central banks established a compensation mechanism in 1888. Each debtor country had to repay the other two in gold, or by draft.

By the end of the nineteenth century, therefore, the Scandinavian monetary union was very successful: gold coins, bank notes and subsidiary coins circulated in the three countries and were accepted at par.

How did it all unravel? The union did not survive the divergences in monetary policy caused by the First World War. Even though all three countries were neutral, they were differently affected by hostilities. Norway was closely linked to Great Britain, while Denmark did quite a lot of trade with Germany, and Sweden was the most neutral … trading with both belligerents.

At the start of the war, the Scandinavian countries suspended the convertibility of their notes, as did many other European countries. This, in

effect, allowed countries to inflate their currencies. Norway and Denmark expanded the currency in circulation at a more rapid rate than did Sweden[33].

The story is more complicated than a simple inflation tax. Because currency circulated in the three countries, this was akin to an attempt to free-ride, as the cost of inflation would ultimately be shared by the three countries, while the benefits accrued mainly to the country over-issuing currency. As we shall see, this put a strain on the Scandinavian monetary union.

First, to check currency inflation, in October 1915 the Bank of Sweden (the *Riksbank*) stopped accepting Danish bank notes at par. In December 1915, it also refused to accept Norwegian notes at par. Initially, the depreciation rate was around 2 or 3 %. By 1920, however, the rate of depreciation via-a-vis the Swedish *Krona* would be 22.95% on the Danish *Krona,* and 19.25% on the Norwegian *Krona*.[34] Note that gold coins and subsidiary coins still circulated at par. Therefore, it was possible to exchange them for Swedish bank notes, then move back into Norwegian (or Danish) bank notes and realize a small profit.

Secondly, in February 1916, Sweden exempted the *Riksbank* and the Royal Mint from the duty of buying gold or coining it. Due to exports to the belligerents, the amount of gold in Sweden had dramatically increased[35]. Gold could be inflationary (because it would be converted into money)[36] and was also depreciating. The Swedish *Riksbank* was obliged to buy Scandinavian gold at a price higher than it could get on the world market. To

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[32] Olszak, p. 76.

[33] Lester, p. 179 and Bergman et al. p. 515.

[34] Bergman et al., p. 514.

[35] Heckscher et al., p.185-6.

[36] Curiously, dealing with the threat of inflation, it should be noted that 'The *Riksbank* made no attempt to contract the money supply by restricting credit, especially by raising the rediscount rate." (Lester, p. 185).

be precise, the embargo on gold was not on its import but "only an exemption of the *Riksbank* and the Royal Mint from the duty of introducing imported gold into the Swedish monetary system"[37]. So initially, this ban did not affect inter-Scandinavian gold exports as gold coins from each country had legal tender in the other two. The same was true for Denmark and Norway. This led to some arbitrage (with the use of depreciated Norwegian or Danish bank notes) and could not last. After a few failed attempts at cooperation between the three Central Banks, in the summer of 1917, the Swedish gold embargo became total. This meant that gold coins and bank notes were no longer traded at parity between the three countries. This was the effective end of the monetary union.

The last chapters of this monetary union involved the role of the subsidiary coins. They were still legal tender at par. Because the Norwegian and Danish *Krona* traded at a discount, some arbitrage was possible. By 1924, one Swedish Krona was worth 1.87 Norwegian Krona or 1.59 Danish Krona. Denmark and Norway were exporting massive amounts of these small coins. Again, this could not last, and the final wall of the Scandinavian monetary union came tumbling down. In 1924, legal tender status was limited to the currency of the issuing country. This was the end. Although the 1872 Convention would never be formally denounced, none of it remained in effect.

3- Analysis and conclusion

[37] Heckscher et al., p.190.

German monetary unification and the Scandinavian monetary union have evolved very differently. Both can provide useful lessons for the European economic and monetary union.

On the German side, monetary unification proceeded slowly, accompanying the expanding customs union led by Prussia. Initially started as a standardization of a complex coin system, it progressively evolved to lead to the creation of a common currency. The interesting lesson here is that the process started well before the creation of modern Germany. Actually, German monetary unification was all but complete before the final *political* unification (the 1871 Reich led by Prussia). However, it should be clear that, especially after 1857, Prussia was already playing a leading role in German monetary unification. Both German monetary unification and the European economic and monetary union started after a customs union was in place. However, as we have seen, this is not a necessary condition. In Africa, the CFA zone predates the as yet non-existent customs union. Table 2 presents the common characteristics between the German monetary unification and the European economic and monetary union.

[Inset Table 2 here]

The main lesson of the Scandinavian monetary union is that cooperation between central banks and the economic similarity between countries may well be necessary conditions for a successful (and lasting) monetary union. They did not seem to be sufficient conditions for Scandinavia. Indeed, when a crisis (in this instance, World War I) came, the lack of a supra-national regulatory institution for monetary policy led each country to try its own, non-cooperative path. This is a classic case of the Prisoner's Dilemma, where cooperation is the optimal solution only if every

player perceives that there will be more games of the same nature over time. In any other circumstance, non-cooperative behavior is the dominant strategy.

Does the creation of the supra-national European Central Bank solve this problem? It is too early to tell. First, in the twentieth century, central banking has changed radically. We are now in a world of fiat money, in contrast to a gold or silver standard. Price stability is now the main concern. Secondly, designed to be independent, the ECB will still have to be accountable for its actions. How will it handle the various regional economic conditions of Europe? Specifically, how will a tight monetary policy affect an economically depressed region? Will the ECB be able to resist calls for "distinctive" national macroeconomic-monetary policies? The capacity of the ECB to address these issues will be the true test for its survival and that of the EMU.

It is only after forty years that the Scandinavian monetary union started to disintegrate. It is difficult to predict the evolution of the political landscape in Europe for even the next ten years. How can one predict the success or the failure of the European Economic and Monetary Union?

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