

THREE CONFERENCES ON INTERNATIONAL MONETARY HISTORY

Business with Money: Monetary Politics and Capital Flows in the Era of the First Globalization

Session of the European Business History Association and Business History Society of Japan,
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The Finnish 1 markka 1922 – An exceptional coinage in Copenhagen¹

Michael Märcher²

Introduction

During and after World War I there was a general lack of metals. As an emergency solution in Finland, bank notes with denominations as small as 25 and 50 penni and 1 markka were issued. The small notes had to be replaced by coins, and in 1920 a law regarding this matter was passed. The three coin types were to be made of cupro-nickel, an alloy new to most countries. At the relatively small mint in Helsinki, the three lowest denominations, 1 penni, 5 penniä, and 10 penniä, were being produced in copper (Fig. 1-2), and the mint used all its capacity on these new small copper coins. Therefore the new cupro-nickel coins had to be produced abroad.

The first cupro-nickel coins were delivered in 1921 from the important British company The Mint, Birmingham Ltd., formerly Ralph Heaton & Sons³. The delivery comprised 20 million markkaa in cupro-nickel coins – 25 and 50 penniä and 1 markka with the year 1921 and marked with an H for Heaton (Fig. 3).

The main theme of this article is the second and final⁴ delivery of cupro-nickel coins from abroad. 10 million 1 markka pieces with the year 1922 were delivered from the mint in Copenhagen. They had the mint mark, a heart, for the mint in Copenhagen on the obverse (Fig. 4-5).

From 1923 the Finnish cupro-nickel coins were produced at the mint in Helsinki (Fig. 6), beginning with cupro-nickel strips delivered from the mint in Copenhagen in 1923.⁵

The Finnish mint director Isak Gustaf Sundell (1912-1947)⁶ was designing the new Finnish coins already before Finland declared its independence from Russia in 1917. The final design was developed in cooperation with the artist Rudolf Åkerblom (1849-1925).⁷

The mint in Copenhagen and cupro-nickel

The Finnish 1 markka 1922 was produced at the mint situated at Gammelholm in Central Copenhagen. The mint had been built in the beginning of the 1870s to facilitate massive changes in the Danish monetary system: the introduction of the gold standard, decimal coinage, and the new krone and øre denominations, which required a replacement of

¹ Unfortunately, I was not able to participate in or write the announced paper for the interesting conference in Paris August 2012. I wish to thank Dr Catherine Bregianni and Dr Georges Depeyrot for accepting an English and slightly altered version of this article previously published in Danish: M. Märcher, 2008. Finland 1 mark 1922 – enestående udmøntning i København. In: O. Järvinen (ed.), *Scriptavaria numismatica Tuukka Talvio sexagenario dedicate*. Helsinki: Suomen numismaattinen yhdistys, 155-170.

² The National Museum of Denmark, The Royal Collection of Coins and Medals, Frederiksholms Kanal 12, DK-1220 Copenhagen K, michael.maercher@natmus.dk

³ The company is regularly mentioned. The main study is J.O. Sweeny, 1981. *A Numismatic History of The Birmingham Mint*. Birmingham. The company delivered millions of bronze planchets to the mint in Copenhagen in the end of the 19th century and the beginning of the 20th century, see M. Märcher, 2012a. *De Kongelige møntsteder i Altona og København 1813-1873. Teknik og produktion*. Odense, 127f.

⁴ The Finnish 1 penni 1963 are produced at the mint in Leningrad (Saint Petersburg).

⁵ Another and older example of Danish-Finnish cooperation in the production of money is the many Finnish bank notes produced in Copenhagen in the second half of the 19th century.

⁶ For further information and picture, see S. Kuusi et al., 1964. *Suomen Rahapaja 1864-1964*. Helsinki, 36.

⁷ T. Talvio, 2003. *The Coins and Banknotes of Finland*. 2nd ed. Helsinki, 89ff.

the entire coin circulation.⁸ From the beginning, the mint was primarily adapted to produce gold and silver coins. The planchets for Danish small coins of bronze were bought from the aforementioned company Ralph Heaton in Birmingham and from the German company Basse & Selve⁹ in Altena near Dortmund, and then struck at the mint in Copenhagen (Fig. 7). The Finnish coins were among the last to be produced at the mint in Gammelholm, which in 1923 was to be replaced by a new mint built 1921-23 at Amager Boulevard on Amager only 1-2 kilometres from Gammelholm.¹⁰

The Copenhagen mint often had problems with the purchases of bronze planchets from Birmingham and Altena. They were expensive, time consuming, the quality was variable, and the deliveries were irregular. The most important aspect was the dependency. For these reasons and the lack of metals in the last years of World War I, the mint 1918-1919 had to produce small coins of iron (steel), which were then coated with zinc elsewhere (Fig. 8). This unfortunate situation demonstrated the vulnerability of a mint not being able to produce bronze planchets. In 1919 bronze planchets were again bought abroad, but in 1920 the Ministry of Finance allowed the mint to try to produce bronze planchets (Fig. 9). It was a success, since the mint's own planchets were both better and cheaper than both the British and German one and relieved the mint's dependency. The mint therefore stopped buying planchets. At the same time, silver prices had increased to a level making it impossible to produce Danish silver 10 and 25 øre (Fig. 10).¹¹ In the future they should be made of cupro-nickel, 75% copper and 25% nickel. The mint manufactured the cupro-nickel planchets in-house, and the entire production of the new Danish cupro-nickel coins soon became a success (Fig. 11). This was amongst other factors due to the mint's change from furnace coke-burning melting furnaces to a coal-burning melting furnace, which could generate higher temperatures. This was very beneficial, since the cupro-nickel alloy's melting point is above 1,200 degrees centigrade.¹²

In 1920, cupro-nickel was a new coin metal in Denmark, as in most other countries in the first half of the 20th century.¹³ In many countries, nickel replaced silver in coin alloys in this period. A cupro-nickel alloy takes on a silver-white colour, when the alloy contains c. 15% or more nickel.¹⁴ Besides that, cupro-nickel is a hard-wearing alloy. Since 1920 cupro-nickel has continuously been used for the middle denominations in the Danish coin series – and 1960-1988 also for the highest denominations.¹⁵ Thus, the present Danish 1, 2, and 5 kroner are 75% copper and 25% nickel.

The first¹⁶ international coins of cupro-nickel – also 75 % copper and 25 % nickel – seems to be the Belgian 5, 10, and 20 centimes from 1860-1861 (Fig. 12), followed by the U.S. 3 and 5 cents from 1865-1866 (Fig. 13). The nickname *nickel* of the U.S. 5 cents stems from the cupro-nickel 5 cents issued from 1866.

⁸ M. Märcher, 2012b. Coins, medals, and reforms: A survey of Danish monetary history 1813-1873. In: G. Depeyrot (ed.): *Moneys and Economies during 19th Century (from Europe to Asia)*, Collection Moneta vol. 139, Wetteren, 77-95.

⁹ The company was founded 1861 and later taken over by Krupp. See H. Rinke, 2004. *Münze betreffend ...* München.

¹⁰ H.C. Nielsen, 1923. *Den Kongelige Mønt i Holbergsgade 1873-1923*. *Den Tekniske Forenings Tidsskrift*, 103-114, 6ff.; N.P. Nielsen, 1944. *Den Kongelige Mønt*. *Nordisk Numismatisk Unions Medlemsblad*, 1-18, 14ff.; Märcher 2012a, 127.

¹¹ The silver content in those 10 øre and 25 øre were 400‰ and 600‰ respectively.

¹² Nielsen 1923, 6ff. and Nielsen 1944, 14ff.

¹³ The 25 bit/5cents 1905 from the Danish Vest Indies are made of nickel, not cupro-nickel.

¹⁴ E. Auer & T. Lautz, 2000. *Verteufelt, verachtet, begehrt ... vor 250 Jahren wurde das Element Nickel entdeckt*. Das Fenster 160. Kreissparkasse Köln, 14.

¹⁵ The only exception since 1920 was during World War II, when zinc coins were made.

¹⁶ Here the U.S. 1 cents (Flying Eagle and Indian Head) from 1856-1864, which consists of 88% copper and 12% nickel, are ignored. See Auer & Lautz 2000, 12ff.

Contact and contract

In Denmark, the story of the Finnish 1 markka 1922 began when the Danish mint master Hans Christian Nielsen (1919-1927, Fig. 14) received a private letter from the Finnish mint director Sundell dated 10th October 1921. Sundell wrote that in the near future Finland would probably need to have a significant amount of 1 markka pieces produced abroad. Sundell gave Nielsen details about the specific coin type, delivery time etc., and asked for some unofficial information from Nielsen about the possible prices at the Danish mint if it was able to undertake such a task. He also wanted information about delivery time if the order would be e.g. 10 million pieces.¹⁷

Only a week later Nielsen answered. The price would probably be 28 Danish kroner per 1,000 pieces, and the mint would probably need half a year to deliver 10 million coins. Sundell informed the Bank of Finland about the Danish price. The bank had authorisation from the Finnish government in this matter, and the bank had itself obtained an offer from The Mint, Birmingham Ltd. That company had in 1921 produced 20 million markkaa in three different denominations for Finland. The unofficial Danish offer was more favourable – cheaper – than the one from Birmingham, so things started moving fast. Sundell sent a telegram to Nielsen 7th November asking him to have the unofficial information confirmed.¹⁸

Nielsen approached his superior, the Danish Ministry of Finance. He recommended the task, and the ministry approved work on a draft for a contract and allowed some preparations for the task to be conducted at the mint. Nielsen's arguments were primarily economical. It would be a very fortunate time to get a foreign order, since all the mint's workshops were in good shape and ready, and the on-going production of 2,800,000 pieces of Danish 25 øre and 3,000,000 pieces of Danish 10 øre took up only part of the room with the coin presses and none of the other workshops.¹⁹

All drafting and negotiating the contract about the production of 10 million Finnish 1 markka pieces at the mint in Copenhagen took place in November 1921, quickly and without significant problems. The Danes had stipulated different terms regarding prices and delivery, and the Bank of Finland wrote a contract draft upon them, which was swiftly approved in Copenhagen. Nielsen recommended the draft strongly, when he sent it to the ministry 15th November. He figured that the Danish profit would be approximately 40,000 kroner, which was a significant sum of money. His calculation can be seen in the appendix.²⁰

The Bank of Finland signed the contract on 22nd November and the mint in Copenhagen signed it 6th December. The contract stipulated that the coins should be of 75% copper and 25% nickel and have a diameter of 24 mm. The weight should be 5.18288 grams with a tolerance of 0.15% when weighing 2,000 coins. They should be packed in bags, and each should contain 2,000 coins and be sealed. The bags should be packed in wooden boxes with eight bags in each, and the boxes should also be sealed. The Finnish mint in Helsinki would make the necessary original die material available for the Danish mint, and the coins should be struck according to the Finnish coin act of 23rd December 1920.²¹

¹⁷ The Danish National Archives (DNA), 1155: Danmarks Nationalbank (DN), Kopier: Breve til Finansministeriet, 1921, 3.

¹⁸ Ibid.

¹⁹ DNA, DN, Indkomne skrivelser, 1921, 239; DNA, DN, Kopier: Breve til Finansministeriet, 1921, 3 (quotation).

²⁰ DNA, DN, Indkomne skrivelser, 1921, 239, 243, 245, 264 and 267; DNA, DN, Kopier: Breve til Finansministeriet, 1921, 7f.

²¹ DNA, 0037+B: Finansministeriet, Sekretariatet, Diverse vedr. Udmøntning i de tre nordiske riger, Udmøntninger 1916-1922 (DUNR), 1921, 3928; DNA, DN, Kopier: Breve til Finansministeriet, 1921, 11.

Production and delivery

Copper and nickel for the production of the Finnish coins were delivered to the Copenhagen mint already in November and December 1921. The mint bought almost 31 tons of copper from the Copenhagen company Hugo Michaelsen that supplied “Raw materials for Scandinavian manufactures”. Nickel was delivered directly from Kristiansand Nickel Refinery, Ltd.²² in Norway. The first coins were quickly finished, and at the end of January 1922, the mint could submit the usual two specimens of coins²³ to The Royal Collection of Coins and Medals at The National Museum of Denmark. A little uncertainty regarding the coins’ thickness existed at the outset of the production. To clarify, the Bank of Finland sent 20 pieces of 1 markka 1921 for comparison, which eliminated the uncertainty. The 20 coins produced in Birmingham were of course returned to the bank, when the order was completed.²⁴

Because of sea-ice and the lack of shipping opportunity, it took a few months extra before the first coins were shipped to the Bank of Finland. The first shipment left Copenhagen in late March and contained 960,000 markkaa. Then, deliveries picked up speed, although lack of shipping opportunity delayed some of them. The production was completed in late June, and the last shipment arrived in Helsinki early July 1922.²⁵

The Bank of Finland was pleased with the 10 million coins. A letter of 11th July from the bank to the Danish mint states that “As the entire order of cupro-nickel 1 markka is completed, it is our pleasure to hereby express our utter satisfaction with the work performed by you.”²⁶ In total, 10,000,006 markka were produced. The six coins extra were not sent to the Bank of Finland, but distributed in Denmark. It was customary to send new coins to specific institutions. As mentioned, two coins were sent to The Royal Collection of Coins and Medals. The Ministry of Finance also got two, and the last two were sent to the Danish king.²⁷

The direct profit was 50,785.27 kroner, which was extremely satisfying for the mint and the ministry. The revenues were the 280,000 kroner paid by the Bank of Finland. The mint’s direct spending on this order was 53,805.523 kilos of metal with a value of 127,991.23 kroner. 101,223.50 kroner were spent on packaging, production etc. During the production the metal loss was 1,947.173 kilos. The metal was lost by melting and by the cleaning of the planchets. They were probably cleaned in dilute sulphuric acid scrubbing against each other in rotating barrel-shaped containers. The mint had melted and rolled more than 88% of the metal. The last c. 12% was delivered to the mint in rolled strips that only had to be rolled a few tenths of a millimetre thinner before they were ready for the punching out machines. The rolled strips were supplied by the still existing Danish company NKT²⁸ (Nordic Cable and Wire Factories, Ltd.), probably from its former copper works²⁹ on Amager. (Fig. 15-21).³⁰

²² The refinery was founded 1910. It still exists; it is now part of Xstrata (www.Xstrata.com).

²³ Danish royal mints have since 1734 delivered one or two specimens of every new coin or medal to The Royal Collection of Coins and Medals at The National Museum of Denmark. See M. Märcher, 2009. Møntstedernes pligttaflevering i 1700- og 1800-tallet. *Nordisk Numismatisk Unions Medlemsblad*, 22-25.

²⁴ DNA, DN, Indkomne skrivelser, 1922, 32; DNA, DN, Kopibog, 656; DNA, DN, Kopier: Breve til Finans ministeriet, 1921, 3708 and 3960; The National Museum of Denmark, The Royal Collection of Coins and Medals, GP 1709 and file 115/21.

²⁵ E.g. DNA, DUNR, 1922, 1546; DNA, DUNR; DNA, DN, Indkomne skrivelser, 1922, 63, 66, 81, 83, 87, and 100.

²⁶ DNA, DN, Indkomne skrivelser, 1922, 131.

²⁷ DNA, DUNR, 1922, 1747 and 2195; DNA, DN, Indkomne skrivelser, 1922, 125 and 131.

²⁸ About NKT see J. Hansen, 1948. *Aktieselskabet Nordiske Kabel- og Traadfabrikker. 1898-1948*. Copenhagen, J. Burchardt, 1999. *Historiens lange tråd. NKT Trådværket 1899-1999*. Middelfart, and www.NKT.dk.

²⁹ The copper works on Amager existed c. 1908-1979. It replaced the copper works in Frederiksværk on Zealand, which the company had taken over. The Frederiksværk works supplied different kinds and shapes of copper to the mint in Copenhagen in the 19th century. Märcher 2012a.

³⁰ DNA, DUNR, 1922, 1747 and 2195; H.C. Nielsen, 1924. Den Kongelige Mønt. *Numismatisk Forenings Medlemsblad*, VII, 143-146.

The dies

During production the mint in Copenhagen acquired useful experience regarding die manufacture. The dies for the actual striking of the Finnish coins were made in Copenhagen from three matrixes and four poinçons delivered by the Finnish mint. In February 1922 mintmaster Nielsen reported the following about the dies to the ministry:

“the dies used for the Finnish 1 markka have proved to be of a remarkably good quality regarding the convexity of the die surfaces’ adjustment to the extension and relief height of the engraving. Firstly, this means that it is possible to strike each coin, so that both the actual gravure as well as the outer frame around it – edge of pearls, surface, and ribs – can be struck extremely accurately; secondly the pressure is minimized, which means that a large number of coins – an average of at least 250,000 pieces – can be struck with each pair of dies. This is economically very beneficial, not only because each die represents both material and salaries, but also because it results in fewer of the delays caused by die replacements. The good die results are primarily achieved due to the way the die material – matrix and poinçon – from the Finnish mint are treated by the medallist; if the aforementioned raised and incused reliefs were treated as usual, a less beautiful appearance would have been the result, and many more dies would have been used.”³¹

39 obverse and 38 reverse dies were used. Together with an unused reverse die they were made unusable, and all the die material including the matrixes and poinçons were sent to the Finnish mint after the production.

Strips of cupro-nickel for Finland 1923

The success with the 1 markka 1922 apparently led to a new Finnish order for the mint in Copenhagen. Like several other works the Danish mint submitted offers for supplying the mint in Helsinki with cupro-nickel strips in the beginning of 1923. The offer from Copenhagen was far from cheapest, yet it was chosen. According to mint master Nielsen, the Finnish mint had after all considered the Danish offer as the best “because after the Finnish mint’s conception, the Danish offer’s advantage is that the Danish mint’s work is so accurately done that it increases the production capacity of the Finnish mint; furthermore the planchets produced in Finland will have greater uniformity and the number of dies used would be lower.”³²

The order was for 22 tons of cupro-nickel strips that should be used for production of new 1 markka coins at the mint in Helsinki. Consequently, they should be of 75% copper and 25% nickel. Their size should be approximately 1.50 metres x 54 millimetres x 1.27-1.28 millimetres. The mint in Copenhagen had offered strips costing 3.65 kroner per kilograms, and the Finnish mint director Sundell agreed to this price. Nielsen was happy with this, as he believed the order would generate about 4,000 kroner in profit. Since the Danish mint should move later in 1923, it was not convenient if the strips had to be made from scratch at the mint. NKT could deliver strips that required only a little additional rolling at 3.25 kroner per kilogram. The Danish mint’s cost of packing etc. and the last rolling would be around 20 øre per kilogram. So the order would generate a direct profit of around 20 øre per kilogram. Nielsen pointed out to the ministry that the order from Finland also gave work to the Danish factory, which delivered the strips. This must be seen in the light of the economic downturn, which dominated industrial production in the first years of the 1920s. Also, the order meant that the mint could employ three additional workers. The first eight boxes with almost 3.4 tons of strips were sent from Copenhagen in March 1923, and the deliveries continued throughout 1923.³³

³¹ DNA, DUNR, 1922, 631.

³² DNA, DUNR, 1923, 332.

³³ DNA, DUNR, 1923, 332, 1065, and 1636; DNA, DN, Indkomne skrivelser, 1923, 39a and 93a; Hansen 1948,

In 1924, the first Danish coins of aluminium bronze were produced at the mint in Copenhagen (Fig. 22). The first Finnish coins of that alloy are from 1928, and the Danish mint delivered some semi-manufactured goods to the Finnish aluminium bronze coinage in the interwar period.³⁴

Coinage for other countries

The Finnish 1 mark 1922 is an exceptional coinage in the Danish context. It is probably the first coin produced in the Kingdom of Denmark for a foreign nation.³⁵ Presumably, coinage for a foreign country never happened again in Denmark, if the production of Icelandic coins 1922-40 is ignored.

After World War I, the Danish mint was approached by several countries, which often did not themselves have a mint, with inquiries regarding the possibility of coin production in Copenhagen. Only two inquiries in the period 1921-23 led to a contract, production etc. It was the Finnish one from 1921 and an Icelandic one from the summer 1922 (Fig. 23). The Icelandic production was also to a foreign nation, since Iceland became independent in 1918. But still Iceland was in personal union with Denmark 1918-1944, and the Icelandic coins from 1922 were the first Icelandic coins. Until World War II, Icelandic circulation coins were produced at the mint in Copenhagen. Before the 1920s, the coins officially in use in Iceland were the ordinary Danish coins. The Icelandic coins from 1922 had “to be of the same alloy and weight as the Danish coins with the same denominations”.³⁶ The first Icelandic order was for 300,000 pieces of 10 øre and 300,000 pieces of 25 øre, and the Danish mint’s direct profit was estimated to 11,376.02 kroner.³⁷

As mentioned, the mint in Copenhagen was constructed in the 1870s primarily for production of coinage of precious metals for the small Danish coin circulation, which had been reduced in 1864 with the segregation of the Kingdom of Denmark and the two duchies, Schleswig and Holsten. When the new mint was constructed on Amager 1921-23 coinage for foreign countries was taken into consideration, but in this it proved to have very limited success.

In addition to coins for Denmark and Greenland, the new mint only produced coins for the independent, but small, Iceland. It was only from 1926 that the mint produced coins for Greenland/The Government of Greenland, which did not need a lot (Fig. 24). In 1922 the mint however had produced a small portion of Greenlandic private coins / tokens for use in Ivigtut Cryolite Quarry almost simultaneously with the coinage for Finland. These totalled only 25,000³⁸ pieces for The Cryolite Mining and Trading Company, Ltd.: 10,000 pieces of 10 øre, 4,000 pieces of 50 øre, 4,000 pieces of 2 kroner, and 7,000 pieces of 10 kroner (Fig. 25).³⁹

Inquiries were received at the mint in Copenhagen about coinage for other countries, but the strong competition in the area meant that none of the mint’s offers led to contract or coin production in Denmark. In the summer of 1922 the mint was approached by Estonia for a supply of nine million coins: 1 markka, 3 markkaa, and 5 markkaa pieces in cupro-nickel (75% copper and 25% nickel, Fig. 26). Nielsen at the mint wanted the order, and an offer and samples of new Danish and Finnish coins were submitted to Estonia. The mint was quickly

40.

³⁴ Nielsen 1944, 17; Talvio 2003, 92.

³⁵ At the significant royal mint in Altona, which existed 1771-1863 in the duchy Holstein and was placed close to the very important metal and money market in Hamburg, coins were produced for Hamburg (1805 and 1842-1861), Oldenburg (1776-1793), and Schaumburg-Lippe (1829-1831). Märcher 2012a, 196-198.

³⁶ DNA, DN, Indkomne skrivelser, 1922, 148.

³⁷ Ibid.

³⁸ According to S. Stigø, 1988. *Eventyret om Kryolit*. København, 116, the numbers are 4,018, 4,018, 7,018, and 10,018.

³⁹ DNA, DN, Indkomne skrivelser, 1922, 85; Stigø 1988.

informed that the offer would probably be accepted if the price was reduced by 15%. That did not happen, and a little later the mint was notified that its offer with regards to price was below a Swedish one, but above a German offer.⁴⁰ In the end, “the Estonian Ministry of Finance has accepted a German offer on nickel coins, which price is stated to be around 30% less than the Danish offer. [The Danish Consulate in Tallinn] has secretly found out that the Estonian Ministry of Finance would have accepted the Danish offer, although it had been 10-15% higher than the German one, but it was not possible to accept a larger difference than that.”⁴¹

In the period 1921-1923, the order from Estonia was apparently the one which the mint in Copenhagen was closest to winning. Bulgaria and Romania both wanted offers on large-scale production of small coins. Bulgaria wanted 60 million aluminium coins, while Romania would like to have around 700 tons of cupro-nickel coins produced. The mint did not make any offers on these large orders and probably not on the 500,000 gold coins (20 lats), which Latvia asked for in the autumn of 1922. But the mint made an offer of 663,000 kroner on 34 million coins for Latvia in the spring of 1922. At the end of 1923 Latvia also wanted an offer on 18 tons of small coins of silver. At the same time Lithuania asked for offers on small coins. None of these inquiries ended with production in Copenhagen: either the mint did not make an offer due to scale or other difficulties, or the offers were not accepted.⁴²

Summary

In the early 1920s, the mint in Helsinki used all its capacity on the production of 1 penni, 5 penniä, and 10 penniä in copper. Therefore, Finnish coins were produced abroad e.g. 10 million 1 markka pieces at the mint in Copenhagen in 1922. The coins were of cupro-nickel, which from 1920 was a new metal for coins in Denmark. It is still used for Danish coins.

At the end of 1921, a contract for 10 million 1 markka pieces with the year 1922 was signed between the Bank of Finland and the mint in Copenhagen. The mint in Copenhagen expected a profit of approximately 40,000 kroner, and still managed to make a better offer than the mint in Birmingham, which had produced Finnish coins in 1921.

For the mint in Copenhagen, the Finnish order came at a fortunate time, since the mint had spare capacity. The coins were produced and delivered in the first half of 1922, and the total production was 10,000,006 markka pieces. The direct profit was 50,785.27 kroner. 88% of the coins were produced from scratch at the mint, but for 12% of them almost finished rolled strips were bought from the Danish company NKT. A side effect of the successful production was a new Finnish order in 1923 for around 22 tons of cupro-nickel strips, to be delivered from the mint in Copenhagen to the mint in Helsinki.

The Finnish 1 markka 1922 is remarkable in a Danish context. Besides Icelandic coins, it is the only coin ever produced in the Kingdom of Denmark to a foreign country. In the 20th century, the mint in Copenhagen received several inquiries about coin production for foreign countries, but only the ones from Finland – and from Iceland, which was in personal union with Denmark 1918-44 – resulted in coin production in Denmark. After World War I, the mint for example had inquiries from the three Baltic countries, Bulgaria, and Romania.

⁴⁰ The German offer came from the company Hirsch Kupfer- und Messingwerke AG in Eberswalde, which is c. 30 km northeast of Berlin.

⁴¹ DNR, DN, Indkomne skrivelser, 1922, 114, 124, 133, 139, 144 (quotation), 251, and 1923, 14a; G. Haljak, 1993. *Estonian Coin Catalogue*. Tallinn, 118ff.

⁴² DNA, DN, Indkomne skrivelser, 1921, 221; 1922, 88, 198, 199, and 1923, 3, 192a, 224b, 225b, 287a, and 294b.

Appendix⁴³

Mint master H.C. Nielsen's calculation regarding the production of 10 million Finnish 1 markka pieces, October-November 1921:

Metal

Metal for 1,000 coins	= 5,183 kg.
Loss by melting	= 317 kg.
Total	= 5,500 kg.

Hence

1,375 kg. nickel at 4 kroner (kr.) per kg.	= 5.50 kr. per 1,000 pieces
4,125 kg. copper at 2 kr. per kg.	= 8.25 kr. per 1,000 pieces
Total	= 13.75 kr. per 1,000 pieces
The 13.75 kr. per 1,000 pieces rounded off to	= 14.00 kr. per 1,000 pieces

Estimated production costs

Salary	= 3,000 kr. per week
Materials, power, lights etc.	= 1,000 kr. per week
Total	= 4,000 kr. per week
Expected weekly production	= 455,000 pieces per week
Duration (10,000/455)	= 22 weeks
Production costs (4,000/455)	= 8.80 kr. per 1,000 pieces
The 8.80 kr. rounded off to	= 9.00 kr. per 1,000 pieces

Package and transportation costs

Estimated	= 1.00 kr. per 1,000 pieces
Total costs	= 24.00 kr. per 1,000 pieces
Revenue (from the Bank of Finland)	= 28.00 kr. per 1,000 pieces
Expected profit	= 40,000 kr.

Nielsen also points out: "If one wants an accurate calculation of operating costs, the costs must also include a share of the public servants' salary as well as a share of the interest and the amortization of the capital invested in the mint. These costs are estimated at respectively 13,000 kroner and 7,000 kroner, thus a total of 20,000 kroner, so that the direct profit is 20,000 kroner or approximately 7% of the revenue.

⁴³DNA; DN, Kopier: Breve til Finansministeriet, 1921, 8.

It must also be noted that the above calculation is made with some caution, so that the final result might be more favourable than expected, if the order can be carried out without the occurrence of any accident.”



1) The former mint in Helsinki, built in the 1860s. A small part of the city's Russian church, the Uspenski Cathedral, is seen in the background.



2) Finland, 1 penni, 5 penniä, and 10 penniä 1920. Copper. Produced at the mint in Helsinki. All coins illustrated in this article are from The National Museum of Denmark, The Royal Collection of Coins and Medals.



3) Finland, 25 penniä, 50 penniä, and 1 markka 1921. Cupro-nickel. Produced in Birmingham.



4) Finland, 1 markka 1922 (x3). Produced at The Royal Danish Mint in Copenhagen. The little heart on the obverse was the mint mark for the mint in Copenhagen. Photo: John Lee.



5) The Royal Mint at the corner of the streets Holbergsgade and Herluf Trolles Gade in the centre of Copenhagen. C. 1907-1924. The Mint was built 1872-73 and used for coining 1873-1923. The building still exists, now heightened and used by the SFI – The Danish National Centre for Social Research.

Photo: The Royal Library, Copenhagen, Holger Damgaard (1870-1945).



6) Finland, 50 penniä and 1 markka 1923. Cupro-nickel. Produced at the mint in Helsinki.



7) Denmark, 1, 2, and 5 øre 1919. Bronze.



8) Denmark, 1, 2, and 5 øre 1918. Iron coated with zinc.



9) Denmark, 1, 2, and 5 øre 1920. Bronze.



10) Denmark, 10 and 25 øre 1919. Silver.



11) Denmark, 10 and 25 øre 1920. Cupro-nickel.



12) Belgium, 5 and 10 centimes 1861; 20 centimes 1860. Cupro-nickel.



13) United States of America, 3 and 5 cents 1866. Cupro-nickel.



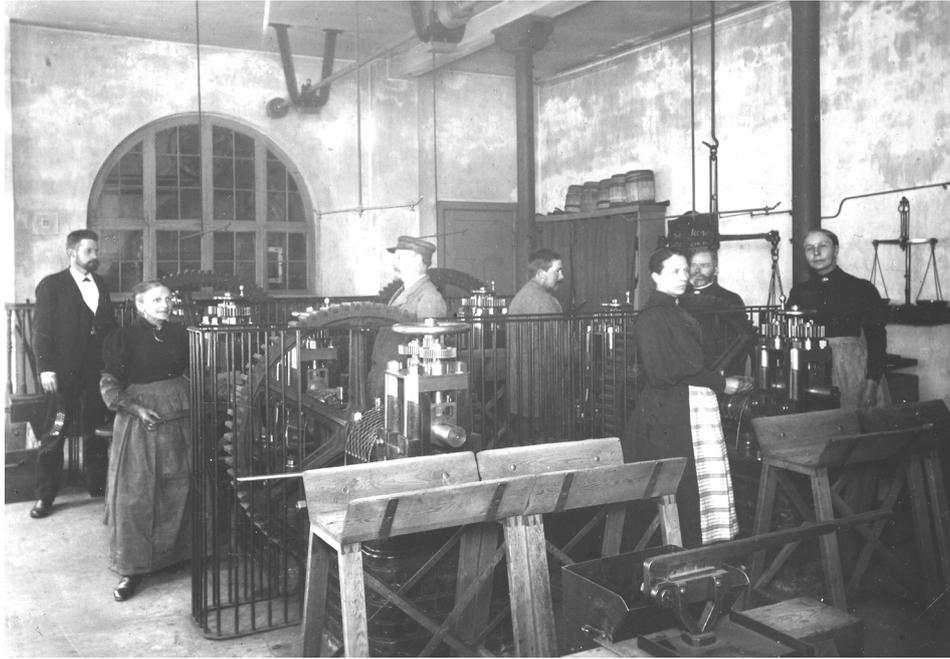
14) Hans Christian Nielsen (1874-1958). Mint master in Copenhagen 1919-1927. Reduced.

Photo: The Royal Library, Copenhagen.



15) Casting of strips at the mint in Copenhagen, probably 1890s. In the background, one e.g. sees crucibles, gas lighting, and strips after the planchets have been punched out.

Photo: The Royal Library, Copenhagen, Frederik Riise (1863-1933).



16) Section of the rolling room at the mint in Copenhagen, probably 1890s. It got gas lighting and eight rolling mills. The entire room probably had 16 mills. In the foreground, one sees a type of plate shears to cut the strips into handy lengths. Notice the power transmission shaft running along the ceiling.

Photo: The Royal Library, Copenhagen, Frederik Riise (1863-1933).



17) Device for measuring the thickness of strips. The strip is placed between two metal points at the left, and then the deflection (thickness) is seen on the scale to the right. Used at the Mint in Copenhagen, probably late 19th century.

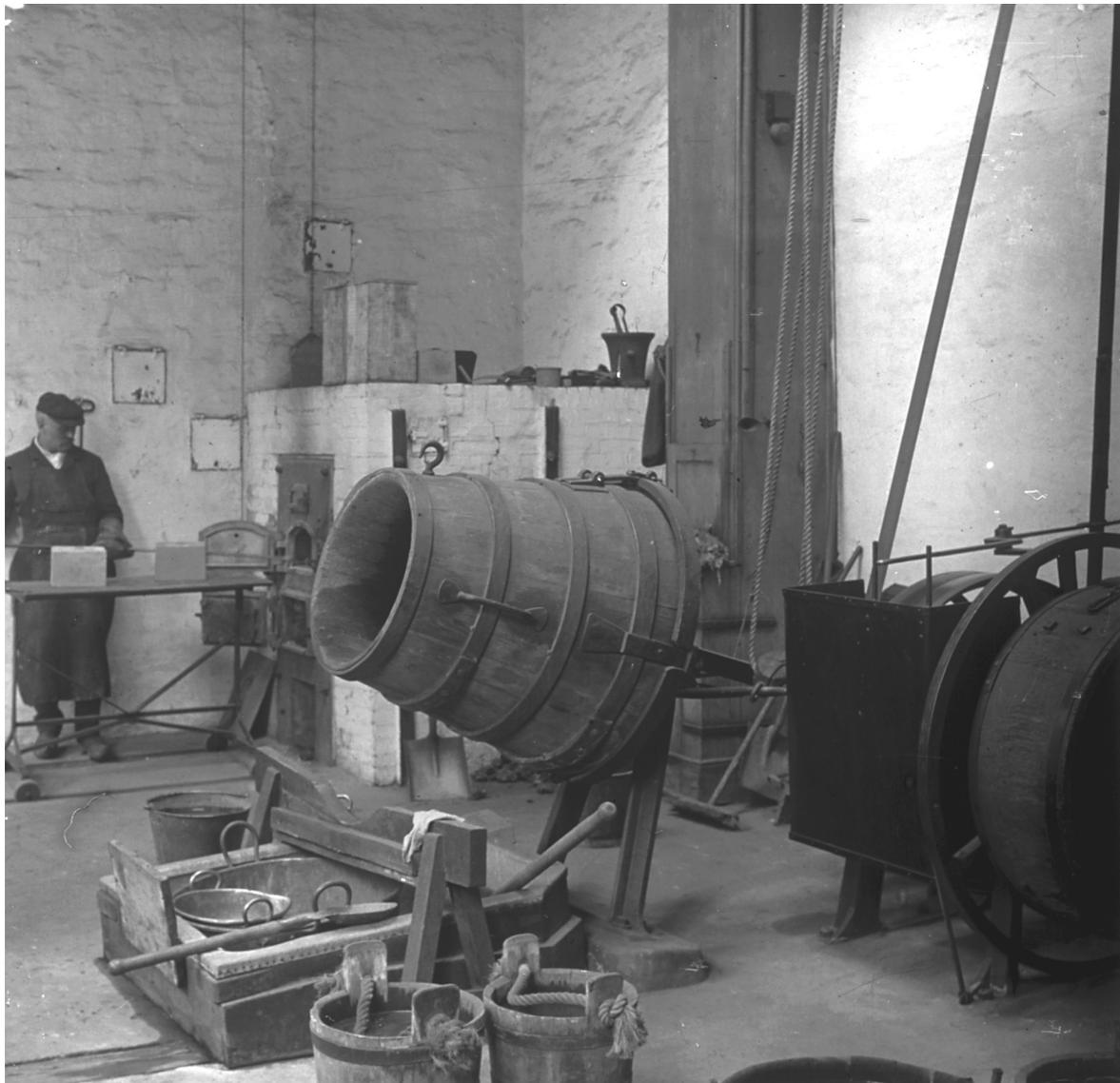
Photo: The Danish Museum of Science and Technology.



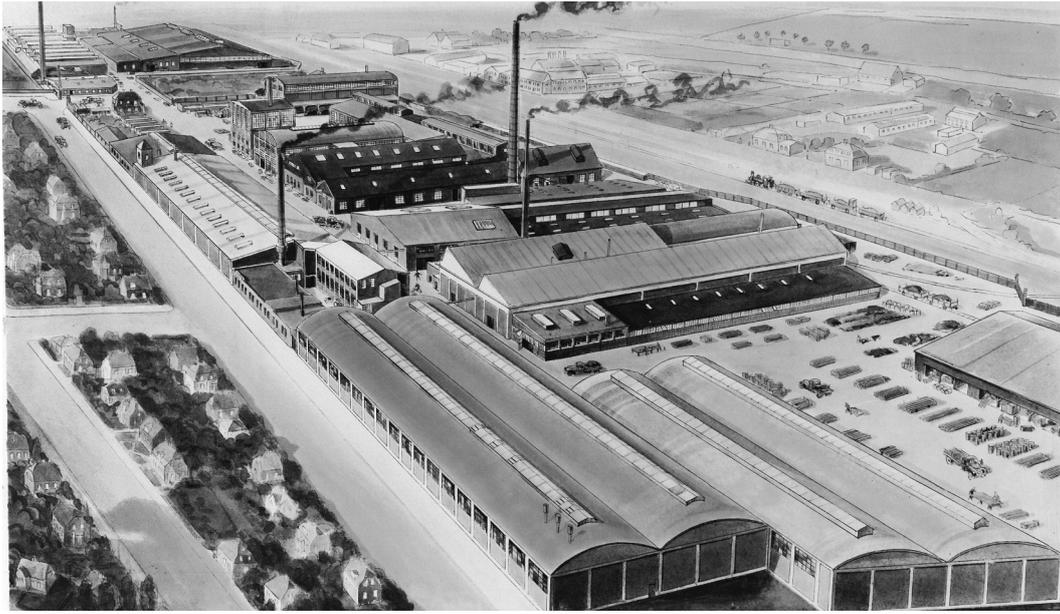
18) Punching out planchets from strip. Mounting at Norwegian Mining Museum.
Photo: Christian Berg.



19) Punching out planchets at the mint in Copenhagen c. 1905-1914. The machine is probably from the 1850s and built in Darmstadt, Germany. Photo: Norwegian Mining Museum.



20) Scouring barrel at the mint in Copenhagen c. 1905-1914.
Photo: Norwegian Mining Museum.



21) The NKT copper works on Amager, 1948. Photo: NKT Exhibition Centre.



22) Denmark, ½ and 1 krone and 2 kroner 1924. Aluminum bronze.



23) Iceland, 1 eyrir, 2 aurar, and 5 aurar 1926 (bronze), 10 and 25 aurar 1922 (cupro-nickel), and 1 króna and 2 krónur 1925 (aluminum bronze). Produced at the mint in Copenhagen.



24) Government of Greenland, 25 øre (cupro-nickel), 50 øre and 1 krone (aluminium bronze) 1926. Produced at the mint in Copenhagen.



25) The Cryolite Mining and Trading Company, Ltd., 10 øre, 50 øre, 2 kroner, 10 kroner (cupro-nickel), and 10 kroner (aluminum bronze) 1922. Produced at the mint in Copenhagen. The aluminum bronze 10 kroner was withdrawn from circulation and replaced by the one in cupro-nickel after a few years, because the aluminum one had the same size and was of the same metal as the Danish 2 kroner from 1924 (Fig. 22).



26) Estonia, 1 marka, 3 marka, and 5 marka 1922. Cupro-nickel.

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The specific interaction between the local and the global, but also between the national and the private, demonstrating the globalisation's mechanisms during the last decades of the 19th century, was the central questions examined in the Session "Business with money: monetary politics and capital flows in the era of the first globalisation" organised by C. Brégianni in the framework of the XVI EBHA Conference, Paris, EHESS, 29 August - 1 September 2012. In this Session we tried to apply a comparative approach concerning monetary systems and numismatic activity; we attended to investigate the past experiences of monetary cooperation but also the cultural transfer and the economic asymmetry that coin's fabrication often represents.

The round table "Small change: bronze or copper coins from Antiquity to 19th c.," was organized by Georges Depeyrot in Paris at the École Normale Supérieure in 2013 (13 - 14 May) in the framework of the ANR DAMIN program and of the LabEx TransferS. During this meeting, the participants tried to understand the role of the small coins (copper, bronze, brass, etc.) in the economy, in the monetarisation of societies and the relation between small change and gold and silver coins.

The last round table "Transfers of precious metals and their consequences, 16th – 19th" took place in Madrid at the Casa de Velázquez on 16 - 17 May 2013. It was organized by Georges Depeyrot and Marina Kovalchuk in the framework of the ANR DAMIN program and of the LabEx TransferS with the support of the Casa de Velázquez. The aim was to compare the consequences of the two main arrivals of precious metals in history, during the 16th century and during the 19th century. The choice of Madrid was linked to the role of Spain and Portugal in relation with the first arrival of gold and silver.



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