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## THE IMPACT OF NOTGELD ON GERMAN HYPERINFLATION IN 1914-1923

### ВПЛИВ НОТГЕЛЬДІВ НА ГІПЕРІНФЛЯЦІЮ НІМЕЧЧИНИ 1914 -1923 РР

*The article focuses on the impact of Notgelds on the inflation processes in Germany in 1914–1923. The process of changing the role of emergency money at different stages of hyperinflation is studied. From the historical point of view, the authors analyze the use of two currencies in parallel: public and private. It is proved that from an economic point of view, private money was much more stable and better protected during hyperinflation. The issues discussed in the article are highly relevant in modern contexts, as the formation of economies with a relative surplus of money has become a characteristic feature of many countries today. Equally important are the challenges of determining the value and nature of money, as well as analyzing the relationship between the volume of money supply and changes in the overall economic situation. The methods for combating inflation and implementing effective policies to stabilize the German currency, as outlined in the article, are successfully applied in the contemporary Ukrainian economy.*

**Keywords:** extraordinary money, Notgelds, hyperinflation, coin, Germany, Treaty of Versailles, money circulation.

В статті основна увага приділена впливу нотгельдів на інфляційні процеси Німеччини 1914–1923 рр. Досліджено процес зміни ролі надзвичайних грошей на різних етапах гіперінфляції. З історичної точки зору зроблений аналіз застосування в грошовому обігу паралельно двох валют: державних і приватних. Доведено, що з економічної точки зору в період гіперінфляції приватні гроші були набагато стабільнішими та краще захищеними. Нотгельди випускали уряди земель, муніципалітети, фірми, магазини, заклади харчування тощо. В дослідженні виявлено, що неурядові гроші випускалися як у формі банкнот, так і формі монет які виготовлялись з різних матеріалів: папір, метал, тканина, старі гральні карти, шкіра, дерево, порцеляна і навіть пресоване вугілля. На сьогодні тематика надзвичайних грошей майже не досліджена, в тому числі і українськими вченими, які займаються історичною складовою грошового обігу та його впливу на інфляційні процеси, хоча неурядові гроші були широко розповсюджені на території ЗУНР, а також на півдні України. Випуск цих грошових знаків на той час був викликаний нестачею готівки загалом, нестачею дрібних розмінних знаків та згодом гіперінфляцією. Проблематика статті є актуальною і в сучасних реаліях, оскільки формування економіки, в якій існує відносний надлишок грошей є характерним для багатьох країн на сьогодні. Також актуальними залишаються проблеми визначення цінності грошей, їх природи, зв'язок обсягів грошової маси зі змінами загальної економічної кон'юнктури. Методи подолання інфляції й формування ефективної політики стабілізації німецької валюти, які зазначені в статті ефективно впроваджуються і в сучасну економіку України. Серед них: стабілізація і стимулювання виробництва, вдосконалення податкової системи, створення ринкової інфраструктури, підвищення відповідальності підприємств за результати господарської діяльності, зміна обмінного курсу грошової одиниці тощо. Приборкання інфляції та здійснення постійного контролю за проведенням грошово-кредитної політики позитивно впливає на досягнення фінансової стабільності в державі.

**Ключові слова:** надзвичайні гроші, нотгельди, гіперінфляція, монета, Німеччина, Версальський договір, грошовий обіг.

**Problem statement.** World War 1 had a very negative impact on the German economy and had lead to high inflation. As Germany had not been able to recuperate the cost from other nations the government increased the volume of currency to pay off debts and

create lower prices for German exports. The Versailles Treaty forced Germany to pay very high reparations to the allied forces. This again fuelled inflation. As there were not enough banknotes available local authorities and companies started issuing emergency money, which

was only valid for a certain period of time in a certain region so called Notgelds. Some of those banknotes were collectors' items not meant for circulation and were therefore created by renowned artists. Inflation kept rising steadily peaking in the hyper-inflation of 1923.

The role of local emergency currencies changed: as opposed to the federal currency they were secured by gold, real estate or foreign currency. By the end of 1923 the Rentenmark – secured by real estate – was introduced and local currencies were slowly withdrawn. In 1924 the Dawes Plan linked the amount of reparations to Germany's economic capabilities and secured investments through international bonds. In 1924 the Reichsmark became legal tender existing in parallel with the Rentenmark until 1948. Thus, we can conclude that 1923 was a year of economic and social decline for Germany, and the fear of hopelessness and poverty has since become deeply rooted in the collective German mind. The German Mark has always been on the hardest currencies in Europe after 1949 both in terms of buying power and exchange rates. For many older Germans the D Mark has very positive connotations because of its stability and the "Wirtschaftswunder", the enormous growth of the economy and prosperity in post war Germany. Especially for the older generation it was a marked contrast to the poverty caused by hyper-inflation between 1918 and 1923.

#### **Analysis of recent research and publications.**

Research on German emergency money started more or less the moment it was issued. As of 1919 Arnold Keller started cataloguing emergency coins and banknotes. Keller was also a pioneer in terms of introducing banknotes as collectibles. It is assumed that Keller had 98% of all banknotes issued in 1914 in his collection. In 1919, two volumes of catalogs were published. This book has been re-issued in 2010 edited by Hans-Jürg Alfred Dießner and amended by Notgelds issued in 1915. In 1919 the journal „Das Notgeld– Zeitschrift für Notgeld kundesowiesonstigen Kriegs- und Revolutions-Sammelsport“ was established. In December of the same year, it had to be closed due to low demand.

In 1920 Keller founded the journal "Das Notgeld". "Das Notgeld der Inflation von 1923" in 8 volumes is to this day the most comprehensive work about Notgelds in that time and has been re-issued and updated by Hans-Ludwig Grabowski in 2024.

As to whether it is actually a complete overview of all emergency money of the time is not known, because their number was extremely large, in different regions of Germany.

The association of German Banknotes and Securities Collectors (DGW e.V.) publish yearbooks, special publications and journals about Notgelds, but purely from a collectors' perspective. However, their impact

on inflationary processes at that time has been hardly studied.

In 1973 the issue was first raised at a symposium at the Ruhr University in Bochum. (Hartmann 2022, p. 24) Martin Geyer looked at inflation in his 1998 book "Verkehrte Welt" and identified it as a decisive factor of the rejection of the Weimar Republic by many Germans. Benjamin Ziemann on the other hand warned in 2010 of a monolithic view of the Weimar Republic and pointed out regional and local differences.

As emergency money was issued locally it can be an important source of information about economic conditions on a local basis. This prompted Johann Hartmann in 2022 to research the topic extensively in an inaugural dissertation. He stated that most research on the Weimar Republic focused "predominantly on its political and constitutional history, and particularly on its later period and demise" [6, p. 21]. One of his major conclusions is that there was financial anarchy by 1923 and that there is not enough evidence to prove whether there was an extreme shortage of cash that made emergency money a necessity or whether it was just an attempt to create a local power base [6, p. 214] in order to weaken the influence of the central government. He also pointed out that some of the local emergency currencies were not stable whereas others were "non-depreciating money, backed by stable securities" [6, p. 215].

In 2023 DSc Dorothee Mußnug published a history of German emergency money from 1919 – 1931 putting the phenomenon in a political and economic context as an overview without adding fundamentally new information.

Liberal economists like Ludwig Mises were sceptical about the state's monopoly on issuing currency. They feared that governments would start printing money thus devaluing currencies in order to pay off debts.

Mises was in favour of banks issuing their own currencies and thus competing for the best one [8, p. 76], which, as we see, was the root because of hyperinflation – at least for a certain period of time.

Also, many works have been devoted to the study of the Notgelds from the point of view of art history [2].

**The purpose of the article** is to analyze the impact of emergency money (Notgeld) on inflationary processes in Germany in 1914–1923. The process of changing the role of emergency money at different stages of hyperinflation is studied. From the historical point of view, the authors analyze the use of two currencies in parallel in monetary circulation: public and private.

**Presentation of the main material.** Germany was hit hardest by hyper-inflation in Europe. These ten years of misery for the many before the "golden twenties" are deeply embedded into the collective German psyche as the fear of immiseration is part of German Angst [1]. It is estimated that Germany

paid about 42 billion Goldmarks in reparations. John Maynard Keynes resigned over the conditions of the Versailles' Treaty as he saw that they would destabilize Germany and as a consequence Europe [8, p. 72]. In order to obtain money, the government took out loans from the Reichsbank who financed them by printing money [5, p. 34]. We see there the same mechanism as in 2014 when the European central bank started buying bonds of countries in financial dire straits, although inflation never turned into hyper-inflation because the circulation of currency was not as overheated as in the early 1920s. In Austria Ludwig von Mises managed to secure a loan from the League of Nations and stabilized the currency by returning to the gold standard and having a calming effect on the socialist and communist parties [9, p. 47].

After the end of the First World War Germany was economically in a very difficult situation. Agricultural production was 40% of the what it had been before the war, there was a lack of workers and raw materials. Furthermore, Germany had no access to foreign markets. The attempt to regulate markets created a black market and thus even more domestic inflation [5, p. 18]. The value of the Mark had by 1918 dropped to half of its value from 1914. 70% of the expenditure for the war were financed by war bonds, the rest through taxes and an increased volume of currency. The volume of money increased by five times during the war [5, p. 17].

The public was generally unaware of the inflation as Germany was a closed economy without transparent exchange rates at the time and the government had plans to re-finance the expenditure for the war through reparations as can be seen in the treaty of Brest-Litovsk from March 1918 [5, p. 18]. Due to the inflation and a lack of small denominations many towns and cities had started issuing their own money which could only be used there. The practice was in theory outlawed in 1919- The emergency money issued locally was not withdrawn and continued to be used. It could be coins or banknotes. Banknotes for small denominations have always been very unusual in Germany. The chemicals company BASF issued money only to be used in the actual factory but soon found out that it had become a currency in the region because it was stable. In the industrial Ruhr region there was virtually no physical currency so that civil servants were paid in vouchers they could use in shops. But the emergency money had to some degree the same issue as the Mark. It was printed with permission of the Reichsbank and communities used it to pay off debts.

The Treaty of Versailles contained some demands that were rather of psychological value but also a loss of 13% of territories, 10% of the population, 15% of agricultural lands, 75% of iron ore and a massive reduction of production capacity for iron, steel and

coal [5, p. 24]. Germany was now more dependent on imports than ever. The Versailles Treaty is not clear about the total of reparations so there are conflicting numbers to be found. But just for 1919-1921 Germany had to pay 20 billion Goldmarks which is 7.186 tons of gold [13, p. 32]. Even without the reparations, the economic situation was volatile at best in 1919.

At this point there was a paper currency called Mark which had lost about half its value in the past for years and the theoretical currency Goldmark which was tied to the gold standard and therefore stable. Germany also reformed its fiscal system in 1919 creating a more stable stream of revenue for the government but also raising taxes [5, p. 34]. However, taxes, tariffs and fees only covered about 1/3 of the government expenditure, the rest was financed through debt [5, p. 64]. The Reichsbank communicated clearly that paying off debt by printing money was not a sustainable solution but as it was not independent but an institution of the ministry of finance, they were ordered to print money. There was a period of hunger, social misery and shortage of housing for the many [12]. The price of bread rose from 1914 to 1921 from 0,25 Marks to almost 3 Marks [13, p. 35]. In 1918 Germany also became a democracy for the first time which created political instability. As a result of the war and the social issues caused by inflation and social upheaval Germany was more or less in a civil war: Communists against authoritarian forces often involving veterans [13, p. 64].

In the early 1920s inflation seemed to work [5, p. 27]: debts disappeared magically and Germany became an attractive place to invest as the USA and the UK were restricting the amount of money in circulation creating a recession. At least in the short run the German economy seemed to be bouncing back to its pre-war capacities [13, p. 42]. But in 1921 the value of the Mark dropped dramatically and food became very expensive. As a result salaries rose which fuelled food prices [13, p. 67]. By September 1921 the state's finances had spun out of control completely. But instead of combatting inflation effectively, the government passed laws against usury and black marketeers [13, p. 69]. The treasury had run out of money and Germany was no longer creditworthy. In 1922 the Reichsbank printed a 10.000 Mark banknote which showed the "Picture of a Young Man" by Albrecht Dürer. However, the picture was slightly altered and when you tilt the banknote by 90 degrees you can actually see the face of a vampire. The message was clear: the allied countries were sucking the blood out of Germany.

So by 1922 issuing local currencies was common practice [11, p. 19]. (Mußnug 2023, p. 19 ff.) But there was also the plan that people would buy these banknotes not as actual currency but as collectors' items. In the beginning quite a lot of them were artistically designed.

Local communities would get money without ever having to repay the debt. And it is doubtful whether all of them would have been able to cover those debts [11, p. 25].

The money issued by the states was official government money. Although there was a central bank in Berlin each state had a subdivision of that central bank. As some of the emergency currencies were also volatile at best many companies were sceptical about its value. So, in some cases factories teamed up with local traders and issued vouchers that could only be redeemed in those shops [11, p. 25].

By July 1922 there had been another federal law against issuing emergency money due to the large amount of forgeries. But it was largely ignored [11, p. 28]. The fact was that the Reichsbank was simply not able to print and deliver the banknotes fast enough. So local solutions were needed to keep the economy going. Strictly speaking most of the emergency money issued at the time were actually vouchers rather than currency because they could only be redeemed in certain regions or sales outlets.

By September 1922 the government grudgingly made the issue of emergency money legal. Some of it were actually municipal bonds secured by the real estate [11, p. 30]. In October 1922 the government of the state of Baden declared that emergency money from the cities of Karlsruhe, Mannheim and Heidelberg were legal tender in all of the state [11, p. 35].

At the end of 1922 BASF issued official banknotes secured by the activa of the company. Since workers travelled both from the Palatinate and from Baden to Ludwigshafen this currency had to be valid as legal tender in both states. The export oriented leather company Freudenberg in Weinheim near Heidelberg managed to pay their works in vouchers for US Dollars [11, p. 42].

By 1922 it was clear that Germany would have no means to pay the reparations the allied powers wanted. With the murder of the politician Walter Rathenau people lost faith in a possible restoration of the state finances. The Mark lost value to an extent that people lost all faith in it and stopped saving. People spent money as soon as they got it because inflation was so fast. Inflation was aggravated by the velocity of the circulation of money. By August 1922 the inflation was 50% - per month [13, p. 94]. A run on foreign currencies started devaluing the Mark even further leading to trading restrictions and outlawing the use of foreign currencies within Germany [13, p. 105]. There was still no resolution in sight for the reparations issue [13, p. 99].

London was willing to negotiate but France was adamant that Germany must pay. There is a banknote from February 1923 issued by the city of Karlsruhe. It shows prospectors looking for gold in the river Rhine with the inscription: "Our ancestors once made coins

from the gold of the Rhine/ the grandchildren are printing zeros on paper".

By the end of 1922 there was cautious optimism as there was a wide spread belief that the prospective new chancellor Stresemann would be able to solve the country's financial problems. But President Ebert did not appoint Stresemann. Instead Wilhelm Cuno was appointed – a business man and a very inexperienced politician. He tried in vain to get the allies to agree on a moratorium for the reparations [13, p. 112].

The escalating conflict with France led to the occupation of the industrial Ruhr area in the west of Germany. This led to drastic developments on the currency markets: the value of the mark plummeted. The amount of cash in circulation rose from under 1.500 billion Marks in 1922 to 2.000 in 1923 [13, p. 123]. The Reichsbank printing press couldn't cope with the demand for papermoney and private enterprises started printing money for the government and sometimes just printed a new denomination over the old [11, p. 14].

By 1923 the Mark had a value one billionth part it had in 1914 before the war. In the beginning of 1923 the exchange rate was 1 Dollar for 7.525 Marks. By September it was 1 Dollar for 200 million Marks [12]. By November the exchange rate was 1: 4,2 billion [9].

Employers were running out of cash. Although emergency money was only meant to be a temporary solution, in 1923 rights to issue emergency money was granted indefinitely [11, p. 46]. One of the reasons for the shortage of banknotes was that Belgian and French troops took large amounts of money on gunpoint from banks [13, p. 135]. In April 1923 the Reichsbank had run out of gold to keep the value of the Mark stable. The fragmented parliament did not manage to come to an agreement. The price for one kilo of potatoes rose from apr. 25 Marks in January 1923 to 350 Marks in June 1923. By 1923 the need for banknotes with ever higher denominations had reached a point that they were no longer designed with any artistic ambitions.

There were hunger riots. The social misery of all classes in Germany was enormous. Many families lost everything [13, p. 170]. This phase of the hyper-inflation has shaped the German collective psyche until today. There still is a deeply rooted fear of losing everything – the wealth Germans have created since 1949. Extremist political parties today still thrive on that fear. It is not a coincidence that late 1923 saw a rise of antisemitism and Hitler's first attempt at a coup d'état [7, p. 290].

Chancellor Cuno resigned in July 1923, the government's finances were completely out of control and the Reichsbank again printed money to pay off debts [13, p. 176]. When Philip Stresemann became chancellor at last it was clear that the Mark had to be substituted by a new, hard currency.



Since summer 1923 it had been clear that a new currency would be needed. But the coalition government could not agree on a system. In November 1923 the new currency was presented. The central bank would no longer be government owned. It was to be financed by the private sector: agriculture, industry, trade and retail. Every business had to pledge 4% of its real estate for the stability of the new currency. This mortgage was to be made out in Goldmarks, so indexed to the gold standard. The issue of banknotes would be linked to the value of the mortgage. So for every 500 Goldmarks mortgage value there would be 500 currency units issued. These banknotes could be converted into bonds for these mortgages. So instead of having a direct gold standard the currency was secured by real estate. This currency was called Rentenmark. The Rentenmark was not legal tender but public offices were obliged to accept it. So the Rentenmark became a parallel currency while the Mark was supposed to recover.

In autumn 1923 inflation hit new heights and many shops flatly refused to accept federal paper money. This is where local emergency currencies come in. Some of them were backed by gold, real estate or foreign currency and much more stable than the Mark [13, p. 290]. Emergency money had largely substituted the federal currency Mark. Current research states that local emergency currencies were the most important factor to stabilize the economy before the introduction of the Rentenmark [11, p. 64].

As to how many different types of emergency currencies there were: nobody knows. The collector Hans-Ludwig Grabowski compiled 14 volumes with over 500 pages each about emergency currencies in Germany. Nobody actually knows whether this is a complete overview or whether there are still unknown currencies. It is assumed that by 2023 over 5.800 private

or official authorities issued emergency money [4, p. 5]. The main point is that Mises was right: if central banks are not independent, governments will abuse them to pay off debts.

The salvation from hyper-inflation in Germany came not from the government but from private enterprise. In mid November the Rentenmark was officially introduced. In parallel the Reichsbank stopped printing money. That stabilized the exchange rate of the Mark internationally. This in turn synchronized the exchange rate between Rentenmark and Mark.

In 1924 Germany and the allied powers agreed on the Dawes Plan which linked reparations to the economic capabilities of Germany. This was combined with bonds in foreign currencies for investments. In the same year the Reichsmark became the new currency which existed in parallel to the Rentenmark until 1948 [5, p. 37]. Emergency currencies continued to exist until 1931. The main reason was the inability of the Reichsbank to exchange the emergency currencies for Reichsmarks. Although in 1923 a much more stable currency than the Mark, by 1924 emergency currencies were no longer popular as they varied in stabilities and there were forged banknotes in circulation [11, p. 76].

**Conclusions.** Thus, it can be concluded that Germany's emergency currencies that were in circulation in 1914–1923 had a significant impact on inflation control. Since the issuance of Notgelds was not approved by the Reichsbank, they were considered illegal means of payment from a legal point of view, but in the context of the First World War, the postwar difficulties, and later the economic crisis of the first half of the 1920s, no one paid attention to this. Of course, no country can be insured against inflation. However, it is quite possible to resist inflation, calculating all possible consequences in advance: in a balanced, thoughtful, rational way.

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