

# Hyperinflation in the General Government

## German-Occupied Poland During the Second World War

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### Key Points

- Newly discovered primary data reveals two previously undiscovered episodes of hyperinflation. They occurred in German-occupied Poland from late 1939 to early 1945.
- Nazi-occupied Poland, a territory then referred to as the General Government, experienced monthly inflation rates of 71.4% in January 1940 and 54.4% in August 1944.
- Inclusion of the 1940 and 1944 Polish cases of hyperinflation brings the total number of episodes of hyperinflation documented in the Hanke-Krus World Hyperinflation Table to 60.
- With these newly discovered cases, Poland has experienced more episodes of hyperinflation—four—than any other country in the world.

Two episodes of hyperinflation plagued German-occupied Poland from late 1939 to early 1945. Indeed, Nazi-occupied Poland, a territory then referred to as the General Government, experienced monthly inflation rates of 71.4% in January 1940 and 54.4% in August 1944. Two broad conclusions can be drawn from the discovery of the General Government's two episodes of hyperinflation during the Second World War. First, given these newly discovered cases, Poland has experienced more episodes of hyperinflation—four—than any other country in the world (Hanke and Krus, 2013; and Hanke and Bushnell, 2017). Second, inclusion of the 1940 and 1944 Polish

cases of hyperinflation bring the total number of episodes of hyperinflation to 60.

### The General Government in Poland

Following German conquest at the start of the Second World War, Poland was divided into three territories. One territory was annexed by the German Third Reich and a second territory by the Soviet Union. The third Polish territory was partitioned as the General Government and became a puppet region subject to Nazi German oversight (see Figure 1). The General Government stretched across the southeast portion of present-day Poland, that included key metropolitan centers such as Warsaw, Krakow, and Lublin, and it established a central government in Krakow. Under General Government administration, Poles were denied significant self-government. The General Government, presided over by Hans Frank, was administered

Figure 1: Map of Poland during Second World War



Source: *Behind Closed Doors*, Public Broadcasting Service, available at [www.pbs.org/behindcloseddoors/maps/poland\\_divided.png](http://www.pbs.org/behindcloseddoors/maps/poland_divided.png) and accessed April 11, 2014.

by officials appointed by Hitler's Nazi Party (Landau and Tomaszewski, 1985: pp. 144–5).

Like other continental European territories, the General Government was subject to physical and fiscal damage from the Second World War. War events damaged approximately 5% of industrial machinery and factors of production in the General Government. In the first two years of the German occupation of Poland, many Polish factories had their operations dismantled and their equipment shipped to Germany. As a result, output levels in Poland fell to below 30% of prewar rates (Jeziernski and Leszczynska, 1998: pp. 354–5). The industrial infrastructure that survived until 1943 was restructured to produce war materials. Raw materials were also extracted from Poland in increasing quantities. For example, the total tonnage of coal mined in Poland rose from 38 million in 1938 to 52 million in 1943. At the same time, oil production in Poland jumped by 20%, and natural gas output rose by 13% from prewar levels (Landau and Tomaszewski, 1985: pp. 159–60).

The economic exploitation of Poland was also detrimental to the production and distribution of food. During the war, food was scarce, and the production of foodstuffs decreased by 50%. The number of wholesale firms in the region fell from 8,000 to 800, while the number of retail shops dropped from 195,000 to about 50,000 (Landau and Tomaszewski, 1985: pp. 160, 169). The General Government further disrupted the distribution of food and consumer goods by creating a system of rations based on coupons. Food rationing only provided enough foodstuffs to meet 30% of the necessary daily caloric intake (Jeziernski and Leszczynska, 1998: p. 357). This inadequate system left the population desperate for alternative sources of food, which they found on a black market.

### **The Black Market**

In wartime Poland, consumers bridged the gaps in their food needs created by government rations through an extensive black market fueled by an elaborate network of smugglers and corrupt government officials. The Polish black market was highly organized and large in scale. Black market participants faced serious legal ramifications if caught, so little official

information exists about the market. However, it is apparent that the product offerings on the black market were extensive, including food and consumer goods, industrial products, and monetary exchange. There was also an illicit stock exchange that recorded share prices and quoted currency rates. By 1942, black market trade supplied 80% of all food in the General Government. In 1941, it is estimated that the black market was responsible for providing 73% of protein supplies, 90% of fat supplies, and 63% of carbohydrate supplies (Landau and Tomaszewski, 1985: p. 171).

The robustness of the black market is critical to understanding the relationship between the Polish consumer population and the General Government administration. Under German occupation, Polish workers were considered inferior to German workers: lower wages and higher tax rates for Polish workers reflected this sentiment. In 1943, the monthly wage of a Polish worker was equal to the black-market price for 1 kilogram of butter. Wages simply did not adequately cover the cost of living. There was also an economic gap in quality of life between urban and rural Polish populations. Farmers enjoyed a higher standard of living than urban workers because they were able to sell surplus agricultural products on the black market (Landau and Tomaszewski, 1985: pp. 173–7).

## **The Monetary System**

Before the German occupation, Poland had a functioning monetary system run by the national Bank Polski. The prewar local currency was the zloty. Following the division of Poland into three territories, Germany maintained central control over prices and wages in German-occupied Poland and in the General Government territory. In German-occupied Poland, the German mark replaced the zloty at an exchange rate of 2 zloty per mark (Wojtowicz and Wojtowicz, 2005: p. 170). In Russia-occupied Poland, the ruble replaced the zloty. The General Government retained the zloty as the national currency. However, following the establishment of new currencies in the annexed Polish territories, excess currency no longer used in much of Poland flowed into the General Government. The inflows of zloty resulted in rapid

inflation in 1939 and the subsequent hoarding of consumer goods by the population.

To stop inflation, the General Government tried to control the circulation of large bank notes, but eventually transitioned to a new monetary system altogether. On December 15, 1939, it formed a monetary regime in Krakow under a new bank called the Bank Emisyjny w Polsce (Bank of Issue in Poland). The Bank Emisyjny w Polsce was subject to German control despite the appointment of Feliks Mlynarski, a Pole, as chief of the bank. In April 1940, it began issuing money, discounting exchange bills and checks, issuing short-term loans, and accepting deposits. However, the bank was not independent and followed the policies of Third Reich banking (Jeziarski and Leszczynska, 1998: p. 359).

To maintain control over currency circulation, the bank issued a new currency, the *krakowzloty*, also known as the *mlynarki*, after the bank's head (Wojtowicz and Wojtowicz, 2005: p. 172). In January 1940, the bank recalled all the prewar 50 and 100 zloty bills and started a process of currency exchange that lasted until May 1940 (Jeziarski and Leszczynska, 1998: p. 359). Initially, the occupation authorities wanted to ensure that the *krakowzloty* gained traction among the local population. The old zloty was traded in for the new currency at a 1:1 official exchange rate (Landau and Tomaszewski, 1985: p. 167). The official exchange rate at which the new currency could be exchanged for the German mark was 2:1. During the introduction of the new currency, Poles were encouraged to freely exchange their old currency without limitations.

However, following the initial transition, the General Government bank administration began printing excess currency to cover debts. The first currency production effort produced 2.6 billion *krakowzloty*, of which 1.3 billion made it into circulation. The rest remained in the vaults. Initial printing was well calculated, but the policy of printing money quickly became a tool of war. Throughout the remaining four years of German occupation, the General Government continued to issue excess currency without hesitation. Note circulation in the General Government increased by 1,000% over the occupation years (Jeziarski and Leszczynska, 1998: p. 359) while wages remained frozen (Landau and Tomaszewski, 1985:

p. 168). By 1945, when the original Bank Polski was re-established in Poland, there were 11.3 billion krakowzloty in circulation and the population had been driven to poverty and desperation.

## **Currency and Inflation**

A combination of frozen wages, rations, and a seemingly endless supply of printed money created great instability in the General Government economy. These policies resulted in rampant inflation in both the official market and the black market. Germany intentionally conducted an inflationary policy, since the Bank of Issue was primarily a way of funding for the German army stationed in the General Government. Germany used inflation to weaken Polish resistance and finance German war operations. Over the course of the war, more than 11 billion krakowzloty were printed to finance the operations of the German Army (Jeziarski and Leszczynska, 1998: p. 359). German inflationary policy further taxed a population that had already been marginalized by the German government, which intended to “shift the weight of the war on to the masses” (Skalniak, 1966: p. 240).

Protecting the German economy was a central goal for implementing a separate monetary system in the General Government territory. The German currency was unaffected by Polish currency inflation, but additional currency still ended up in the hands of Germans. A desire to protect the German economy was one reason why hyperinflation episodes in Poland ended quickly. Germany had experienced rampant inflation following the First World War. There, hyperinflation peaked in October 1923 with a monthly rate of 29,500%. Based on the historical data for hyperinflation in Germany, German officials estimated that extended periods of hyperinflation would have had disastrous consequences for both the Polish and German economies. On this reasoning, inflation was maintained in Poland at an elevated but “controlled” rate.

## **Black Market for Currency**

Given extensive inflation in Poland during the Second World War, many people gave up the use of currency in favor of a barter system. However, there was also a black money market, organized through tearooms and cafes, where gold, United States dollars, and gold Russian rubles were traded in place of the *krakowzloty* (Wojtowicz and Wojtowicz, 2005: p. 173). The high cost of foreign currencies reflected the risk that currency traffickers undertook. A trafficker caught illegally trading foreign currencies would have been sent to prison, possibly for the rest of their life. Between January 1940 and December 1942, the cost of 1 United States dollar was anywhere from 30 to 200 *krakowzloty*. However, the price of the US dollar did not increase as much as either the gold dollar or the gold ruble. It is speculated that, since there was a great deal of uncertainty in the future value of the US dollar—which depended on the outcome of the war—the demand for and price of the dollar increased more slowly than gold-linked foreign currencies.

For a gold dollar, the lowest price was 65 *krakowzloty* in January of 1940, and it reached 650 *krakowzloty* in January 1944. Since gold dollar coins were made out of actual gold in a time when other money was paper, this price rise reflected the hoarding mentality of the Polish saver. Since investments in land and other large-scale tangible goods were nearly impossible under the General Government regime, many people viewed concealable gold coins as a relatively safe investment. In a time of scarcity in Poland, an asset that would always be tradable for any currency offered some economic resolve.

## **Prices**

Official market and black-market prices varied dramatically in Poland during the Second World War. Official prices were set by the Bureau of Price Control, while black market prices fluctuated in response to market conditions (Jeziarski, 1994: p. 364). Between 1941 and 1944, official prices of all goods increased by 20%, while black-market prices increased 200–500%, depending on the item and the region in which it was being sold. Both Germans and Poles living in the General Government participated in the black market. Continuous drops in the purchasing power of the Polish

population were reflected in the rising prices on the black market (Jezierski and Leszczynska, 1998: pp. 358–9). Interestingly, as the Polish population placed increasing value on common goods during German occupation, the relative price differences between common goods and luxury goods were minimized (Skalniak 1966: p. 241).

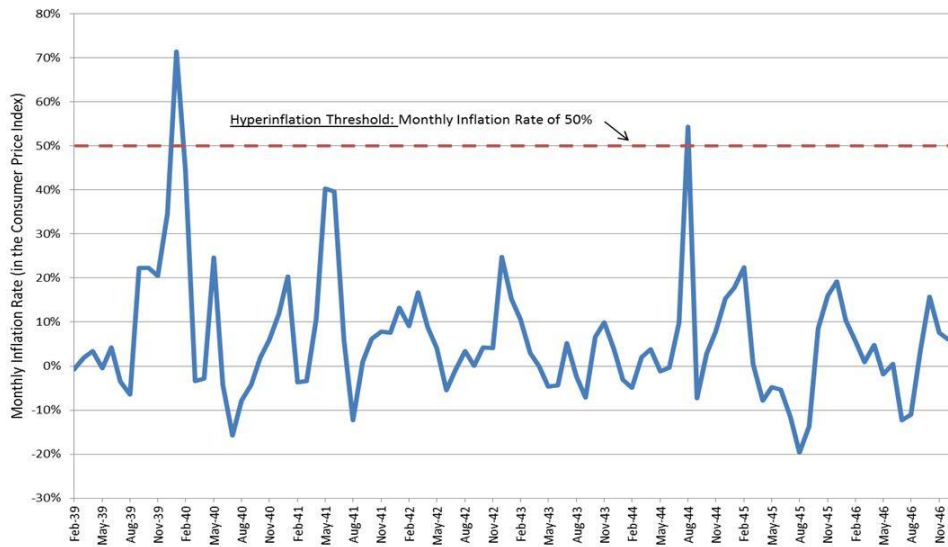
Due to wartime constraints on the production and distribution of goods, there was significant regional price variation within the General Government. For example, prices might vary from Krakow to Warsaw, depending on the proximity of suppliers and the extent of government policing of goods in the region. Bribery was often used to facilitate the transport of goods without interference by government administrators and security forces (Jezierski, 1994: p. 367). During periods of increased confiscation of goods, prices increased dramatically in Polish urban ghettos, which often faced scarcity and extremely difficult supply conditions (Landau and Tomaszewski, 1985: p. 172). Extraordinary circumstances supplemented traditional supply and demand in the Polish wartime black market.

## **Hyperinflation**

Although inflation constantly plagued the General Government, “only” two instances of hyperinflation occurred between 1939 and 1944. Both the January 1940 and August 1944 hyperinflation episodes lasted for a period of only one month. In each instance, the monthly inflation rate was greater than 50%: 71.4% in January 1940 and 54.4% in August 1944 (see Figure 2). Although price data are limited to Krakow, the retail prices used to calculate the hyperinflation can be used as a proxy for prices in all other major urban areas in the General Government. These data reflect monthly retail price information for food and household staples of the time. Wholesale price data are unavailable in large part because wholesale pricing was extremely limited during the Second World War (Smoliwski, 1947: pp. 3–4).



**Figure 2: Krakow monthly inflation rates**



Source: Smoliwski (1947) and author's calculations.

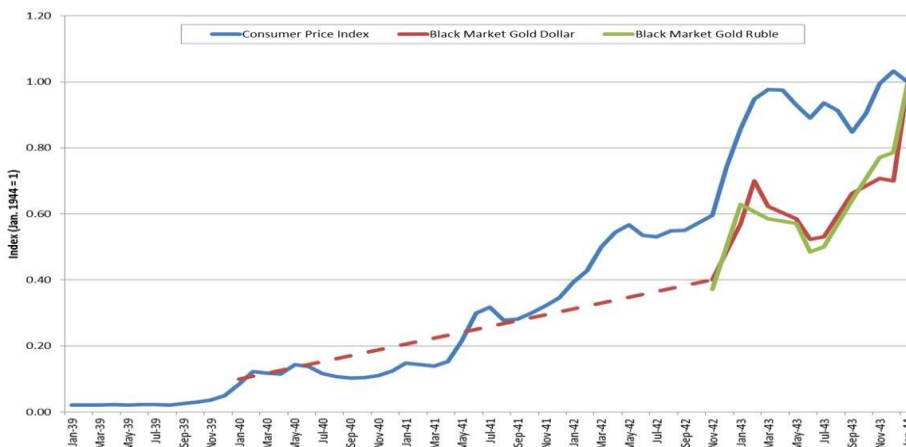
Using a large sample of price data ensured the statistical significance of each value. While the research reflects the available data, it should be noted that there were several instances of goods for which no monthly data were available. This discrepancy has a small impact on the accuracy of the final percentages. Exchange rate data were also gathered for the study, and a strong relationship exists between the exchange rate fluctuations and the general price patterns (see Figures 3.1 and 3.2). Figure 4 shows the discrepancies between the black market and government-regulated prices, which saw a 2,000% discrepancy by 1944.

**Figure 3.1: Exchange of certain currencies on the black market in the General Government between 1940 and 1944 (in zloty)**

Period		Black-market zloty/foreign currency FX rate			Black-market FX rate (January 1944 = 1)		
		Gold dollar	Gold ruble	Paper dollar	Gold dollar	Gold ruble	Paper dollar
January	1940	65		100	0.10		1.05
February	1940			200			2.11
March	1940			100			1.05
April	1940			170			1.79
June	1940			65			0.68
August	1940			30			0.32
November	1942	260	130	50	0.40	0.37	0.53
January	1943	370	220	130	0.57	0.63	1.37
February	1943	455		165	0.07		1.74
March	1943	405	205	110	0.62	0.59	1.16
May	1943	380	200	85	0.06	0.57	0.89
June	1943	340	170	80	0.52	0.49	0.84
July	1943	345	175	75	0.53	0.50	0.79
September	1943	430	225	95	0.66	0.64	1.00
November	1943	460	270	95	0.71	0.77	1.00
December	1943	455	275	95	0.70	0.79	1.00
January	1944	650	350	95	1.00	1.00	1.00

Source: Luczak (1979), p. 432.

**Figure 3.2: Price and exchange rate fluctuations**



Source: Smoliwski (1947), Luczak (1979), and author’s calculations.

**Figure 4: Free market vs. government prices**

Date	Government Prices	Free market Price	Change
1941	20.61	22.53	9.30%
1942	17.38	119.04	584.93%
1943	18.28	261.77	1,331.72%
1944	17.93	397.80	2,119.27%

Source: Luczak (1979), p. 432.

There are three major explanations for price fluctuations between 1939 and 1944. The first two state that seasonal fluctuations caused by short-term climate change and cyclical fluctuations characteristic of long-term macroeconomic patterns caused the significant changes in prices. However, political events caused the most significant price fluctuations. During the war, the Bank of Issue was overprinting money to fund the German Army at a time when wages were stagnant and official prices were capped. These inflationary policies, along with seasonal and cyclical price fluctuations, caused two clear episodes of hyperinflation.

The first episode of hyperinflation, in January 1940, shows a monthly inflation rate of 71.4%. Although there was no single direct cause for this hyperinflation, prices had been steadily rising since September 1939.

A number of political and war-related events contributed to the January episode of hyperinflation. On September 27, 1939, the prewar Polish government surrendered to Germany and went into exile when the Nazi occupation began. In October 1939, agricultural prices started to rise as the population began to hoard surplus food in anticipation of future scarcity. This effect was likely magnified by the opening of the Bank of Issue in December 1939, which began in January 1940 with the recall of prewar large notes and the issuance of the *krakowzloty* in 1940.

The second episode of hyperinflation occurred in August 1944, as the monthly inflation rate reached 54.4%. Once again, political events heavily

influenced the hyperinflation. In 1944, the Warsaw uprising was the most powerful Polish resistance to German occupation since the start of the Second World War. Business in Warsaw and in other major cities was temporarily frozen owing to resistance fighting. After the Warsaw uprising began, the price of industrial and agricultural goods became exponentially more expensive as a result of the domestic and front-line fighting. Additionally, a Soviet offensive in July 1944 to the east caused further supply problems for staple goods. Railroad transport was frozen and both freight and passenger traffic were severely limited, causing dramatic price increases. Finally, Germany underwent a forced evacuation from Krakow, triggering a supply panic as evacuees bought all available foodstuffs, soap, leather, and other staples (Smoliwski, 1947: p. 11). The cumulative effects of the domestic uprisings in Poland, major battles abroad, and a high degree of supply uncertainty among consumers all contributed to the second episode of hyperinflation.

Another notable episode of high inflation is seen from May and June 1941. This episode of high inflation saw monthly inflation rates of 39.6% and 40.3%. This episode is not classified as hyperinflation, because there was no single month in which inflation was at least 50%. This two-month-long period of high inflation happened on the eve of the German invasion of the Soviet Union. A significant number of soldiers were being shipped to the eastern border of Germany, congesting railroads and inflating the price of coal. Seasonal price fluctuations amplified high prices, as did the exceptionally scarce food rations that were handed out during that period. During this tumultuous time, prices were significantly driven up in Poland.

The Polish Bank of Issue closed on January 18, 1945, ending wartime inflationary policies (Jeziarski and Leszczynska 1998: p. 360). Annual inflation dropped from 93.4% in 1944 to a more acceptable 11.2% in 1945. The end of the Second World War saw the fall of a monetary regime that was responsible for the widespread poverty and inflation in the General Government during the early 1940s.

## Conclusion

Scarcity was a constant affliction in the General Government territory. Industrial production served the war effort, and violence and destruction were rampant both in Poland and beyond its eastern border. During the German occupation, a monetary regime with inflationary monetary policies forced out the more moderate Bank of Poland. A new currency in the General Government further complicated matters, allowing Germany to freely print money to fund war efforts. In response to these actions, a flourishing black market emerged in an environment of fixed prices and low wages, and hyperinflation ensued. Two instances of hyperinflation and one instance of very high inflation occurred under the General Government. These episodes provide a unique look into the detrimental government policies and wartime disasters that had catastrophic effects on the Polish economy, the Polish people, and the postwar rebuilding process in the region.

## References

- Hanke, Steve H., and Bushnell, Charles (2017). On measuring hyperinflation: Venezuela's episode. *World Economics* 18, 3.
- Hanke, Steve H., and Krus, Nicholas (2013). World hyperinflations. In: Randall Parker and Robert Whaples (eds), *Routledge Handbook of Major Events in Economic History* (London: Routledge).
- International Monetary Fund (2004). *Consumer Price Index Manual: Theory and Practice* (Washington DC: IMF).
- Jeziarski, Andrzej (1994). *Bank Polski SA, 1924–1951* (Warsaw: Narodowy Bank Polski).
- Jeziarski, Andrzej, and Leszczynska, Cecylia (1998). *Historia Gospodarcza Polski* (Warsaw: Wydawn).
- Landau, Zbigniew, and Tomaszewski, Jerzy (1985). *The Polish Economy* (Sydney: Croom Helm Ltd).

Luczak, Czeslaw (1979). *Polityka ludnościowa I: ekonomiczna hitlerowskich Niemiec w Okupowanej Polsce* (Poznan: Wydawn).

Skalniak, Franciszek (1966). *Bank Emisyjny w Polsce 1939–1945* (Warsaw: Panstwowe Wydawnictwo Ekonomiczne).

Smoliwski, Stanislaw (1947). *Rozwoj Detalicznychcen Wolnorynkowych w Krakowie w Latach 1939–1946* (Poznan: Akademia Handlowa).

Wojtowicz, Grzegorz, and Wojtowicz, Anna (2005). *A Monetary History of Poland* (Warsaw: Twigge).

**APPENDIX I: THE HANKE-KRUS HYPERINFLATION TABLE (2013, AMENDED 2020)**

LOCATION	START DATE	END DATE	MONTH WITH HIGHEST INFLATION RATE	HIGHEST MONTHLY INFLATION RATE	EQUIVALENT DAILY INFLATION RATE	TIME REQUIRED FOR PRICES TO DOUBLE	CURRENCY	TYPE OF PRICE INDEX
Hungary <sup>1</sup>	Aug. 1945	Jul. 1946	Jul. 1946	4.19 × 10 <sup>16</sup> %	207%	15.0 hours	Pengő	Consumer
Zimbabwe <sup>2</sup>	Mar. 2007	Mid-Nov. 2008	Mid-Nov. 2008	7.96 × 10 <sup>10</sup> %	98.0%	24.7 hours	Dollar	Implied Exchange Rate*
Yugoslavia <sup>3</sup>	Apr. 1992	Jan. 1994	Jan. 1994	313,000,000%	64.6%	1.41 days	Dinar	Consumer
Republika Srpska <sup>4</sup>	Apr. 1992	Jan. 1994	Jan. 1994	297,000,000%	64.3%	1.41 days	Dinar	Consumer
Germany <sup>5</sup>	Aug. 1922	Dec. 1923	Oct. 1923	29,500%	20.9%	3.70 days	Papiermark	Wholesale
Greece <sup>6</sup>	May. 1941	Dec. 1945	Oct. 1944	13,800%	17.9%	4.27 days	Drachma	Exchange Rate‡
China <sup>7</sup>	Oct. 1947	Mid-May 1949	Apr. 1949	5,070%	14.1%	5.34 days	Yuan	Wholesale for Shanghai
Free City of Danzig <sup>8</sup>	Aug. 1922	Mid-Oct. 1923	Sep. 1923	2,440%	11.4%	6.52 days	German Papiermark	Exchange Rate**
Armenia <sup>9</sup>	Oct. 1993	Dec. 1994	Nov. 1993	438%	5.77%	12.5 days	Dram & Russian Ruble	Consumer
Turkmenistan <sup>10</sup>	Jan. 1992	Nov. 1993	Nov. 1993	429%	5.71%	12.7 days	Manat	Consumer
Taiwan <sup>11</sup>	Aug. 1945	Sep. 1945	Aug. 1945	399%	5.50%	13.1 days	Yen	Wholesale for Taipei
Peru <sup>12</sup>	Jul. 1990	Aug. 1990	Aug. 1990	397%	5.49%	13.1 days	Inti	Consumer
Bosnia and Herzegovina <sup>13</sup>	Apr. 1992	Jun. 1993	Jun. 1992	322%	4.92%	14.6 days	Dinar	Consumer
Venezuela <sup>14</sup>	Nov. 2016	Feb. 2019	Jan. 2019	315%	4.86%	14.8 days	Bolivar	Exchange Rate
France <sup>15</sup>	May 1795	Nov. 1796	Mid-Aug. 1796	304%	4.77%	15.1 days	Mandat	Exchange Rate

## Hyperinflation in the General Government (German-Occupied Poland)

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China <sup>16</sup>	Jul. 1943	Aug. 1945	Jun. 1945	302%	4.75%	15.2 days	Yuan	Wholesale for Shanghai
Ukraine <sup>17</sup>	Jan. 1992	Nov. 1994	Jan. 1992	285%	4.60%	15.6 days	Russian Ruble	Consumer
Poland <sup>18</sup>	Jan. 1923	Jan. 1924	Oct. 1923	275%	4.50%	16.0 days	Marka	Wholesale
Nicaragua <sup>19</sup>	Jun. 1986	Mar. 1991	Mar. 1991	261%	4.37%	16.4 days	Córdoba	Consumer
Congo (Zaire) <sup>20</sup>	Nov. 1993	Sep. 1994	Nov. 1993	250%	4.26%	16.8 days	Zaire	Consumer
Russia <sup>21</sup>	Jan. 1992	Jan. 1992	Jan. 1992	245%	4.22%	17.0 days	Ruble	Consumer
Bulgaria <sup>22</sup>	Feb. 1997	Feb. 1997	Feb. 1997	242%	4.19%	17.1 days	Lev	Consumer
Moldova <sup>23</sup>	Jan. 1992	Dec. 1993	Jan. 1992	240%	4.16%	17.2 days	Russian Ruble	Consumer
Russia / USSR <sup>24</sup>	Jan. 1922	Feb. 1924	Feb. 1924	212%	3.86%	18.5 days	Ruble	Consumer
Georgia <sup>25</sup>	Sep. 1993	Sep. 1994	Sep. 1994	211%	3.86%	18.6 days	Coupon	Consumer
Tajikistan <sup>26</sup>	Jan. 1992	Oct. 1993	Jan. 1992	201%	3.74%	19.1 days	Russian Ruble	Consumer
Georgia <sup>27</sup>	Mar. 1992	Apr. 1992	Mar. 1992	198%	3.70%	19.3 days	Russian Ruble	Consumer
Argentina <sup>28</sup>	May 1989	Mar. 1990	Jul. 1989	197%	3.69%	19.4 days	Austral	Consumer
Zimbabwe <sup>29</sup>	Sep. 2017	Oct. 2017	Oct. 2017	185%	3.56%	20.1 days	"New Zim Dollar"	Implied Exchange Rate
Bolivia <sup>30</sup>	Apr. 1984	Sep. 1985	Feb. 1985	183%	3.53%	20.3 days	Boliviano	Consumer
Belarus <sup>31</sup>	Jan. 1992	Feb. 1992	Jan. 1992	159%	3.22%	22.2 days	Russian Ruble	Consumer
Kyrgyzstan <sup>32</sup>	Jan. 1992	Jan. 1992	Jan. 1992	157%	3.20%	22.3 days	Russian Ruble	Consumer



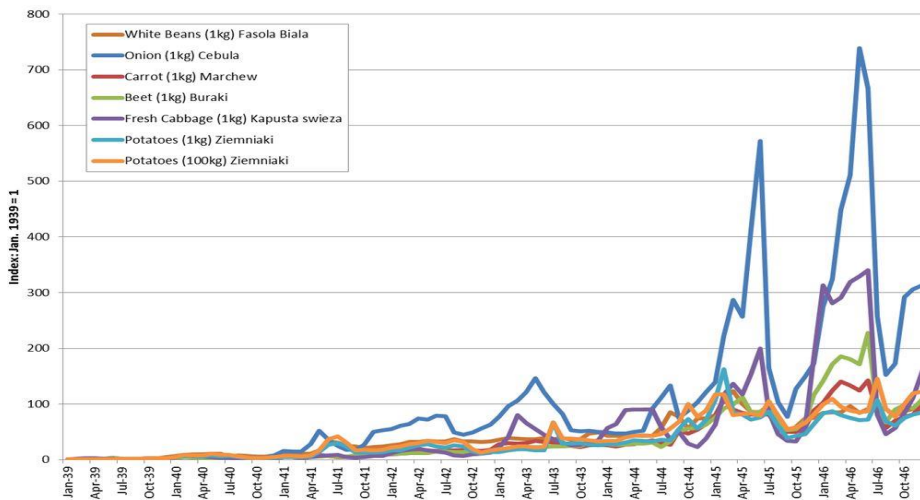
LOCATION	START DATE	END DATE	MONTH WITH HIGHEST INFLATION RATE	HIGHEST MONTHLY INFLATION RATE	EQUIVALENT DAILY INFLATION RATE	TIME REQUIRED FOR PRICES TO DOUBLE	CURRENCY	TYPE OF PRICE INDEX
Kazakhstan <sup>33</sup>	Jan. 1992	Jan. 1992	Jan. 1992	141%	2.97%	24.0 days	Russian Ruble	Consumer
Austria <sup>34</sup>	Oct. 1921	Sep. 1922	Aug. 1922	129%	2.80%	25.5 days	Crown	Consumer
Bulgaria <sup>35</sup>	Feb. 1991	Mar. 1991	Feb. 1991	123%	2.71%	26.3 days	Lev	Consumer
Uzbekistan <sup>36</sup>	Jan. 1992	Feb. 1992	Jan. 1992	118%	2.64%	27.0 days	Russian Ruble	Consumer
Azerbaijan <sup>37</sup>	Jan. 1992	Dec. 1994	Jan. 1992	118%	2.63%	27.0 days	Russian Ruble	Consumer
Congo (Zaire) <sup>38</sup>	Oct. 1991	Sep. 1992	Nov. 1991	114%	2.57%	27.7 days	Zaïre	Consumer
Peru <sup>39</sup>	Sep. 1988	Sep. 1988	Sep. 1988	114%	2.57%	27.7 days	Inti	Consumer
Taiwan <sup>40</sup>	Oct. 1948	May 1949	Oct. 1948	108%	2.46%	28.9 days	Taipei	Wholesale for Taipei
Hungary <sup>41</sup>	Mar. 1923	Feb. 1924	Jul. 1923	97.9%	2.30%	30.9 days	Crown	Consumer
Chile <sup>42</sup>	Oct. 1973	Oct. 1973	Oct. 1973	87.6%	2.12%	33.5 days	Escudo	Consumer
Estonia <sup>43</sup>	Jan. 1992	Feb. 1992	Jan. 1992	87.2%	2.11%	33.6 days	Russian Ruble	Consumer
Angola <sup>44</sup>	Dec. 1994	Jan. 1997	May 1996	84.1%	2.06%	34.5 days	Kwanza	Consumer
Brazil <sup>45</sup>	Dec. 1989	Mar. 1990	Mar. 1990	82.4%	2.02%	35.1 days	Cruzado&Cruzeiro	Consumer
Democratic Republic of Congo <sup>46</sup>	Aug. 1998	Aug. 1998	Aug. 1998	78.5%	1.95%	36.4 days	Franc	Consumer
Poland <sup>47</sup>	Oct. 1989	Jan. 1990	Jan. 1990	77.3%	1.93%	36.8 days	Zloty	Consumer
Armenia <sup>48</sup>	Jan. 1992	Feb. 1992	Jan. 1992	73.1%	1.85%	38.4 days	Russian Ruble	Wholesale
General Government (Poland) <sup>49</sup>	Jan. 1940	Jan. 1940	Jan. 1940	71.4%	1.81%	39.1 days	Zloty	Consumer

## Hyperinflation in the General Government (German-Occupied Poland)

LOCATION	START DATE	END DATE	MONTH WITH HIGHEST INFLATION RATE	HIGHEST MONTHLY INFLATION RATE	EQUIVALENT DAILY INFLATION RATE	TIME REQUIRED FOR PRICES TO DOUBLE	CURRENCY	TYPE OF PRICE INDEX
Tajikistan <sup>50</sup>	Oct. 1995	Nov. 1995	Nov. 1995	65.2%	1.69%	42.0 days	Tajikistani Ruble	Wholesale
Latvia <sup>51</sup>	Jan. 1992	Jan. 1992	Jan. 1992	64.4%	1.67%	42.4 days	Russian Ruble	Consumer
Turkmenistan <sup>52</sup>	Nov. 1995	Jan. 1996	Jan. 1996	62.5%	1.63%	43.4 days	Manat	Consumer
Philippines <sup>53</sup>	Jan. 1944	Dec. 1944	Jan. 1944	60.0%	1.58%	44.9 days	Japanese War Notes	Consumer
Yugoslavia <sup>54</sup>	Sep. 1989	Dec. 1989	Dec. 1989	59.7%	1.57%	45.1 days	Dinar	Consumer
Germany <sup>55</sup>	Jan. 1920	Jan. 1920	Jan. 1920	56.9%	1.51%	46.8 days	Papiermark	Wholesale
Kazakhstan <sup>56</sup>	Nov. 1993	Nov. 1993	Nov. 1993	55.5%	1.48%	47.8 days	Tenge & Russian Ruble	Consumer
General Government (Poland) <sup>57</sup>	Aug. 1944	Aug. 1944	Aug. 1944	54.4%	1.46%	48.6 days	Złoty	Consumer
Lithuania <sup>58</sup>	Jan. 1992	Jan. 1992	Jan. 1992	54.0%	1.45%	48.8 days	Russian Ruble	Consumer
Belarus <sup>59</sup>	Aug. 1994	Aug. 1994	Aug. 1994	53.4%	1.44%	49.3 days	Belarusian Ruble	Consumer
Taiwan <sup>60</sup>	Feb. 1947	Feb. 1947	Feb. 1947	50.8%	1.38%	51.4 days	Taipei	Wholesale for Taipei

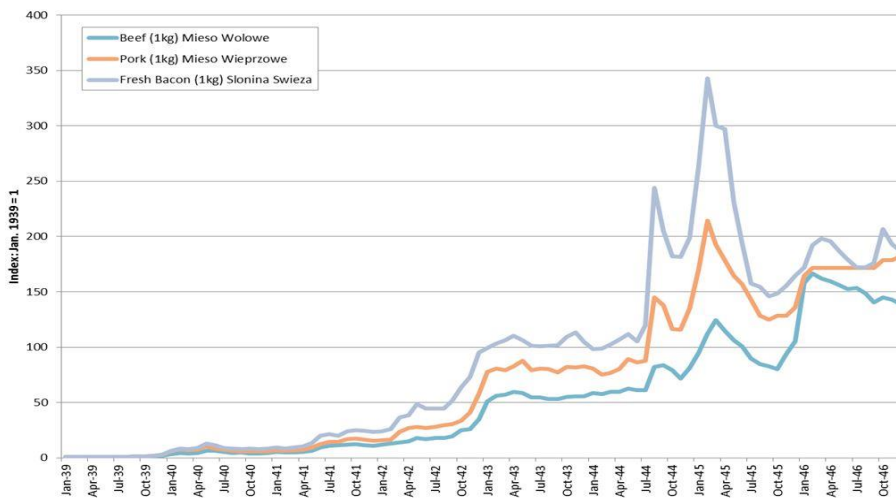
## Appendix II: Prices of a variety of goods on the Krakow black market: 1939–1946

### Price increases—vegetables



Source: Smoliwski (1947)

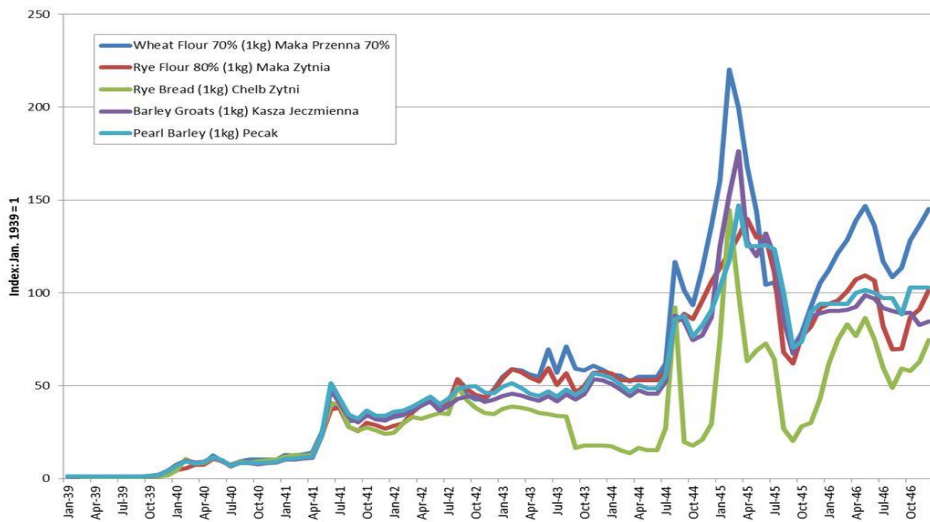
### Price increases—meat



Source: Smoliwski (1947)

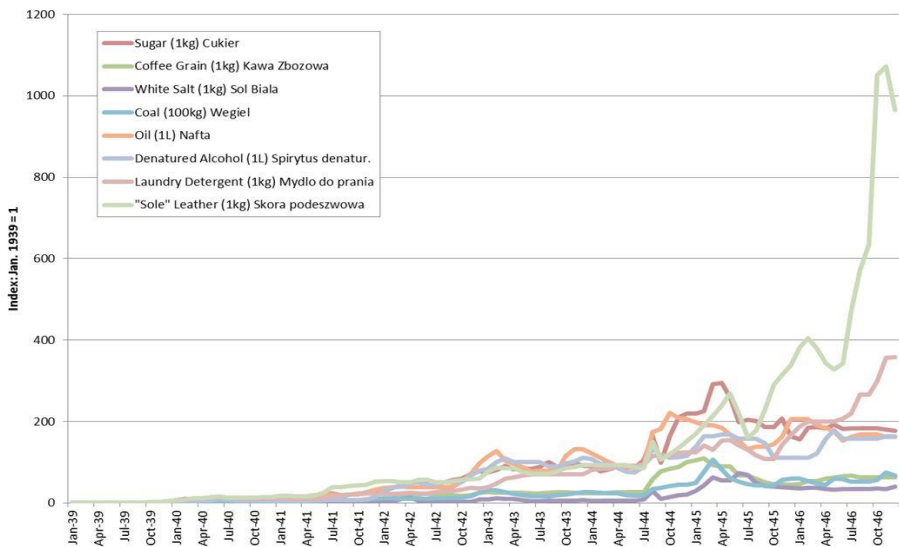
# Hyperinflation in the General Government (German-Occupied Poland)

## Price increases—grains



Source: Smoliwski (1947)

## Price increases—other goods



Source: Smoliwski (1947)