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Zimbabwe hyperinflates, again: The 58th episode of hyperinflation in history

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Abstract. Growth rate of the world Growth Domestic Product (GDP) is analysed to determine possible pathways of the future economic growth. The analysis is based on using the latest data of the World Bank and it reveals that the growth rate between 1960 and 2014 was following a trajectory approaching asymptotically a constant value. The most likely prediction is that the world economic growth will continue to increase exponentially and that it will become unsustainable possibly even during the current century. A more optimistic but less realistic prediction is based on the assumption that the growth rate will start to decrease linearly. In this case, the world economic growth is predicted to reach a maximum, if the growth rate is going to decrease linearly with time, or to follow a logistic trajectory, if the growth rate is going to decrease linearly with the size of the world GDP.
Keywords. Economic growth; World economic growth; Gross Domestic Product; Predicting future growth; Exponential growth.
JEL. C01; C20; C50; C53; C60; C65; C80.

1. Introduction

Inn 2008, Zimbabwe suffered the second most severe episode of hyperinflation in recorded history (Hanke and Krus, 2013). As shown in the table below, Zimbabwe's annual inflation rate peaked in November 2008, reaching 89.7 sextillion (10^23) percent (Hanke and Kwok, 2009). Prices were doubling every 24.7 hours.

Well, Zimbabwe is experiencing hyperinflation again today. Zimbabwe's annual inflation rate is currently at 313 percent.

During Zimbabwe's hyperinflation episode (2007-2008), the Reserve Bank of Zimbabwe failed to report any meaningful economic data, including inflation rates. One of us (Hanke), assisted by a capable research team at The Johns Hopkins University, was the only source of accurate inflation rate measurements during that hyperinflation episode.

Just how was Zimbabwe's 2007-2008 inflation rate accurately measured? During episodes of hyperinflation, the only reliable and feasible way to measure the inflation rate is via the application of Purchasing Power Parity (PPP). To do that, one needs data on the most important price in the economy: the exchange rate between the domestic currency and a stable international currency. This was not feasible in Zimbabwe. The Zimbabwe dollar was not traded on an organized exchange that reported exchange rates. Moreover, there were multiple black-market (read: free market) exchange rates for cash, as well as non-cash Zimbabwe dollars (i.e., credit and debit cards, checks, and bank transfers). Accordingly, the use of black-market exchange rates was not feasible either.

Due to the lack of the standard data required, it appeared that the measurement of Zimbabwe's inflation rate would not be feasible. However, the organized stock market in Harare did provide prices that allowed Hanke

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and Kwok (2009) to calculate implied Zimbabwe dollar exchange rates. One stock—that of the insurance and investment company Old Mutual—was, and still is, listed on both the London Stock Exchange and the Zimbabwe Stock Exchange. Each share of Old Mutual commands the same claim on the company's earnings and assets, irrespective of the market it is traded on. The only difference between Old Mutual shares traded on different exchanges was that the shares traded in London were denominated in British pounds sterling; whereas, those shares traded in Harare were denominated in Zimbabwe dollars. Therefore, given arbitrage and PPP, the ratio of the Old Mutual share price in Harare to that in London equaled the Zimbabwe dollar/sterling exchange rate.

Table 1. *Zimbabwe's hyperinflation*

Date	Month-over-month inflation rate (%)	Year-over-year inflation rate (%)
March 2007	50.54	2,200.20
April 2007	100.70	3,713.90
May 2007	55.40	4,530.00
June 2007	86.20	7,251.10
July 2007	31.60	7,634.80
August 2007	11.80	6,592.80
September 2007	38.70	7,982.10
October 2007	135.62	14,840.65
November 2007	131.42	26,470.78
December 2007	240.06	66,212.30
January 2008	120.83	100,580.16
February 2008	125.86	164,900.29
March 2008	281.29	417,823.13
April 2008	212.54	650,599.00
May 2008	433.40	2,233,713.43
June 2008	839.30	11,268,758.90
July 2008	2,600.24	231,150,888.87
August 2008	3,190.00	9,690,000,000.00
September 2008	12,400.00	471,000,000,000.00
October 2008	690,000,000.00	3,840,000,000,000,000,000.00
14 November 2008	79,600,000,000.00	89,700,000,000,000,000,000,000.00

NOTES: The Reserve Bank of Zimbabwe reported inflation rates for March 2007–July 2008. The authors calculated rates for August 2008–14 November 2008.
SOURCES: Reserve Bank of Zimbabwe (2008a) and authors' calculations.

To convert the resulting Zimbabwe dollar/sterling exchange rate to a Zimbabwe dollar/U.S. dollar rate, Hanke and Kwok (2009) multiplied the Zimbabwe dollar/sterling rate by the sterling/U.S. dollar rate, creating what is known as the Old Mutual Implied Rate (OMIR). By using the OMIR as an exchange rate between Zimbabwe dollars and USD, PPP was then applied as the final link necessary for calculating inflation rates.

So, does PPP hold during periods of hyperinflation? There is a consensus among economists that, over relatively short periods of time and at relatively low inflation rates, the link between exchange rates and price levels is loose. But, as inflation rates increase, that link becomes tighter. In a study of the German hyperinflation during the 1921–1923 period, Jacob Frenkel (1976) found that correlations between various German price indices and the German mark/U.S. dollar exchange rate were all very close to one. Accordingly, a one percent increase in the exchange rate was associated with a one percent increase in the price level. Frenkel's empirical work confirms that PPP holds

when a country is undergoing hyperinflation. Additional evidence supporting the PPP principle during periods of both very high inflation and hyperinflation has also been reported for a wide range of other countries. (see McNown and Wallace 1989, Phylastis 1992, Mahdave and Zhou 1994, Zhou 1997, and Bleaney 1998).

That PPP holds under conditions of very high inflation and hyperinflation should not be surprising. After all, under these conditions, the temporal dimension of price arbitrage is compressed, and the long run effectively becomes the short run. For example, back in July 2008, Zimbabwe's monthly inflation rate was 2,600 percent—equivalent to a 12 percent daily inflation rate. That is, per day—not per month, nor per year. Under these circumstances, arbitrage benefits per unit of time are relatively large, and transaction costs can be overcome quickly. In consequence, price arbitrage works to ensure that PPP holds.

When PPP holds, the ratio of the price levels between two countries is equal to the exchange rate between their currencies. Accordingly, changes in the exchange rate and the ratio of the price levels move in lock-step with one another, where the linkage between the exchange rate and price level is maintained by price arbitrage.

To determine the PPP for Zimbabwe relative to the United States, let P_{ZIM} = the Zimbabwe price level in "Zimbabwe dollars" (ZWD), let P_{US} = the United States price level in U.S. dollars (USD), and let $E_{ZWD/USD}$ = the Zimbabwe dollar/U.S. dollar exchange rate (ZWD per unit of USD).
Then, in a static sense, PPP states that:

$$\frac{P_{ZIM}}{P_{US}} = E_{ZWD/USD}$$

In a dynamic sense, PPP can be interpreted by looking at both changes in price levels and values of currencies over time. This relative form of PPP is expressed as:

$$\frac{1+\frac{\Delta P_{ZIM}}{P_{ZIM}}}{1+\frac{\Delta P_{US}}{P_{US}}} = 1 + \frac{\Delta E_{ZWD/USD}}{E_{ZWD/USD}}$$

Applying this relative form of PPP, the accurate measurement for Zimbabwe's inflation rate in the 2007-2008 period was made possible (see the Table on pg.3). As the rate of inflation accelerated, so did currency substitution. Zimbabweans exchanged their Zimbabwe dollars like hot potatoes for U.S. dollars. As a result, Zimbabwe was spontaneously and unofficially dollarized. In the end, when prices were doubling each day in November 2008, Zimbabweans simply refused to use the Zimbabwe dollar. This forced the government's hand. As a result, the government adopted a multicurrency system based on foreign currencies. The U.S. dollar became the coin of the realm. Indeed, all government accounts became denominated in U.S. dollars in early 2009. As a result of this official dollarization and the installation of a new national unity government in 2009, the economy rebounded and international trust in Zimbabwe began to be restored.

2. Zimbabwe's Inflation Rate Today

Zimbabwe's period of stability was short lived. When President Robert Mugabe's party, ZANU-PF, regained control in 2013, government spending and public debt surged, resulting in economic instability. To finance its deficits, the government created a "New Zim dollar" (Hanke, July 2017). The New Zim dollar is issued at par to the U.S. dollar, but trades at a significant discount to the U.S. dollar. The money supply, as a result of the issuance of the New Zim dollar, exploded in Zimbabwe, and so has the inflation rate.

Just how do we know that Zimbabwe's inflation rate has skyrocketed? We know by employing the same theory and method of measurement used by Hanke and Kwok (2009).

Using the implied exchange rate (the Old Mutual Implied Rate), we are once again able to apply Purchasing Power Parity (PPP) to calculate an accurate measurement of Zimbabwe's inflation rate.

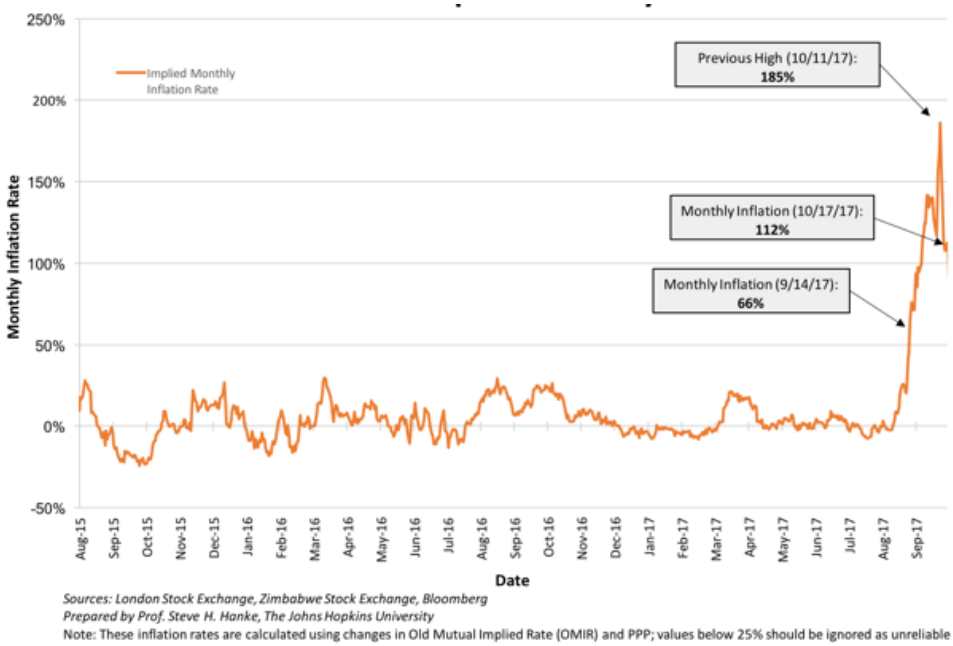

Figure 1. *Zimbabwe implied monthly inflation*

Zimbabwe is now experiencing hyperinflation for the second time in less than ten years. Hyperinflation occurs when the monthly inflation rate reaches 50 percent per month and remains above that rate for at least 30 consecutive days. This initial threshold was breached on September 14, 2017, and has remained above this rate as of today, October 17, 2017 (see chart above). Thus, Zimbabwe is in the throes of an ignominious hyperinflation in which the monthly rate of inflation is 112 percent and the annual rate is 313 percent, as of October 17, 2017.

The government statistics, which are notoriously unreliable, indicate that the annual inflation rate is 0.78 percent (Herald, 2017). Readers can forget this truly fantastical piece of artwork. They can also forget the International Monetary Fund's (IMF) Zimbabwe inflation rate predictions. In its most recent forecast, which is contained in the October 2017 *World Economic Outlook*, the IMF predicts only modest inflation for Zimbabwe. Both the government of Zimbabwe and the IMF are way wide of the mark, if not delusional, when it comes to Zimbabwe's inflation rate. Indeed, unlike the IMF, we measure

inflation rates, we do not predict inflation rates. And today, Zimbabwe is experiencing hyperinflation with its current monthly inflation rate at 112 percent, and its annual inflation rate at 313 percent.

3. Zimbabwe and The Hanke-Krus World Hyperinflation Table

Just where does Zimbabwe fit into the world's hyperinflation picture? The Hanke-Krus World Hyperinflation Table puts Zimbabwe's hyperinflation episodes into perspective. The Table first appeared in the authoritative *Routledge Handbook of Major Events in Economic History* (Parker and Whaples, 2013). The Table contained every country that had experienced hyperinflation – 56 in total. Since its original publication, the Table was first amended in December 2016 to include Venezuela as the 57th entry (Hanke and Bushnell, 2017). With this paper, we amend the Table once again, adding a 58th entry: Zimbabwe's 2017 episode of hyperinflation. On October 13, 2017, Zimbabwe met all the criteria to qualify as an episode of hyperinflation. Specifically, Zimbabwe's monthly inflation rate exceeded 50 percent per month for 30 consecutive days.

What was the genesis of the Hanke-Krus World Hyperinflation Table? What are the criteria required for a country to qualify for the hyperinflation designation? What is the standard method for measuring elevated inflation rates in countries? And how is this method used to measure Zimbabwe's inflation rates? These are the main questions we sought to answer.

In 2010, Hanke was invited to write the survey article on hyperinflation for *The Routledge Handbook of Major Events in Economic History*. Hanke accepted the invitation, thinking it would require routine work on his part and that he could complete the task in short order. He had already surveyed the literature on hyperinflation and had accurately estimated the inflation rates in several countries that had experienced hyperinflation. These included two relatively recent, dramatic episodes of hyperinflation – Yugoslavia (Hanke, 1999) and Zimbabwe (Hanke and Kwok, 2009). In addition, he had designed and implemented currency reforms that had stopped episodes of hyperinflation, notably Bulgaria's episode in 1997 (Hanke, 2016).

While reflecting on the existing literature of hyperinflation, Hanke was struck by the lack of uniformity and clarity. The literature written was widely scattered in time and space; it had been written by many different researchers, and those researchers had employed diverse methods to estimate and analyze the inflation episodes studied.

So, Hanke concluded that the best way to "clean up" the subject of hyperinflation was to create a "World Hyperinflation Table." In his mind, this Table would include all recorded episodes of hyperinflation. The data would be presented in a uniform and clear manner, so that all episodes of hyperinflation could be compared. But, what criteria would be used for an episode of inflation to qualify as hyperinflation? Hanke specified the following three criteria:

1. Following Phillip Cagan's 1956 classic article on hyperinflation, the economics profession adopted the following criterion: to qualify as an episode of hyperinflation, the inflation rate had to be at least 50 percent per month. Hanke adopted this convention.
2. In addition, Hanke specified that this 50 percent rate had to persist for at least 30 consecutive days.

3. Lastly, Hanke mandated that the inflation episode had to be fully documented and that inflation rate estimates had to be replicable.

It turned out that the third criterion was the most difficult one to satisfy. Fortunately, Hanke's chief research assistant at the time, Nicholas Krus, was capable and interested in taking on this research task. Hanke and Krus spent the better part of two years constructing what has come to be known as the Hanke-Krus World Hyperinflation Table. They documented and recalculated the inflation rates for all alleged episodes of hyperinflation in history. The project required the gathering of primary data for each potential case of hyperinflation. This proved to be very difficult and time consuming. For example, the primary data for the French hyperinflation episode of 1795 to 1796 – the first verified case of hyperinflation – had to be obtained and analyzed. But, that was not the most difficult set of data to gather. That "award" went to the Republika Srpska, which experienced hyperinflation during the 1992-1994 period. Fortunately, Hanke was able to use his extensive contacts in the former Yugoslavia to eventually obtain high-quality inflation rate data for the Republika Srpska.

After a long and onerous research effort, the Hanke-Krus World Hyperinflation Table was published. It is contained in "World Hyperinflations," a chapter in *The Routledge Handbook of Major Economic Events in History* (2013), co-authored by Hanke and Krus.

The Table, now amended to include Zimbabwe's most recent episode, is reproduced on the following page. The previous Table consisted of 57 hyperinflation episodes, several of which merit mention. The most well-known hyperinflation episode is the Weimar Republic's German hyperinflation. The monthly inflation rate peaked in October 1923 at 29,500 percent. This rate is many times below Zimbabwe's previous November 2008 hyperinflation of 79.6 billion percent – that is 80 followed by nine zeros. But, Zimbabwe's previous hyperinflation episode is only the world's second highest on record. It is miniscule next to Hungary's July 1946 peak monthly rate of 41.9 quadrillion percent – that is 42 followed by 15 zeros. While the German hyperinflation ranked fifth in the world, its magnitude is far lower than the top four episodes of inflation.

It is striking how few episodes of hyperinflation have occurred – only 56 as of 2013, when the Table was first constructed. However, at that time, there was probably a 57th case of hyperinflation. It likely occurred in North Korea during the 2009-2011 period. But, North Korea was not included in the Table because the only reliable price data from North Korea was for rice. So, the hyperinflation estimates were for rice price inflation, not for a general, broad measure of North Korean price changes.

Table 2. *The Hanke-Krus World Hyperinflation Table (2013, Amended 2017)*

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[1]	Aug. 1945	Jul. 1946	Jul. 1946	4.19×10^{16}%	207%	15.0 hours	Pengö	Consumer
Zimbabwe[2]	Mar. 2007	Mid-Nov. 2008	Mid-Nov. 2008	7.96×10^{10}%	98.0%	24.7 hours	Zim Dollar	Implied Exchange Rate*
Yugoslavia[3]	Apr. 1992	Jan. 1994	Jan. 1994	313,000,000%	64.6%	1.41 days	Dinar	Consumer
Republika Srpska†[4]	Apr. 1992	Jan. 1994	Jan. 1994	297,000,000%	64.3%	1.41 days	Dinar	Consumer
Germany[5]	Aug. 1922	Dec. 1923	Oct. 1923	29,500%	20.9%	3.70 days	Papiermark	Wholesale

Greece[6]	May. 1941	Dec. 1945	Oct. 1944	13,800%	17.9%	4.27 days	Drachma	Exchange Rate‡
China§[7]	Oct. 1947	Mid-May 1949	Apr. 1949	5,070%	14.1%	5.34 days	Yuan	Wholesale for Shanghai
Free City of Danzig[8]	Aug. 1922	Mid-Oct. 1923	Sep 1923	2,440%	11.4%	6.52 days	German Papiermark	Exchange Rate**
Armenia[9]	Oct. 1993	Dec. 1994	Nov. 1993	438%	5.77%	12.5 days	Dram & Russian Ruble	Consumer
Turkmenistan ††[10]	Jan. 1992	Nov. 1993	Nov. 1993	429%	5.71%	12.7 days	Manat	Consumer
Taiwan[11]	Aug. 1945	Sep. 1945	Aug. 1945	399%	5.50%	13.1 days	Yen	Wholesale for Taipei
Peru[12]	Jul. 1990	Aug. 1990	Aug. 1990	397%	5.49%	13.1 days	Inti	Consumer
Bosnia and Herzegovina[13]	Apr. 1992	Jun. 1993	Jun. 1992	322%	4.92%	14.6 days	Dinar	Consumer
France[14]	May 1795	Nov. 1796	Mid-Aug 1796	304%	4.77%	15.1 days	Mandat	Exchange Rate
China[15]	Jul. 1943	Aug. 1945	Jun. 1945	302%	4.75%	15.2 days	Yuan	Wholesale for Shanghai
Ukraine[16]	Jan. 1992	Nov. 1994	Jan. 1992	285%	4.60%	15.6 days	Russian Ruble	Consumer
Poland[17]	Jan. 1923	Jan. 1924	Oct. 1923	275%	4.50%	16.0 days	Marka	Wholesale
Nicaragua[18]	Jun. 1986	Mar. 1991	Mar. 1991	261%	4.37%	16.4 days	Córdoba	Consumer
Congo (Zaire)[19]	Nov. 1993	Sep. 1994	Nov. 1993	250%	4.26%	16.8 days	Zaïre	Consumer
Russia††[20]	Jan. 1992	Jan. 1992	Jan. 1992	245%	4.22%	17.0 days	Ruble	Consumer
Bulgaria[21]	Feb. 1997	Feb. 1997	Feb. 1997	242%	4.19%	17.1 days	Lev	Consumer
Moldova[22]	Jan. 1992	Dec. 1993	Jan. 1992	240%	4.16%	17.2 days	Russian Ruble	Consumer
Venezuela[23]	Nov. 2016	Dec. 2016	Nov. 2016	219%	3.94%	17.9 days	Bolivar	Exchange Rate***
Russia / USSR[24]	Jan. 1922	Feb. 1924	Feb. 1924	212%	3.86%	18.5 days	Ruble	Consumer
Georgia[25]	Sep. 1993	Sep. 1994	Sep. 1994	211%	3.86%	18.6 days	Coupon	Consumer
Tajikistan††[26]	Jan. 1992	Oct. 1993	Jan. 1992	201%	3.74%	19.1 days	Russian Ruble	Consumer
Georgia[27]	Mar. 1992	Apr. 1992	Mar. 1992	198%	3.70%	19.3 days	Russian Ruble	Consumer
Argentina[28]	May 1989	Mar. 1990	Jul. 1989	197%	3.69%	19.4 days	Austral	Consumer
Zimbabwe[29]	Sep. 2017	Ongoing	Oct. 2017	185%	3.56%	20.1 days	"New Zim Dollar"	Implied Exchange Rate****
Bolivia[30]	Apr. 1984	Sep. 1985	Feb. 1985	183%	3.53%	20.3 days	Boliviano	Consumer
Belarus††[31]	Jan. 1992	Feb. 1992	Jan. 1992	159%	3.22%	22.2 days	Russian Ruble	Consumer
Kyrgyzstan †† [32]	Jan. 1992	Jan. 1992	Jan. 1992	157%	3.20%	22.3 days	Russian Ruble	Consumer
Kazakhstan †† [33]	Jan. 1992	Jan. 1992	Jan. 1992	141%	2.97%	24.0 days	Russian Ruble	Consumer
Austria[34]	Oct. 1921	Sep. 1922	Aug. 1922	129%	2.80%	25.5 days	Crown	Consumer
Bulgaria[35]	Feb. 1991	Mar. 1991	Feb. 1991	123%	2.71%	26.3 days	Lev	Consumer
Uzbekistan ††[36]	Jan. 1992	Feb. 1992	Jan. 1992	118%	2.64%	27.0 days	Russian Ruble	Consumer
Azerbaijan[37]	Jan. 1992	Dec. 1994	Jan. 1992	118%	2.63%	27.0 days	Russian Ruble	Consumer
Congo (Zaire)[38]	Oct. 1991	Sep. 1992	Nov. 1991	114%	2.57%	27.7 days	Zaïre	Consumer
Peru[39]	Sep. 1988	Sep. 1988	Sep. 1988	114%	2.57%	27.7 days	Inti	Consumer
Taiwan[40]	Oct. 1948	May 1949	Oct. 1948	108%	2.46%	28.9 days	Taipi	Wholesale for Taipei
Hungary[41]	Mar. 1923	Feb. 1924	Jul. 1923	97.9%	2.30%	30.9 days	Crown	Consumer
Chile[42]	Oct. 1973	Oct. 1973	Oct. 1973	87.6%	2.12%	33.5 days	Escudo	Consumer
Estonia †† [43]	Jan. 1992	Feb. 1992	Jan. 1992	87.2%	2.11%	33.6 days	Russian Ruble	Consumer
Angola[44]	Dec. 1994	Jan. 1997	May 1996	84.1%	2.06%	34.5 days	Kwanza	Consumer
Brazil[45]	Dec. 1989	Mar. 1990	Mar. 1990	82.4%	2.02%	35.1 days	Cruzado & Cruzeiro	Consumer

Democratic Republic of Congo[46]	Aug. 1998	Aug. 1998	Aug. 1998	78.5%	1.95%	36.4 days	Franc	Consumer
Poland[47]	Oct. 1989	Jan. 1990	Jan. 1990	77.3%	1.93%	36.8 days	Zloty	Consumer
Armenia †† [48]	Jan. 1992	Feb. 1992	Jan. 1992	73.1%	1.85%	38.4 days	Russian Ruble	Wholesale
Tajikistan[49]	Oct. 1995	Nov. 1995	Nov. 1995	65.2%	1.69%	42.0 days	Tajikistani Ruble	Wholesale
Latvia[50]	Jan. 1992	Jan. 1992	Jan. 1992	64.4%	1.67%	42.4 days	Russian Ruble	Consumer
Turkmenistan ††[51]	Nov. 1995	Jan. 1996	Jan. 1996	62.5%	1.63%	43.4 days	Manat	Consumer
Phillipines[52]	Jan. 1944	Dec. 1944	Jan. 1944	60.0%	1.58%	44.9 days	Japanese War Notes	Consumer
Yugoslavia[53]	Sep. 1989	Dec. 1989	Dec. 1989	59.7%	1.57%	45.1 days	Dinar	Consumer
Germany[54]	Jan. 1920	Jan. 1920	Jan. 1920	56.9%	1.51%	46.8 days	Papiermark	Wholesale
Kazakhstan[55]	Nov. 1993	Nov. 1993	Nov. 1993	55.5%	1.48%	47.8 days	Tenge & Russian Ruble	Consumer
Lithuania[56]	Jan. 1992	Jan. 1992	Jan. 1992	54.0%	1.45%	48.8 days	Russian Ruble	Consumer
Belarus[57]	Aug. 1994	Aug. 1994	Aug. 1994	53.4%	1.44%	49.3 days	Belarusian Ruble	Consumer
Taiwan[58]	Feb. 1947	Feb. 1947	Feb. 1947	50.8%	1.38%	51.4 days	Taipi	Wholesale for Taipei

A surprising feature of the Table is that Africa, a continent burdened with economic troubles, accounts for only five of the official 57 hyperinflation cases, with three coming from the same country: The Democratic Republic of the Congo (DRC), formerly known as Zaire. Those five cases are: Angola (1994), DRC (1998), Zaire (1991), Zaire (1993), and Zimbabwe (2008).

With this paper, we amend the Table and add Zimbabwe once again to the rogues' gallery of hyperinflation episodes. Zimbabwe passed the hyperinflation threshold on October 13, 2017, making it the 58th country to meet the three criteria required to classify as a case of hyperinflation. Zimbabwe is now once again in the "record book." The current episode of hyperinflation in the new, amended Hanke-Krus World Hyperinflation Table appears at the 29th rank, with a peak monthly inflation rate of 185 percent recorded in October 2017. This puts Zimbabwe in between Argentina, which recorded a peak monthly inflation rate of 197 percent in July 1989, and Bolivia, which recorded a peak monthly inflation rate of 183 percent in February 1985.

4. Concluding Remarks

Zimbabwe, welcome back to the record books! You have once again entered the inglorious world of hyperinflation. It is a world of economic chaos, wrenching poverty, and death. Its purveyors should be incarcerated, and the keys should be thrown away.

References

Bleaney, M. (1998). Purchasing power parity in the 1920s: Evidence for the Swiss Franc. *Applied Economics Letters*, 5(4), 239–241. https://doi.org/10.1080/135048598354394

Cagan, P. (1956). The monetary dynamics of hyperinflation. In M. Friedman (Ed.), *Studies in the quantity theory of money* (pp. 25–117). University of Chicago Press.

Frenkel, J. (1976). A monetary approach to the exchange rate: Doctrinal aspects and empirical evidence. *The Scandinavian Journal of Economics*, *78*(2), 200–224. https://doi.org/10.2307/3439453

Hanke, S. H. (1999, April 28). Yugoslavia destroyed its own economy. *Wall Street Journal*. Retrieved from https://www.wsj.com/articles/SB925239570247458388

Hanke, S. H. (2008). *Zimbabwe: Hyperinflation to growth*. New Zanj Publishing House.

Hanke, S. H. (2016). *Remembrances of a currency reformer: Some notes and sketches from the field* (Studies in Applied Economics No. 55). Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise.

Hanke, S. H. (2017, July 31). Zimbabwe, from disaster to disaster. *Forbes*. Retrieved from http://www.forbes.com/sites/stevehanke/2017/07/31/zimbabwe-from-disaster-to-disaster/-4878dc0f221a

Hanke, S. H. (2017, September 30). Zimbabwe inflates… Again. *Forbes*. Retrieved from https://www.forbes.com/sites/stevehanke/2017/09/30/zimbabwe-inflates-again/-72ad6b8a10d6

Hanke, S. H., & Bushnell, C. (2017). On measuring hyperinflation: Venezuela's episode. *World Economics*, *18*(3).

Hanke, S. H., & Krus, N. (2013). World hyperinflations. In R. Whaples & R. Parker (Eds.), *Routledge handbook of major events in economic history* (pp. 377–388). Routledge.

Hanke, S. H., & Kwok, A. (2009). On the measurement of Zimbabwe's hyperinflation. *Cato Journal*, *29*(2), 353–364.

International Monetary Fund (IMF). (2017). *World economic outlook October 2017: Seeking sustainable growth: Short-term recovery, long-term challenges*. Retrieved from https://www.imf.org/en/Publications/WEO/Issues/2017/09/19/world-economic-outlook-october-2017

Mahdavi, S., & Zhou, S. (1994). Purchasing power parity in high-inflation countries: Further evidence. *Journal of Macroeconomics*, *16*(3), 403–422. https://doi.org/10.1016/0164-0704(94)90013-1

McNown, R., & Wallace, M. (1989). National price levels, purchasing power parity, and cointegration: A test of four high inflation economies. *Journal of International Money and Finance*, *8*(4), 533–545. https://doi.org/10.1016/0261-5606(89)90006-0

NYSEData.com. (n.d.). *Consolidated volume in NYSE listed issues* (Factbook). Retrieved from http://www.nyxdata.com/nysedata/asp/factbook/viewer_edition.asp?mode=table&key=3325&category=3

NYSE most active stocks - Markets Data Center - WSJ.com. (2017, October 14). *Wall Street Journal*. Retrieved from http://www.wsj.com/mdc/public/page/2_3021-activnyse-actives-20170929.html?mod=mdc_pastcalendar

Parker, R. E., & Whaples, R. (Eds.). (2013). *Routledge handbook of major events in economic history*. Routledge.

Phylaktis, K. (1992). Purchasing power parity and cointegration: The Greek evidence from 1920s. *Journal of International Money and Finance*, *11*(5), 502–513. https://doi.org/10.1016/0261-5606(92)90035-7

September inflation rises 0.78 percent. (2017, October 17). *The Herald*. Retrieved October 18, 2017, from http://www.herald.co.zw/september-inflation-rises-0-78-percent/

Zhou, S. (1997). Purchasing power parity in high-inflation countries: A cointegration analysis of integrated variables with trend breaks. *Southern Economic Journal*, *64*(2), 450–467. https://doi.org/10.2307/1060932

Zimbabwe Stock Exchange. (n.d.). *Daily price sheet*. Retrieved from http://www.zse.co.zw/daily-price-sheet/