

# Hyperinflation in Ukraine

Econ1102  
Guest Lecture

by Vadym Lepetyuk  
lepetyuk@econ.umn.edu



# Outlines

- Background information and current economic situation in Ukraine
- Characteristics of hyperinflation in 1991-95
- Hyperinflation time: winners and losers, seignorage and inflation tax
- Roots of the hyperinflation
- Monetary reform of 1994-96, end of hyperinflation

## Background: Ukraine, Minnesota, USA (2004)

	Ukraine	MN	USA
Area (sq.mi.)	233,000	87,000	3,718,000
Population (mln.)	47.7	5.1	293.7
Population growth (%)	-0.7	0.7	0.9
GDP (PPP, bln. \$)	260 <sup>(2003)</sup>	210 <sup>(2003)</sup>	11,730
GDP growth rate (%)	12.0	...	4.4
GDP per capita (PPP, \$)	5,400 <sup>(2003)</sup>	41,600 <sup>(2003)</sup>	40,000
Inflation rate (%)	12.3	...	3.3
Unemployment rate (%)	3.6	4.4	5.4
Import (% GDP)	48.8	...	15.0
Export (% GDP)	59.8	...	9.8
Budget Deficit (% GDP)	3.2	...	3.5

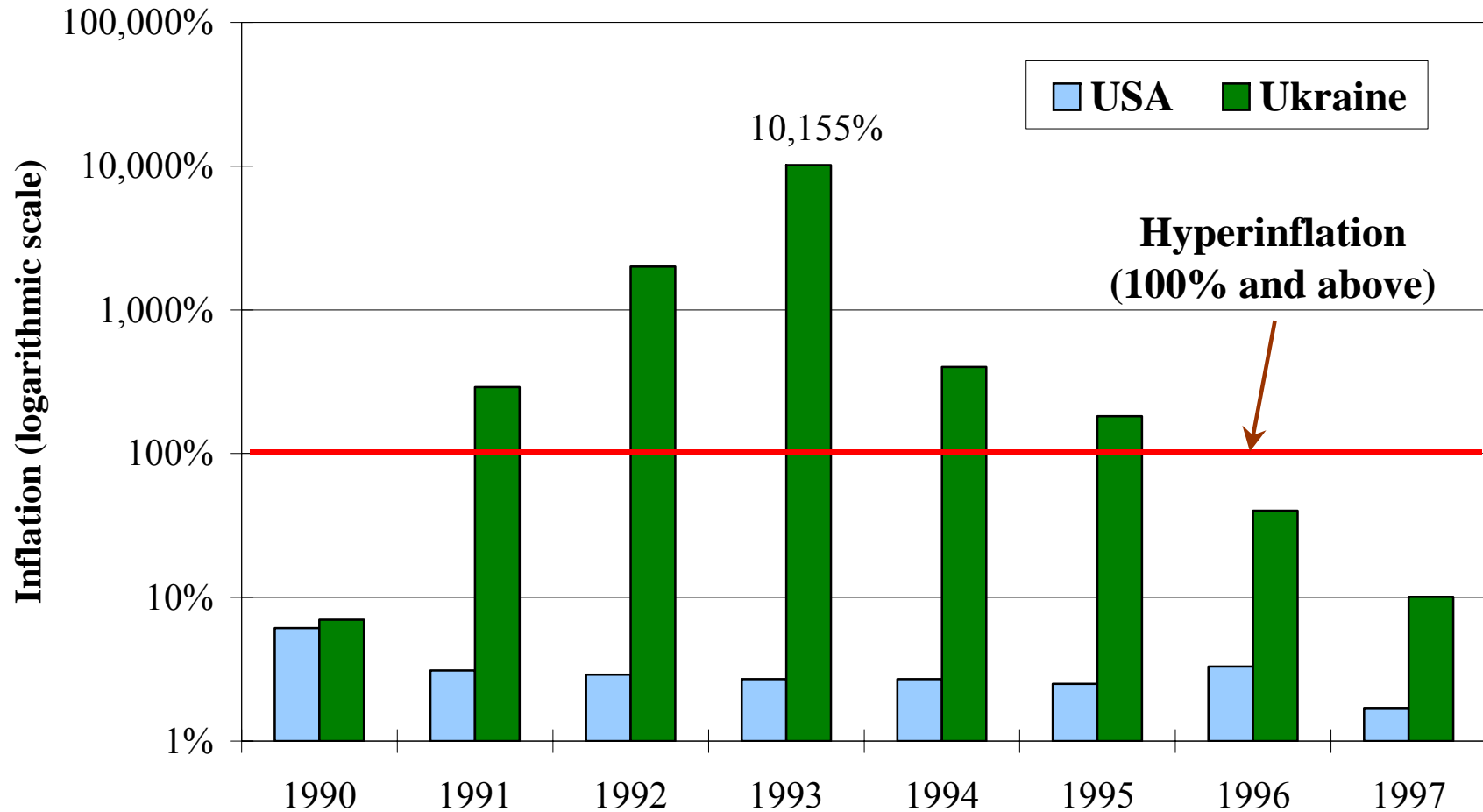
## Hyperinflation: Definition

**Hyperinflation** is a period of rapid inflation that leaves a country's currency virtually worthless. There is no universally accepted numerical definition to hyperinflation.

### ***Some of numerical definitions of hyperinflation:***

- extremely high inflation, usually over 50% per month (Cagan, 1956);
- an unusually rapid rate of monetary inflation, as when prices rise more than 100% per year;
- the cumulative inflation rate over three years is approaching, or exceeds, 100% (International Financial Reporting Standards)

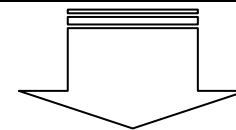
# Inflation: Ukraine vs. USA, 1990-97



# Hyperinflation: Example

➤ Price of cheeseburger

Date	Price (kupon)
12/92	0.99
1/93	1.46
2/93	2.14
3/93	3.15
6/93	10.03
9/93	31.90
12/93	101.52



# Characteristics of Ukrainian hyperinflation

- Legal restrictions on currency circulation
  - ... by law local currency was declared the only legal tender
  - ... currency exchange was limited
- Dominance of U.S. dollar and “special currency units”
- Prevailing barter of agriculture goods
- Inventories as a tool of savings

## **Who shared the burden of hyperinflation?**

- Households due to loss of real value of savings (inflation tax)
- Enterprises due to loss of liquidity

## **Who benefited from the hyperinflation?**

- Government (seignorage = revenue from printing money)
- Enterprises, recipients of low interest government credit



## Seigniorage vs. Inflation Tax

$$\begin{aligned} \text{Seigniorage} &= \frac{\Delta M_t}{P_t} \\ \text{Inflation tax} &= \frac{\pi_t M_{t-1}}{P_t} \end{aligned} \quad \begin{aligned} M_t &= \text{money} \\ P_t &= \text{price level} \\ \pi_t &= \text{inflation} \end{aligned}$$

**Change in Real Balances = Seigniorage – Inflation Tax**

$$\Delta \left( \frac{M_t}{P_t} \right) = \frac{\Delta M_t}{P_t} - \frac{\pi_t M_{t-1}}{P_t}$$

Real Balances in Ukraine

Year	1991	1992	1993	1994	1995	1996
M/P	263.1	122.2	13.1	14.9	12.9	11.6

During hyperinflation in Ukraine: **Inflation Tax > Seigniorage**

# What are the roots of Ukrainian hyperinflation?

- Collapse of **soviet planned system** ...
- ... which led to **shrink of output** ...
- ... which led to double-digit **government budget deficit** ...
- ... which was covered by **borrowing from the central bank** ...
- ... which led to **hyperinflation**

## ***Additional (onetime) factors:***

- Price liberalization
- Elimination of energy subsidies
- Monopoly pricing practices

## How the hyperinflation could be avoided?

- Decrease of government expenses or increase of government revenues rather than increase of budget deficit
  - Conversely, Ukrainian government provided cheap, practically zero-interest credits to enterprises with a hope to stimulate output
  
- Domestic and foreign borrowing rather than the borrowing from the central bank
  - However, Ukraine didn't have financial institutions for domestic borrowing and had limited access to foreign markets

## Monetary reform: Keystone actions

- President election ahead of schedule (July 1994)
- Decrease of budget deficit  
(from 13% of GDP in 1994 to 5% in 1996)
- Decrease of borrowing from the central bank  
(from 12% of GDP in 1994 to 2% in 1996)
- Domestic and foreign government borrowing  
(from 0% in 1993 to 3% in 1996)
- Wage arrears  
(5% of GDP as of the end of 1996)

## Monetary reform: Keystone actions (2)

- Currency reform (September 1996; 100,000 kupons = 1 hryvnya)
  - the reform by itself can do little to stop inflation
  - it's rather a signal that the future will be different



## Conclusions

- Underlying cause of hyperinflation in Ukraine was large budget deficits covered by borrowing from the central bank
- The most important consequence of the hyperinflation for the vast majority of Ukrainian population was the loss of real value of savings