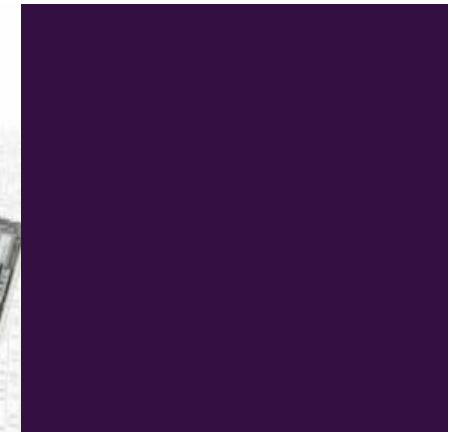




Influence of Inflation on Kazakhstani market



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+ Background

□ Policies to

reduce inflation :

Monetary policy – Higher interest rates. This increases cost of borrowing and discourages spending. This leads to lower economic growth and lower inflation.

Tight fiscal policy – Higher income tax and / or lower government spending, will reduce aggregate demand, leading to lower growth and less demand pull inflation

Supply side policies – These aim to increase long-term competitiveness, e.g. privatisation and deregulation may help reduce costs of business, leading to lower inflation.



Changes in prices for consumer goods and services in %, an increment.

| | December,2012 | December, 2011 | December, 2010 | January-December 2012 – January- December 2011 |
|------------------------|---------------|----------------|----------------|--|
| All goods and services | 0,6 | 6,0 | 13,8 | 5,1 |
| Food goods | 0,8 | 5,3 | 15,0 | 4,5 |
| Non-food goods | 0,3 | 3,5 | 8,9 | 4,3 |
| Paid services | 0,6 | 9,3 | 17,3 | 6,8 |

Comparison of overall Inflation to the Healthcare Inflation in 2016

| 2016 | Jan | Feb | March | April | May | June | July | Aug | Sep | Oct | Nov | Dec |
|------------|-----|-----|-------|-------|-----|------|------|------|------|------|------|------|
| Inflation | 1.3 | 2.5 | 3 | 3.6 | 4.2 | 4.6 | 5.2 | 5.4 | 5.6 | 6.2 | 7.5 | 8.5 |
| Healthcare | 2.8 | 5.5 | 7.0 | 8.7 | 9.5 | 10.2 | 10.5 | 11.1 | 11.3 | 11.8 | 13.2 | 14.0 |

+ Taylors Rule Hypothesis

General form of the Taylor rule:

$$i_t = 2 + \pi_t + a(\pi_t - \pi^*) + b(y_t - y_t^*)$$

where

- i_t is the prescribed value of the policy interest rate in a given period t ;
- $\pi_t - \pi^*$ is the deviation of the actual inflation rate π_t from its target π^* in period t ;
- $y_t - y_t^*$, the “output gap,” is the deviation of actual real output y_t from potential output y_t^* in period t ; and
- a and b are positive numbers.

+ Taylors Model on Kazakhstan Inflation

| Kazakhstan Prices | Last | Previous | Highest | Lowest | Unit |
|-----------------------------------|--------|----------|---------|--------|--------------|
| <u>Inflation Rate</u> | 25750 | 29403 | 2960.80 | 32874 | percent |
| <u>Consumer Price Index CPI</u> | 678.40 | 671.90 | 678.40 | 145.30 | Index Points |
| <u>Health care Inflation Rate</u> | 24289 | 42583 | 198000 | 40000 | percent |
| <u>Producer Prices</u> | 916.01 | 913.14 | 916.78 | 122.10 | Index Points |
| <u>Producer Prices Change</u> | 26.70 | 31.20 | 71.70 | -33.60 | percent |
| <u>GDP Deflator</u> | 99.10 | 105.60 | 260.90 | 99.10 | Index Points |

+ Assumption of Phillips Curve to Healthcare Industry

$$g_w = -\epsilon(U - U^*)$$

Modern Version of Phillips Curve or Expectations-Augmented Phillips Curve

Modern Phillips curve incorporates expected inflation (π^e)

$$\therefore \pi = \pi^e - \epsilon(U - U^*)$$

Derivation of equation 2.

$$\therefore g_w = -\epsilon(U - U^*) + \pi^e \quad \text{Expected Augmented Phillips Curve}$$

Assuming constant real wage

$$\pi^e = g_w$$

Substituting value of (4) in (3)

$$\pi = \pi^e - \epsilon(U - U^*)$$

Equation (2) shows that:

(1) Output is at full employment level $U = U^*$ when

$$\pi = \pi^e$$

(2) If output is at less than full employment $U < U^*$ level

$$\pi > \pi^e$$



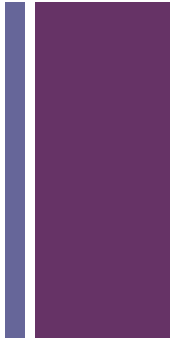
| | 1995 year=100 | | | | 2000 year=100 | | | |
|------|--------------------|---------------------|--------------------|---------------|--------------------|---------------------|--------------------|---------------|
| | Goods and services | maintenance | | Paid services | Goods and services | maintenance | | Paid services |
| | | Healthcare services | Manufactured goods | | | Healthcare services | Manufactured goods | |
| 2000 | 188,5 | 166,8 | 140,1 | 426,9 | - | - | - | - |
| 2001 | 200,6 | 181,5 | 146,4 | 441,8 | 106,4 | 108,8 | 104,5 | 103,5 |
| 2002 | 213,8 | 194,4 | 155,6 | 467,5 | 113,4 | 116,6 | 111,1 | 109,5 |
| 2003 | 228,2 | 208,3 | 166,4 | 494,9 | 121,1 | 124,9 | 118,8 | 115,9 |
| 2004 | 243,6 | 223,6 | 176,7 | 524,3 | 129,2 | 134,1 | 126,1 | 122,8 |
| 2005 | 262,0 | 241,8 | 187,1 | 566,3 | 139,0 | 145,0 | 133,6 | 132,7 |
| 2006 | 283,9 | 259,4 | 200,4 | 632,0 | 150,6 | 155,5 | 143,1 | 148,0 |
| 2007 | 337,2 | 328,3 | 221,5 | 729,4 | 178,8 | 196,8 | 158,1 | 170,9 |
| 2008 | 369,1 | 363,9 | 234,1 | 812,6 | 195,8 | 218,2 | 167,1 | 190,3 |
| 2009 | 392,0 | 374,8 | 254,3 | 880,6 | 207,9 | 224,7 | 181,5 | 206,3 |
| 2010 | 422,4 | 412,6 | 268,4 | 940,2 | 224,0 | 247,3 | 191,6 | 220,2 |
| 2011 | 453,5 | 450,2 | 282,5 | 1008,7 | 240,5 | 269,9 | 201,7 | 236,3 |
| 2012 | 480,5 | 474,3 | 292,4 | 1102,8 | 254,9 | 284,3 | 208,7 | 258,3 |
| 2013 | 503,5 | 490,0 | 302,1 | 1191,4 | 267,0 | 293,7 | 215,6 | 279,1 |
| 2014 | 540,9 | 529,2 | 325,6 | 1267,5 | 286,8 | 317,2 | 232,5 | 296,9 |
| 2015 | 614,5 | 586,9 | 399,1 | 1370,5 | 325,9 | 351,8 | 284,9 | 321,0 |
| 2016 | 666,6 | 643,8 | 436,9 | 1454,7 | 353,5 | 385,9 | 311,9 | 340,8 |



Consumer Price Indexes

| | By December this year | | | | Previous year | | | |
|------|-----------------------|---------------------|--------------------|---------------|--------------------|---------------------|--------------------|---------------|
| | Goods and services | Maintenance | | Paid services | Goods and services | Maintenance | | Paid services |
| | | Healthcare services | Manufactured goods | | | Healthcare services | Manufactured goods | |
| 2000 | 109,8 | 112,8 | 106,1 | 107,1 | 113,2 | 116,0 | 111,5 | 108,5 |
| 2001 | 106,4 | 108,8 | 104,5 | 103,5 | 108,4 | 111,5 | 105,6 | 104,8 |
| 2002 | 106,6 | 107,1 | 106,3 | 105,8 | 105,9 | 106,8 | 105,0 | 104,8 |
| 2003 | 106,8 | 107,1 | 106,9 | 105,9 | 106,4 | 107,0 | 106,8 | 105,1 |
| 2004 | 106,7 | 107,4 | 106,2 | 105,9 | 106,9 | 107,7 | 106,5 | 105,6 |
| 2005 | 107,5 | 108,1 | 105,9 | 108,0 | 107,6 | 108,1 | 106,3 | 107,8 |
| 2006 | 108,4 | 107,3 | 107,1 | 111,6 | 108,6 | 108,7 | 106,8 | 110,3 |
| 2007 | 118,8 | 126,6 | 110,5 | 115,4 | 110,8 | 112,2 | 107,8 | 111,7 |
| 2008 | 109,5 | 110,8 | 105,7 | 111,4 | 117,0 | 123,4 | 110,4 | 114,3 |
| 2009 | 106,2 | 103,0 | 108,6 | 108,4 | 107,3 | 106,0 | 106,7 | 109,8 |
| 2010 | 107,8 | 110,1 | 105,5 | 106,8 | 107,1 | 106,2 | 106,4 | 109,0 |
| 2011 | 107,4 | 109,1 | 105,3 | 107,3 | 108,3 | 111,9 | 105,4 | 106,8 |
| 2012 | 106,0 | 105,3 | 103,5 | 109,3 | 105,1 | 104,5 | 104,3 | 106,8 |
| 2013 | 104,8 | 103,3 | 103,3 | 108,0 | 105,8 | 104,3 | 103,1 | 110,6 |
| 2014 | 107,4 | 108,0 | 107,8 | 106,4 | 106,7 | 106,6 | 106,9 | 106,7 |
| 2015 | 113,6 | 110,9 | 122,6 | 108,1 | 106,6 | 106,4 | 108,1 | 105,5 |
| 2016 | 108,5 | 109,7 | 109,5 | 106,1 | 114,6 | 112,7 | 122,4 | 109,0 |

+ MAIN RESULTS OF OUR ANALYSIS



+ CONCLUSION



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+ THANKS FOR
YOUR ATTENTION