

SUMMARY OUTPUT

| <i>Regression Statistics</i> | |
|------------------------------|----------|
| Multiple R | 0.968285 |
| R Square | 0.937575 |
| Adjusted R | 0.936015 |
| Standard Error | 38413.27 |
| Observations | 42 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 1 | 8.86E+11 | 8.86E+11 | 600.7734 | 1.04E-25 |
| Residual | 40 | 5.9E+10 | 1.48E+09 | | |
| Total | 41 | 9.46E+11 | | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> | <i>Upper 95%</i> | <i>Lower 95.0%</i> | <i>Upper 95.0%</i> |
|--------------|---------------------|-----------------------|---------------|----------------|------------------|------------------|--------------------|--------------------|
| Intercept | 45458.44 | 9254.017 | 4.912293 | 1.57E-05 | 26755.38 | 64161.51 | 26755.38 | 64161.51 |
| X Variable 1 | 3.471552 | 0.141634 | 24.51068 | 1.04E-25 | 3.185299 | 3.757806 | 3.185299 | 3.757806 |

RESIDUAL OUTPUT

| <i>Observation</i> | <i>Predicted Y</i> | <i>Residuals</i> |
|--------------------|--------------------|------------------|
| 1 | 88255.74 | 13205.26 |
| 2 | 86495.66 | 28833.34 |
| 3 | 116458.6 | 27872.37 |
| 4 | 124352.4 | 51398.62 |
| 5 | 109192.9 | 73027.05 |
| 6 | 101026.8 | -14613.8 |
| 7 | 72545.6 | 17623.4 |
| 8 | 88060.76 | 15795.24 |
| 9 | 76580.78 | 14488.22 |
| 10 | 86566.84 | 1311.16 |
| 11 | 102994.7 | -11053.7 |
| 12 | 110241.1 | -4896.08 |
| 13 | 114431.2 | 9755.752 |
| 14 | 101688.3 | -8769.31 |
| 15 | 116004.6 | -43409.6 |
| 16 | 118014.1 | -19727.1 |
| 17 | 129871.8 | -10178.8 |
| 18 | 113788.6 | 1282.426 |
| 19 | 94014.5 | 11879.5 |
| 20 | 121706.5 | -8469.47 |
| 21 | 127130.6 | -17538.6 |
| 22 | 130483.1 | -3604.05 |
| 23 | 154475.1 | -25848.1 |
| 24 | 176732.4 | -23187.4 |
| 25 | 212155.9 | -22112.9 |
| 26 | 283729.6 | -57277.6 |

| | | |
|----|----------|----------|
| 27 | 321109.5 | -54810.5 |
| 28 | 395800.6 | -45918.6 |
| 29 | 420115.3 | -14044.3 |
| 30 | 371919.8 | 42139.23 |
| 31 | 458028.2 | 29041.84 |
| 32 | 564691.6 | 18808.39 |
| 33 | 547087.4 | 51765.64 |
| 34 | 481659 | -14244 |
| 35 | 394491.8 | 49484.6 |
| 36 | 309938.7 | 75935.8 |
| 37 | 371326.1 | 47650.55 |
| 38 | 438580.9 | -21875.3 |
| 39 | 349890.6 | -132651 |
| 40 | 214941.9 | -3677.82 |
| 41 | 181304 | -6138.73 |
| 42 | 247265.9 | -17251.8 |

| year | GDP_m | GDP_PPP(%) | Crude oil Reserves(mb) |
|----------|---------|------------|------------------------|
| 1/1/1980 | 101,461 | -18.8 | 58,296 |
| 1/1/1981 | 115,329 | -8.6 | 57,020 |
| 1/1/1982 | 144,331 | 13.1 | 56,148 |
| 1/1/1983 | 175,751 | 13.8 | 55,257 |
| 1/1/1984 | 182,220 | -9.9 | 58,874 |
| 1/1/1985 | 86,413 | -2.1 | 59,000 |
| 1/1/1986 | 90,169 | -9.0 | 92,860 |
| 1/1/1987 | 103,856 | 3.0 | 92,860 |
| 1/1/1988 | 91,069 | -9.5 | 92,860 |
| 1/1/1989 | 87,878 | 5.2 | 92,860 |
| 1/1/1990 | 91,941 | 18.1 | 92,850 |
| 1/1/1991 | 105,345 | 10.8 | 92,860 |
| 1/1/1992 | 124,187 | 2.1 | 92,860 |
| 1/1/1993 | 92,919 | 1.3 | 92,860 |
| 1/1/1994 | 72,595 | -1.5 | 94,300 |
| 1/1/1995 | 98,287 | 1.0 | 93,700 |
| 1/1/1996 | 119,693 | 6.2 | 92,600 |
| 1/1/1997 | 115,071 | -0.5 | 92,600 |
| 1/1/1998 | 105,894 | 1.9 | 93,700 |
| 1/1/1999 | 113,237 | 0.3 | 93,100 |
| 1/1/2000 | 109,592 | 6.9 | 99,530 |
| 1/1/2001 | 126,879 | 0.8 | 99,080 |
| 1/1/2002 | 128,627 | 10.3 | 130,690 |
| 1/1/2003 | 153,545 | 9.2 | 133,250 |
| 1/1/2004 | 190,043 | 4.0 | 132,460 |
| 1/1/2005 | 226,452 | 3.2 | 136,270 |
| 1/1/2006 | 266,299 | 5.0 | 138,400 |
| 1/1/2007 | 349,882 | 8.2 | 136,150 |
| 1/1/2008 | 406,071 | 0.3 | 137,620 |
| 1/1/2009 | 414,059 | 1.0 | 137,010 |
| 1/1/2010 | 487,070 | 5.8 | 151,170 |
| 1/1/2011 | 583,500 | 2.6 | 154,580 |
| 1/1/2012 | 598,853 | -3.7 | 157,300 |
| 1/1/2013 | 467,415 | -1.5 | 157,800 |
| 1/1/2014 | 443,976 | 5.0 | 157,530 |
| 1/1/2015 | 385,874 | -1.4 | 158,400 |
| 1/1/2016 | 418,977 | 8.8 | 157,200 |
| 1/1/2017 | 416,706 | 2.8 | 155,600 |
| 1/1/2018 | 217,240 | -2.3 | 155,600 |
| 1/1/2019 | 211,264 | -1.3 | 208,600 |
| 1/1/2020 | 175,165 | 1.8 | 208,600 |
| 1/1/2021 | 230,014 | 2.3 | 208,600 |

| AVG Crude oil production(1000b/d) | Crude oil exports(1000b/d) | values_of_export_m | export am |
|-----------------------------------|----------------------------|--------------------|-----------|
| 1,467 | 796.7 | 12328.00 | 2.90 |
| 1,263 | 714.6 | 11821.00 | 2.85 |
| 2,421 | 1,623.2 | 20452.00 | 3.21 |
| 2,442 | 1,718.7 | 22725.84 | 3.24 |
| 2,032 | 1,521.8 | 18359.08 | 3.18 |
| 2,192 | 1,568.3 | 16006.78 | 3.20 |
| 2,037 | 1,454.0 | 7802.61 | 3.16 |
| 2,298 | 1,710.0 | 12271.84 | 3.23 |
| 2,479 | 1,696.0 | 8964.96 | 3.23 |
| 2,814 | 2,120.0 | 11841.50 | 3.33 |
| 3,135 | 2,220.0 | 16573.63 | 3.35 |
| 3,407 | 2,420.0 | 18661.00 | 3.38 |
| 3,432 | 2,528.0 | 19868.00 | 3.40 |
| 3,425 | 2,600.0 | 16197.33 | 3.41 |
| 3,596 | 2,650.0 | 20321.21 | 3.42 |
| 3,595 | 2,621.0 | 20900.06 | 3.42 |
| 3,596 | 2,630.0 | 24315.73 | 3.42 |
| 3,603 | 2,587.0 | 19682.87 | 3.41 |
| 3,714 | 2,512.0 | 13986.84 | 3.40 |
| 3,439 | 2,291.0 | 21963.67 | 3.36 |
| 3,661 | 2,492.2 | 23526.12 | 3.40 |
| 3,572 | 2,184.6 | 24491.81 | 3.34 |
| 3,248 | 2,093.6 | 31402.85 | 3.32 |
| 3,742 | 2,396.3 | 37814.19 | 3.38 |
| 3,834 | 2,684.1 | 48018.14 | 3.43 |
| 4,092 | 2,394.5 | 68635.33 | 3.38 |
| 4,073 | 2,561.0 | 79402.81 | 3.41 |
| 4,031 | 2,466.8 | 100918.00 | 3.39 |
| 4,056 | 2,431.4 | 107922.00 | 3.39 |
| 3,557 | 2,232.0 | 94039.00 | 3.35 |
| 3,544 | 2,247.7 | 118843.00 | 3.35 |
| 3,576 | 2,537.3 | 149568.00 | 3.40 |
| 3,740 | 2,102.0 | 144497.00 | 3.32 |
| 3,575 | 1,215.4 | 125650.00 | 3.08 |
| 3,117 | 1,109.2 | 100541.00 | 3.05 |
| 3,152 | 1,081.1 | 76185.00 | 3.03 |
| 3,651 | 1,921.7 | 93868.00 | 3.28 |
| 3,867 | 2,125.0 | 113241.11 | 3.33 |
| 3,536 | 1,849.6 | 87693.38 | 3.27 |
| 2,363 | 651.1 | 48820.65 | 2.81 |
| 1,991 | 404.5 | 39131.08 | 2.61 |
| 2,392 | 762.8 | 58131.75 | 2.88 |

| export_value | ln_gdp | exchange_inflation | external_debt(\$) | external_debt_m | ln_debt | |
|--------------|--------|--------------------|-------------------|-----------------|----------|-------|
| 9.42 | 11.53 | 70.63 | 20.61 | 4618942613.00 | 4618.94 | 8.44 |
| 9.38 | 11.66 | 78.35 | 24.29 | 3969211555.00 | 3969.21 | 8.29 |
| 9.93 | 11.88 | 83.62 | 18.72 | 8269750071.00 | 8269.75 | 9.02 |
| 10.03 | 12.08 | 86.38 | 19.85 | 7078085808.00 | 7078.09 | 8.86 |
| 9.82 | 12.11 | 90.05 | 12.59 | 5159730090.00 | 5159.73 | 8.55 |
| 9.68 | 11.37 | 91.07 | 4.41 | 6025227842.00 | 6025.23 | 8.70 |
| 8.96 | 11.41 | 78.78 | 18.40 | 5793964261.00 | 5793.96 | 8.66 |
| 9.42 | 11.55 | 71.48 | 28.60 | 6150722410.00 | 6150.72 | 8.72 |
| 9.10 | 11.42 | 68.70 | 28.70 | 5843049165.00 | 5843.05 | 8.67 |
| 9.38 | 11.38 | 72.03 | 19.25 | 6526858379.00 | 6526.86 | 8.78 |
| 9.72 | 11.43 | 68.11 | 7.71 | 9026182538.00 | 9026.18 | 9.11 |
| 9.83 | 11.56 | 67.52 | 17.07 | 11368427701.00 | 11368.43 | 9.34 |
| 9.90 | 11.73 | 65.57 | 25.88 | 16074665445.00 | 16074.67 | 9.68 |
| 9.69 | 11.44 | 1268.08 | 21.17 | 23392435930.00 | 23392.44 | 10.06 |
| 9.92 | 11.19 | 1749.17 | 31.26 | 21792481977.00 | 21792.48 | 9.99 |
| 9.95 | 11.50 | 1748.35 | 49.44 | 21681652186.00 | 21681.65 | 9.98 |
| 10.10 | 11.69 | 1751.19 | 29.84 | 16684178793.00 | 16684.18 | 9.72 |
| 9.89 | 11.65 | 1753.35 | 17.38 | 11697339746.00 | 11697.34 | 9.37 |
| 9.55 | 11.57 | 1752.29 | 17.86 | 12341638353.00 | 12341.64 | 9.42 |
| 10.00 | 11.64 | 1753.35 | 20.06 | 9742304900.00 | 9742.30 | 9.18 |
| 10.07 | 11.60 | 1764.86 | 14.59 | 8800053479.00 | 8800.05 | 9.08 |
| 10.11 | 11.75 | 1753.99 | 11.28 | 8280878565.00 | 8280.88 | 9.02 |
| 10.35 | 11.76 | 6907.03 | 14.29 | 8934505230.00 | 8934.51 | 9.10 |
| 10.54 | 11.94 | 8193.89 | 16.50 | 14235372771.00 | 14235.37 | 9.56 |
| 10.78 | 12.16 | 8613.99 | 14.75 | 20950347847.00 | 20950.35 | 9.95 |
| 11.14 | 12.33 | 8963.96 | 13.52 | 21393520936.00 | 21393.52 | 9.97 |
| 11.28 | 12.49 | 9170.94 | 11.92 | 20494226261.00 | 20494.23 | 9.93 |
| 11.52 | 12.77 | 9281.15 | 17.17 | 20834072180.00 | 20834.07 | 9.94 |
| 11.59 | 12.91 | 9428.53 | 25.43 | 16026650175.00 | 16026.65 | 9.68 |
| 11.45 | 12.93 | 9864.30 | 13.85 | 18609984964.00 | 18609.98 | 9.83 |
| 11.69 | 13.10 | 10254.18 | 10.11 | 19768742370.00 | 19768.74 | 9.89 |
| 11.92 | 13.28 | 10616.31 | 20.57 | 17260291984.00 | 17260.29 | 9.76 |
| 11.88 | 13.30 | 12175.55 | 27.11 | 7481952279.00 | 7481.95 | 8.92 |
| 11.74 | 13.05 | 18414.45 | 39.53 | 7013040853.00 | 7013.04 | 8.86 |
| 11.52 | 13.00 | 25941.66 | 17.50 | 5817911004.00 | 5817.91 | 8.67 |
| 11.24 | 12.86 | 29011.49 | 13.77 | 6455859301.00 | 6455.86 | 8.77 |
| 11.45 | 12.95 | 30914.85 | 8.57 | 6058410416.00 | 6058.41 | 8.71 |
| 11.64 | 12.94 | 33226.30 | 10.20 | 6819093933.00 | 6819.09 | 8.83 |
| 11.38 | 12.29 | 40864.33 | 20.54 | 5773699804.00 | 5773.70 | 8.66 |
| 10.80 | 12.26 | 42000.00 | 40.92 | 4855393068.00 | 4855.39 | 8.49 |
| 10.57 | 12.07 | 42000.00 | 30.08 | 5451188396.00 | 5451.19 | 8.60 |
| 10.97 | 12.35 | 42000.00 | 43.98 | | 0.00 | |

ln_inflation

3.03

3.19

2.93

2.99

2.53

1.48

2.91

3.35

3.36

2.96

2.04

2.84

3.25

3.05

3.44

3.90

3.40

2.86

2.88

3.00

2.68

2.42

2.66

2.80

2.69

2.60

2.48

2.84

3.24

2.63

2.31

3.02

3.30

3.68

2.86

2.62

2.15

2.32

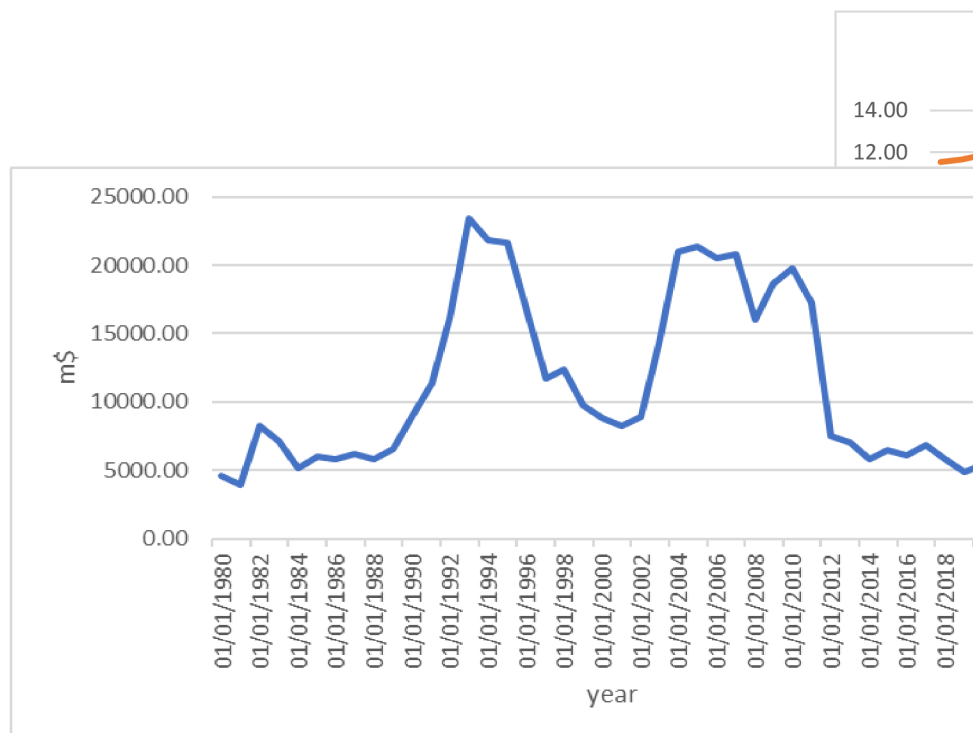
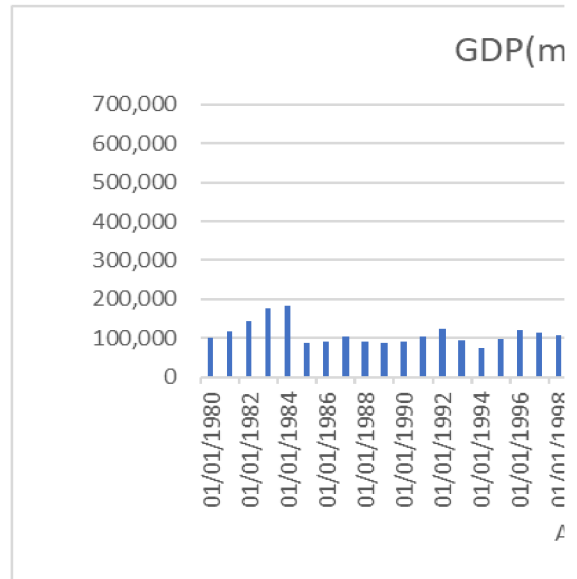
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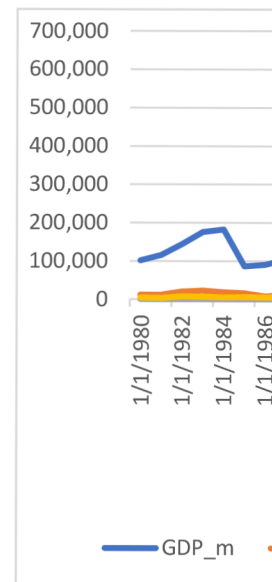
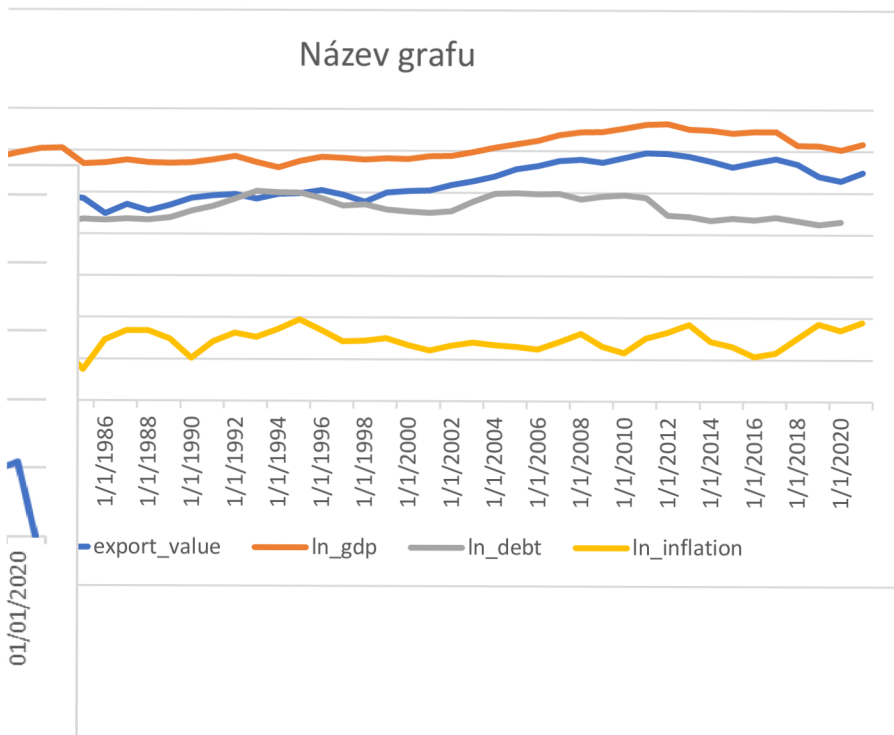
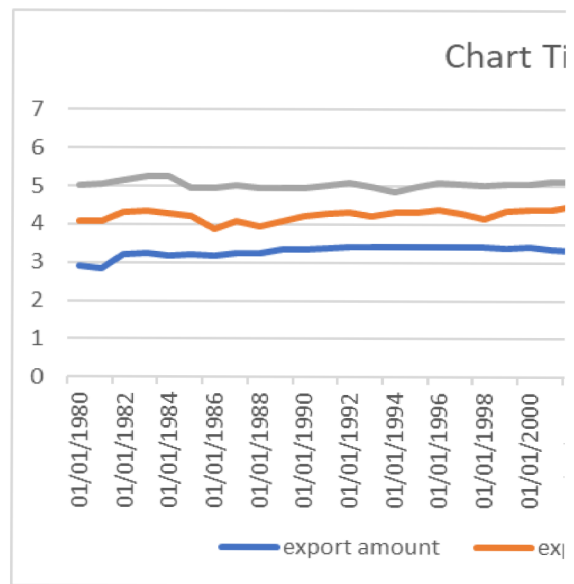
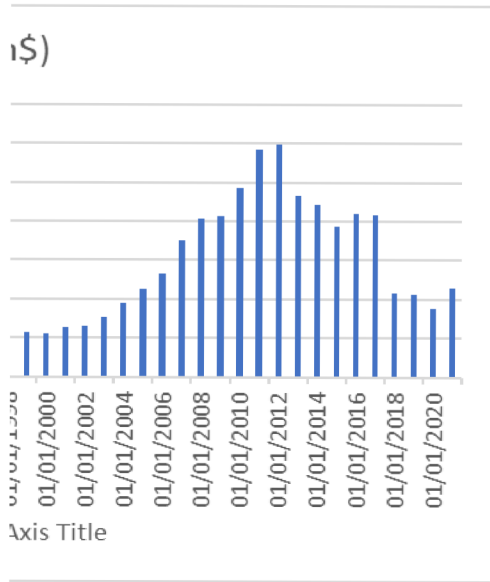
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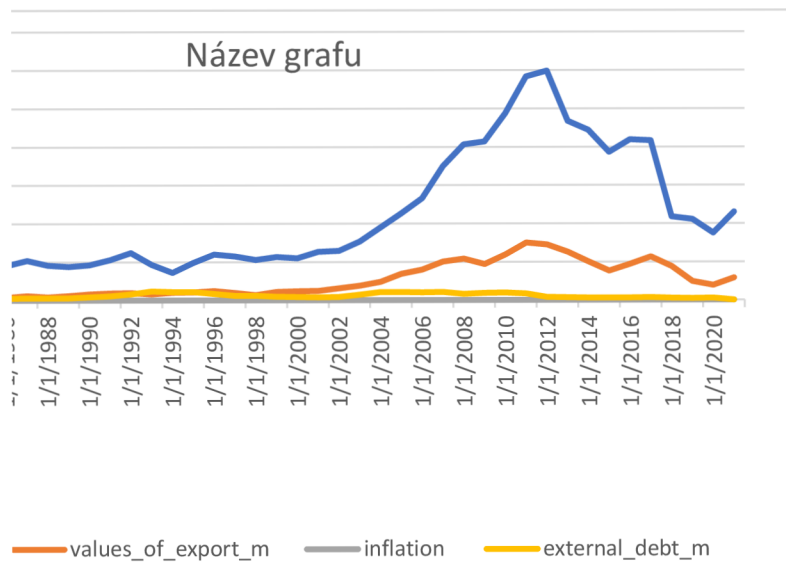
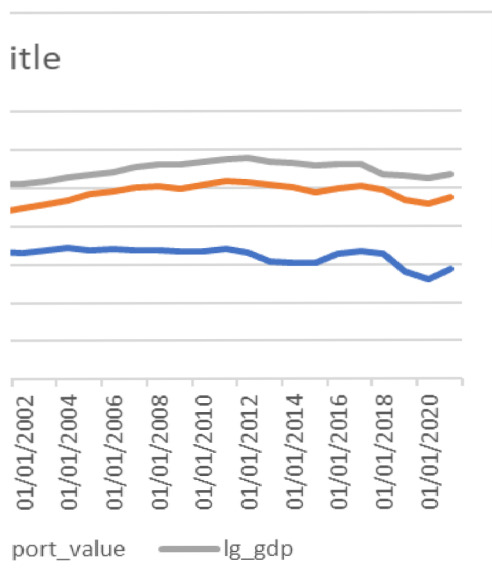
| <u>year</u> | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 |
|--------------------|---------|---------|---------|---------|---------|--------|--------|
| <u>GDP(m\$)</u> | 101,461 | 115,329 | 144,331 | 175,751 | 182,220 | 86,413 | 90,169 |
| <u>values of e</u> | 12,328 | 11,821 | 20,452 | 22,726 | 18,359 | 16,007 | 7,803 |



| 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---------|--------|--------|--------|---------|---------|--------|--------|--------|
| 103,856 | 91,069 | 87,878 | 91,941 | 105,345 | 124,187 | 92,919 | 72,595 | 98,287 |
| 12,272 | 8,965 | 11,842 | 16,574 | 18,661 | 19,868 | 16,197 | 20,321 | 20,900 |



| 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 119,693 | 115,071 | 105,894 | 113,237 | 109,592 | 126,879 | 128,627 | 153,545 | 190,043 |
| 24,316 | 19,683 | 13,987 | 21,964 | 23,526 | 24,492 | 31,403 | 37,814 | 48,018 |



| 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 226,452 | 266,299 | 349,882 | 406,071 | 414,059 | 487,070 | 583,500 | 598,853 | 467,415 |
| 68,635 | 79,403 | 100,918 | 107,922 | 94,039 | 118,843 | 149,568 | 144,497 | 125,650 |

| 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------|---------|---------|---------|---------|---------|---------|----------------|
| 443,976 | 385,874 | 418,977 | 416,706 | 217,240 | 211,264 | 175,165 | <u>230,014</u> |
| 100,541 | 76,185 | 93,868 | 113,241 | 87,693 | 48,821 | 39,131 | <u>58,132</u> |