**Report – 30/09/21**

* Downloaded and inspected several potential X variables, looking predominantly for cross-sectional data availability.
  + Chose to focus on World Bank data: Hospital Beds/1000 and Current Health Expenditure as % of GDP. Added these variables to the master dataset.

Also added more countries to the Datastream stock index dataset – n currently = 35.

**Updated Graphs folder – with new countries.**

A picture containing graphical user interface

Description automatically generated

(just noticed a bug with a few of the graph y axis (e.g Turkey) – need to fix).

**Analysis 1: Regressing stock fluctuations on hospital beds/1000.**

**Scatterplots**

****

Week of WHO announcement.



Week of and after WHO announcement (more promising!)

**Results: effect of hospital beds on stock price fluctuation in week of WHO announcement**

**Linear regression**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| dstr\_WHO | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | | Sig |
| WB\_hb\_p1000 | -.0019 | | .00375 | -0.51 | | .61683 | -.00956 | | .00577 | |  |
| Constant | -.13174 | | .01701 | -7.74 | | 0 | -.16649 | | -.097 | | \*\*\* |
|  | | | | | | | | | | | |
| Mean dependent var | | -0.13938 | | | SD dependent var | | | 0.04952 | |
| R-squared | | 0.00896 | | | Number of obs | | | 32.00000 | |
| F-test | | 0.25563 | | | Prob > F | | | 0.61683 | |
| Akaike crit. (AIC) | | -98.83053 | | | Bayesian crit. (BIC) | | | -95.89905 | |
| *\*\*\* p<.01, \*\* p<.05, \* p<.1* | | | | | | | | | | | |
|  | | | | | | | | | | | |

(neg, insig)

**Effect of hospital beds on stock price fluctuation in week of and after WHO announcement**

**Linear regression**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| dstr\_WHO2 | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | | Sig |
| WB\_hb\_p1000 | .00311 | | .00366 | 0.85 | | .40162 | -.00436 | | .01059 | |  |
| Constant | -.20689 | | .0235 | -8.80 | | 0 | -.25489 | | -.1589 | | \*\*\* |
|  | | | | | | | | | | | |
| Mean dependent var | | -0.19436 | | | SD dependent var | | | 0.07490 | |
| R-squared | | 0.01055 | | | Number of obs | | | 32.00000 | |
| F-test | | 0.72387 | | | Prob > F | | | 0.40162 | |
| Akaike crit. (AIC) | | -72.40387 | | | Bayesian crit. (BIC) | | | -69.47240 | |
| *\*\*\* p<.01, \*\* p<.05, \* p<.1* | | | | | | | | | | | |
|  | | | | | | | | | | | |

(pos, insig)

**Analysis 2: Regressing stock fluctuations on Health Expenditure as % of GDP (as of 2018)**

**Scatterplots**



Week of WHO announcement.

****

Week of and after WHO announcement (more promising!)

**Results: Effect of Health Expenditure on stock price fluctuations in week of WHO announcement**

**Linear regression**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| dstr\_WHO | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | | Sig |
| WHO\_2018\_HE\_GDP | -.00193 | | .00389 | -0.49 | | .62447 | -.00988 | | .00603 | |  |
| Constant | -.12285 | | .03719 | -3.30 | | .00248 | -.19881 | | -.0469 | | \*\*\* |
|  | | | | | | | | | | | |
| Mean dependent var | | -0.13938 | | | SD dependent var | | | 0.04952 | |
| R-squared | | 0.01214 | | | Number of obs | | | 32.00000 | |
| F-test | | 0.24465 | | | Prob > F | | | 0.62447 | |
| Akaike crit. (AIC) | | -98.93348 | | | Bayesian crit. (BIC) | | | -96.00201 | |
| *\*\*\* p<.01, \*\* p<.05, \* p<.1* | | | | | | | | | | | |
|  | | | | | | | | | | | |

(neg, insig)

**Effect of Health Expenditure on fluctuation in week of and after WHO announcement**

**Linear regression**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| dstr\_WHO2 | Coef. | | St.Err. | t-value | | p-value | [95% Conf | | Interval] | | Sig |
| WHO\_2018\_HE\_GDP | .00301 | | .00528 | 0.57 | | .57225 | -.00777 | | .0138 | |  |
| Constant | -.22023 | | .04898 | -4.50 | | .0001 | -.32027 | | -.12019 | | \*\*\* |
|  | | | | | | | | | | | |
| Mean dependent var | | -0.19436 | | | SD dependent var | | | 0.07490 | |
| R-squared | | 0.01300 | | | Number of obs | | | 32.00000 | |
| F-test | | 0.32605 | | | Prob > F | | | 0.57225 | |
| Akaike crit. (AIC) | | -72.48315 | | | Bayesian crit. (BIC) | | | -69.55168 | |
| *\*\*\* p<.01, \*\* p<.05, \* p<.1* | | | | | | | | | | | |
|  | | | | | | | | | | | |

(pos, insig).

**Todo**

Initials of countries next to graphs.

Powerpoint of all materials.

* Index graphs
* Data slide – describe both X and Y variables. Time horizon. Date of WHO announcement, date range of X Variables. + Countries. Add summary statistics (mean, variance, sd) for x and ys.
* Scatterplots with trend line and initials
* Main results for the 2 variables.
  + only for two week.
  + Backup slides at the end: 1 week scatterplots and results.

**If time, give some thought to:**

**1st Government announcement including ‘COVID’ – after this point considered public knowledge.**

* **Staggered announcements across countries.**
  + not entirely exogenous; some PMs would be more willing to announce.
  + but neither is date of first case; identifying first case is endogenous to preparedness/quality of healthcare system.