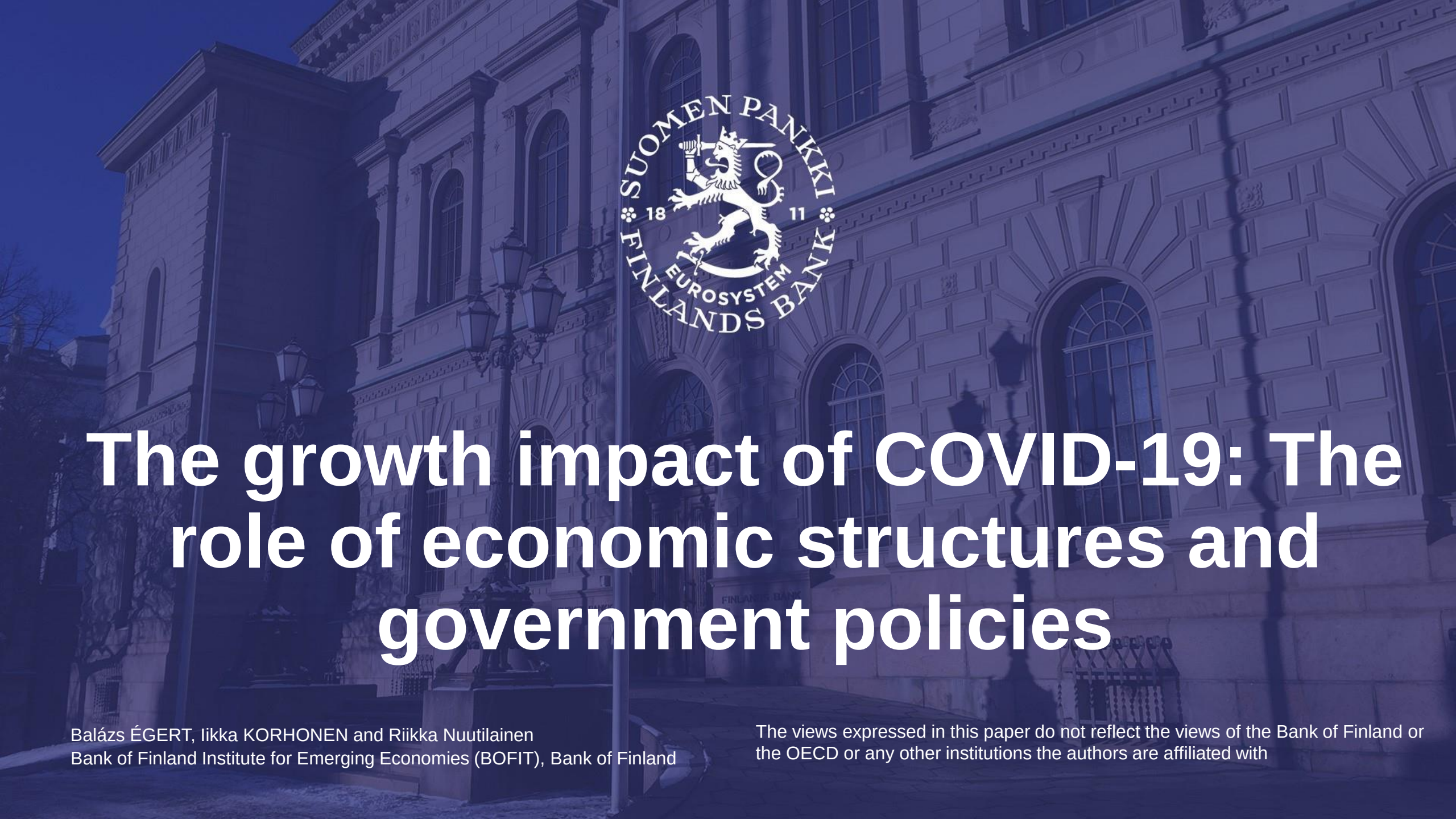

# The growth impact of COVID-19: The role of economic structures and government policies

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# Aim of the paper

- Look at the macroeconomic effects of the Covid-19 pandemic in a large cross-section of advanced, emerging and low-income countries
- Our preferred measure of Covid-19 scarring is the GDP loss in 2020-21 relative to the GDP forecast in October 2019 IMF World Economic Outlook (i.e. before anyone had heard about this particular virus…)
- We also take a somewhat closer look at the largest emerging market economies (i.e. most of the middle-income members of G20)

# Main results

- Countries' pre-existing economic and structural features do explain a large share of the observed economic scarring from Covid-19
- Being dependent on tourism was bad, being old was good and being rich with lots of human capital was good
- Restrictions, lockdowns etc. pursued during the pandemic had much less of an effect on economic scarring – not easy to say which measures worked
- Effects of economic policies (fiscal and monetary) much more difficult to discern from the data

# Related literature

- Literally tens of thousands of economics papers on Covid-19 and its effects… (On morning of January 8, 2022, 31424 papers on RePEc archive with the search for “covid” or “corona”)
- One strand of literature: Susceptible-Infected-Recover, SIR, parameterised epidemielogical models, also combined with DSGE models (Eichenbaum et al. 2020)
- Very large body of literature looking at economic activity with high-frequency data (daily or weekly, driven by access to large datasets)
- Much smaller set of papers looking at data at quarterly or annual frequency, here is our contribution

# Data 1

- Our variable to be explained, i.e. economic scarring from Covid-19 in country i: Country i's level of GDP in 2021 (as forecast in October 2021 edition of IMF's World Economic Outlook) minus level of GDP in 2021 (as forecast in October 2019 edition of IMF's World Economic Outlook, i.e. before pandemic)
- Example: In October 2019 the IMF forecast China's economy to grow 5.8% in 2020 and 5.9% in 2021; in October the corresponding growth estimates were 2.3% and 8%=> China's scarring was -1.5 pp.
- By way of comparison, India's scarring was -13.4 pp.
- Also robustness check with 2022 GDP level; results very similar

# Data 2, structural variables

- 1.) The share of international tourism in total exports,
- 2.) The share of employment in the services sectors in total employment,
- 3.) Trade openness (share of imports and exports in GDP),
- 4.) Internet availability,
- 5.) The level of human capital, measured by the human capital index obtained from the World Bank's World Development Indicators (WDI) database prior the pandemic in 2019 (human capital index for 2018),
- 6.) Population density and the share of population aged over 70 from the Our World in Data daily COVID-19 dataset
- 7.) GDP per capita in 2019 USD PPP

# Data 3, lockdowns, restrictions etc.

1. Lockdown policies, which are measured by period-average of the overall stringency index of the Oxford Blavatnik School of Government (0-100)
2. Number of days the stringency level has been above 70
3. Number of days workplace closure has been at the strictest level (four-step indicator)
4. Number of days mask mandates have been at the strictest level
5. Share of fully vaccinated in the population (September 2021)

# Data 4, economic policies

1. Amount of above the line measures (additional spending and forgone revenue) and below the line measures (equity, loans and guarantees) as a share of 2020 GDP (IMF Fiscal Monitor)
2. Change in M2 as share of GDP from 2019 to 2020

Note: In reported regressions we drop countries with less than one million inhabitants

# Regression 1: Structural variables

| | Dependent variable: Economic scarring 2021 | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| **Explanatory variables** | | | |
| Employment share in services 2019 | 0.051 | | |
| | (0.227) | | |
| Trade openess 2019 | 0.003 | | |
| | (0.812) | | |
| Population density | -0.000 | | |
| | (0.683) | | |
| Share of population aged >70 years | 0.311** | 0.364*** | 0.06 |
| | (0.032) | (0.005) | (0.751) |
| Tourism share of exports 2019 | -0.135*** | | |
| | (0.009) | | |
| Trade openness in tourism 2019 | | -0.165*** | -0.142*** |
| | | (0.003) | (0.008) |
| Human capital 2018 | | | 14.102* |
| | | | (0.064) |
| GDP per capita 2019 | | 0.045* | -0.04 |
| | | (0.081) | (0.295) |
| GDP per capita 2019 x Human capital 2018 | | | 0.645*** |
| | | | (0.006) |
| Constant | -10.438*** | -7.782*** | -7.685*** |
| | (0.000) | (0.000) | (0.000) |
| Sample | Countries with population >1 million | | |
| No. of countries | 98 | 98 | 95 |
| Adjusted R-squared | 0.166 | 0.210 | 0.268 |

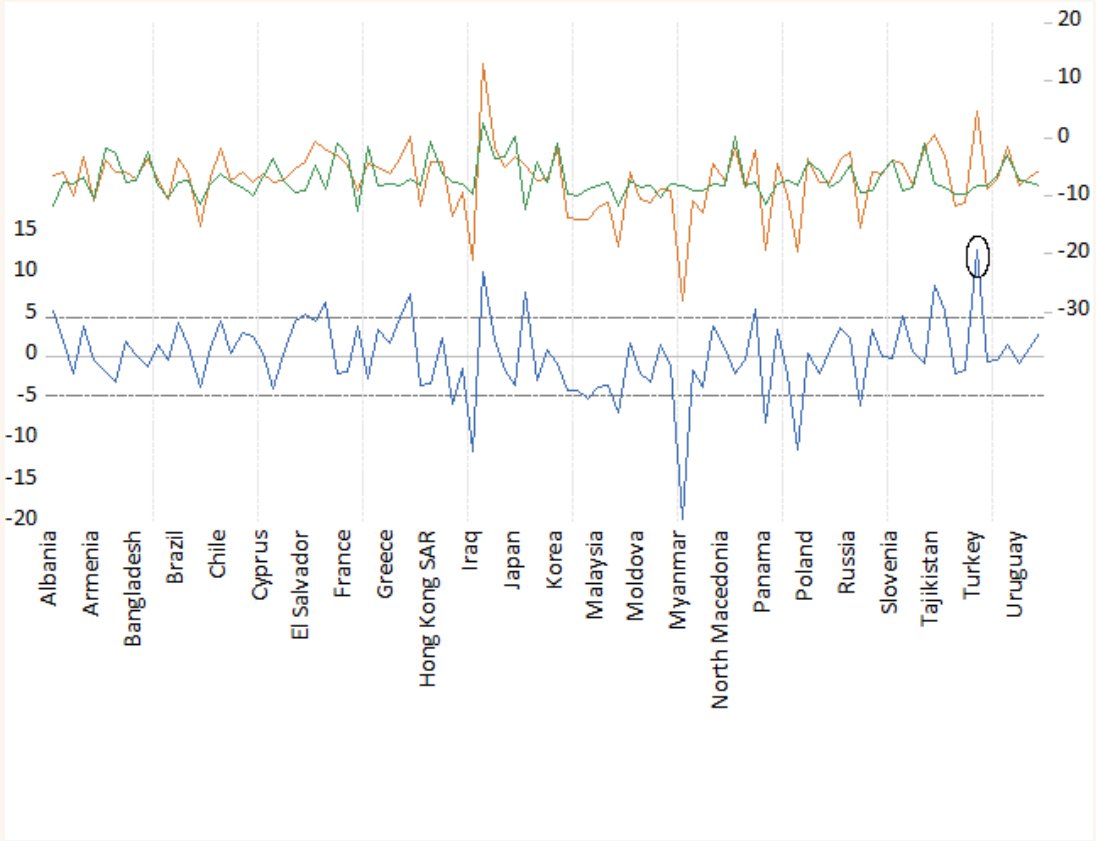
Note: *, ** and *** denote statistical significance at the 10%, 5% and 1% levels respectively, based on robust standard errors. P-values in parentheses.

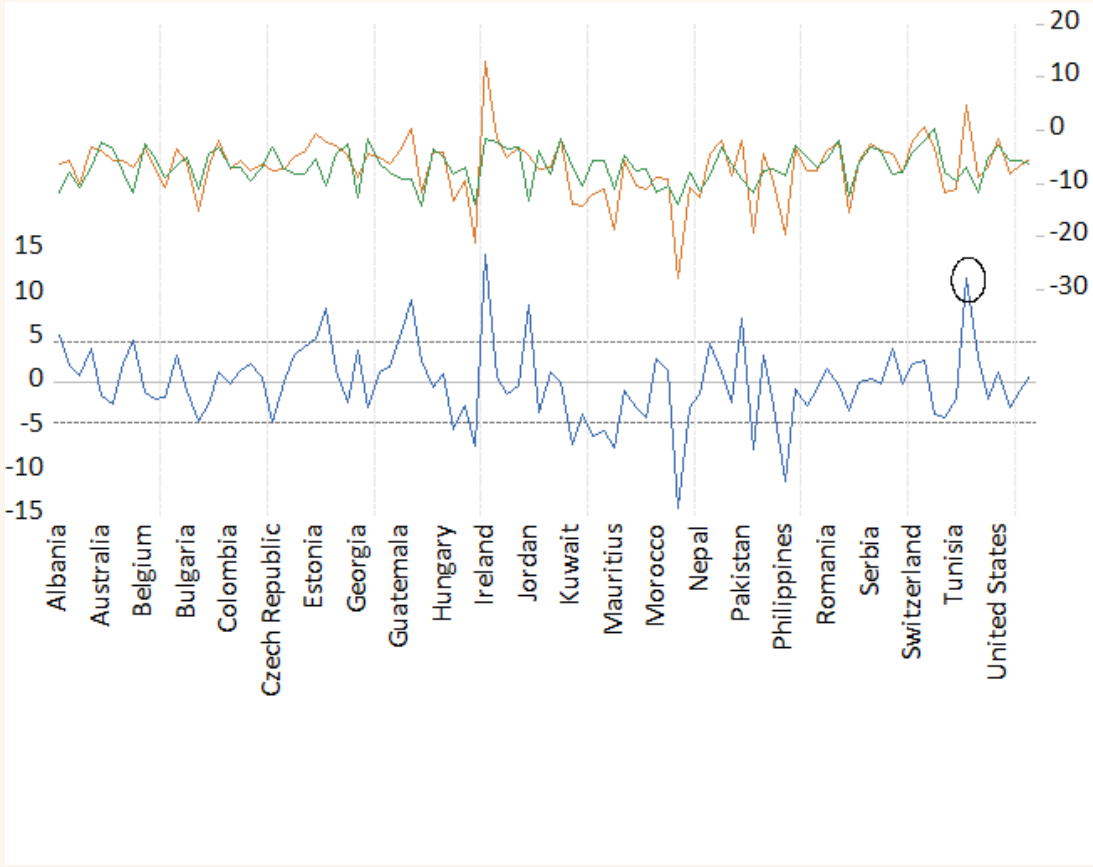
# Regression 2: Adding restrictions etc.

| | Dependent variable: Economic scarring 2021 | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| **Explanatory variables** | | | | |
| Trade openness in tourism 2019 | -0.175*** | -0.179*** | -0.193*** | -0.180*** |
| | (0.001) | (0.001) | (0.000) | (0.001) |
| Human capital 2018 | 18.807*** | 15.673*** | 15.815*** | 16.175*** |
| | (0.003) | (0.000) | (0.008) | (0.000) |
| Fully vaccinated (% of population) | 0.015 | | | |
| | (0.671) | | | |
| Lockdown stringency, average | | -0.151*** | -0.137*** | |
| | | (0.003) | (0.006) | |
| Government effectiveness 2019 | | | 0.114 | |
| | | | (0.910) | |
| Lockdown stringency x Government effectiveness | | | 0.163*** | |
| | | | (0.005) | |
| GDP per capita 2019 | -0.142* | | | |
| | (0.093) | | | |
| GDP per capita19 x fully vaccinated (% of population) | 0.003** | | | |
| | (0.044) | | | |
| Number of days when workplace closing = 3 | | | | -0.002 |
| | | | | (0.759) |
| Number of days when testing policy = 3 | | | | -0.004 |
| | | | | (0.203) |
| Number of days when contact tracing = 2 | | | | 0.001 |
| | | | | (0.737) |
| Number of days when mask requirements = 4 | | | | -0.001 |
| | | | | (0.759) |
| Constant | -17.713*** | -5.189*** | -5.051*** | 5.000*** |
| | (0.000) | (0.167) | (0.000) | (0.001) |
| Sample | Countries with population >1 million | | | |
| No. of countries | 96 | 92 | 92 | 96 |
| Adjusted R-squared | 0.235 | 0.281 | 0.329 | 0.204 |

Note: *, ** and *** denote statistical significance at the 10%, 5% and 1% levels respectively, based on robust standard errors. P-values in parentheses.

# How did large emerging markets do? Basically as could be expected – with one exception, Turkey



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# Concluding remarks, including next steps

- Economic scarring from the Covid-19 pandemic has been extensive, but it varies from one country to another a lot
- Structural factors can explain a significant portion of economic scarring in 2020-21 (tourism, human capital)
- More stringent Covid-19 restrictions have been associated with less scarring, when government effectiveness is high – hard to say which individual restrictions worked
- It is hard to tease out effects of fiscal or monetary policy from cross-section data
- Large emerging markets did as well/badly as could be expected, except for Turkey, which has embarked on an interesting policy experiment