# Post-Covid Inflation in Emerging Europe

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- Emerging markets are not the emerging markets of yore
- The same economics toolkit that helps make sense of post-Covid advanced economy inflation also helps make sense of emerging markets' inflation

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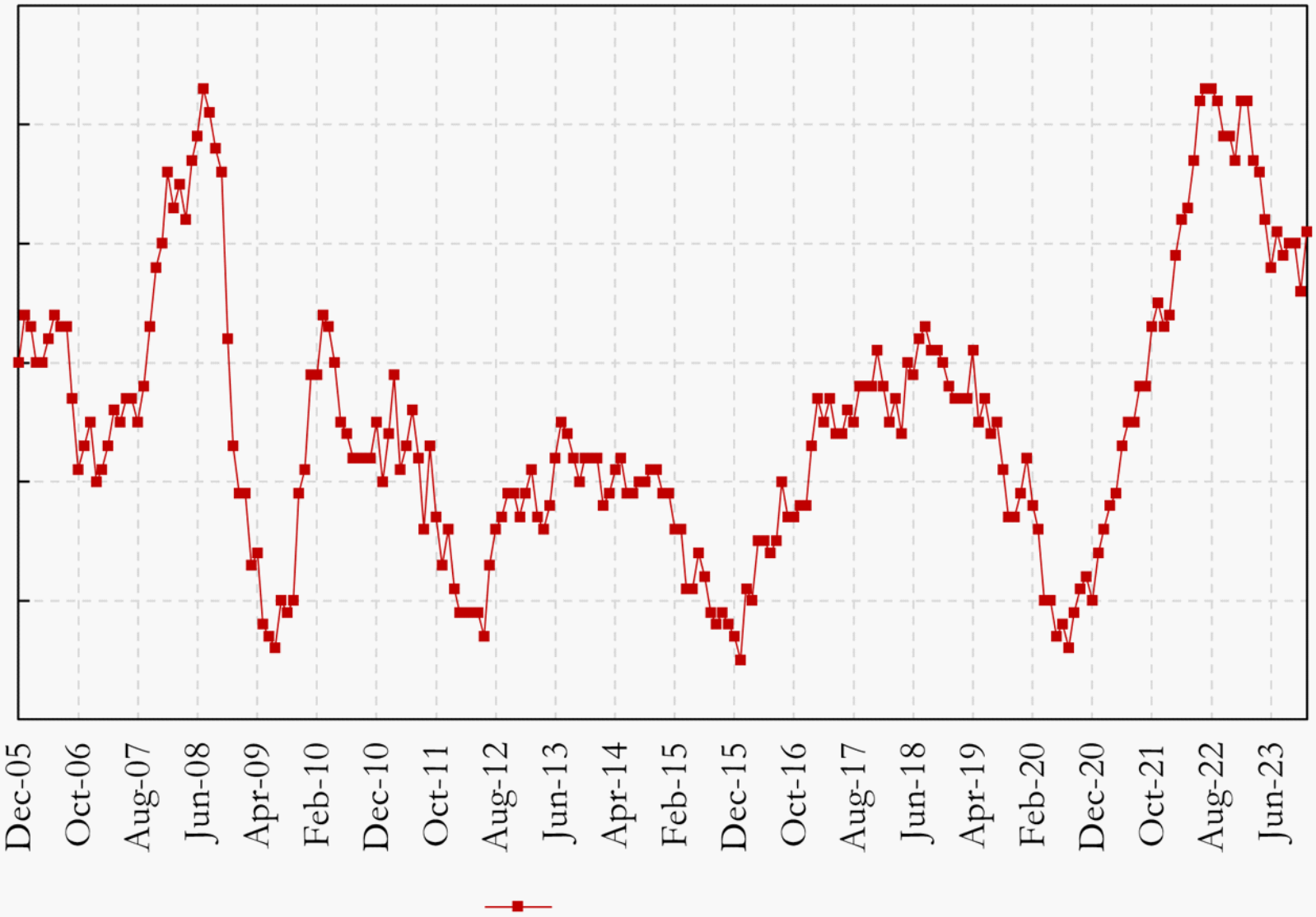
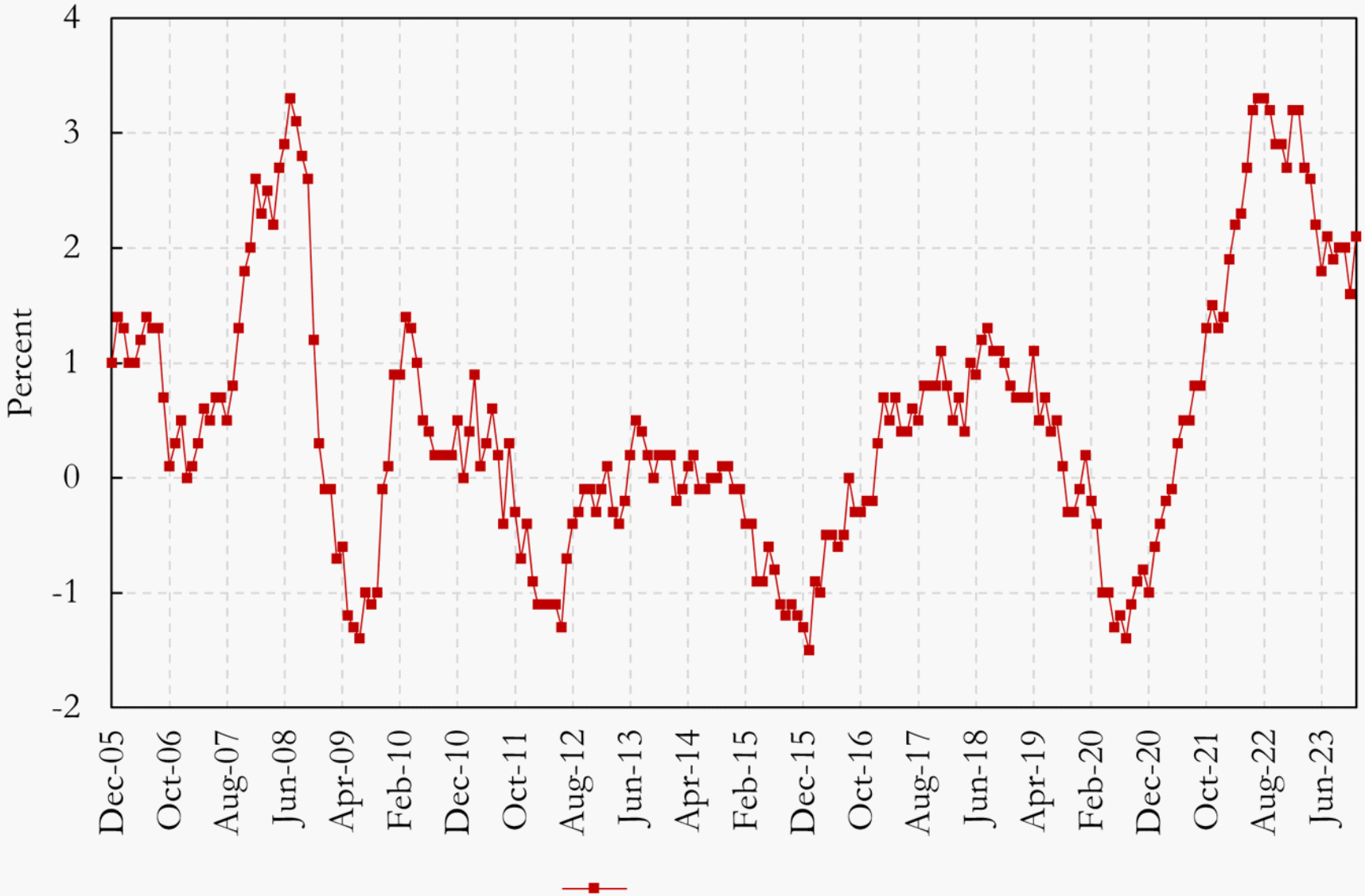
- The same economics toolkit that helps make sense of post-Covid advanced economy inflation also helps make sense of emerging markets' inflation
- In almost all cases in emerging Europe, the underlying reasons are also the same
- Turkey is the major exception with senseless policy mistakes creating high and persistent inflation
- In other emerging Europe the commodity price shock by itself explains the great majority of inflation run-up

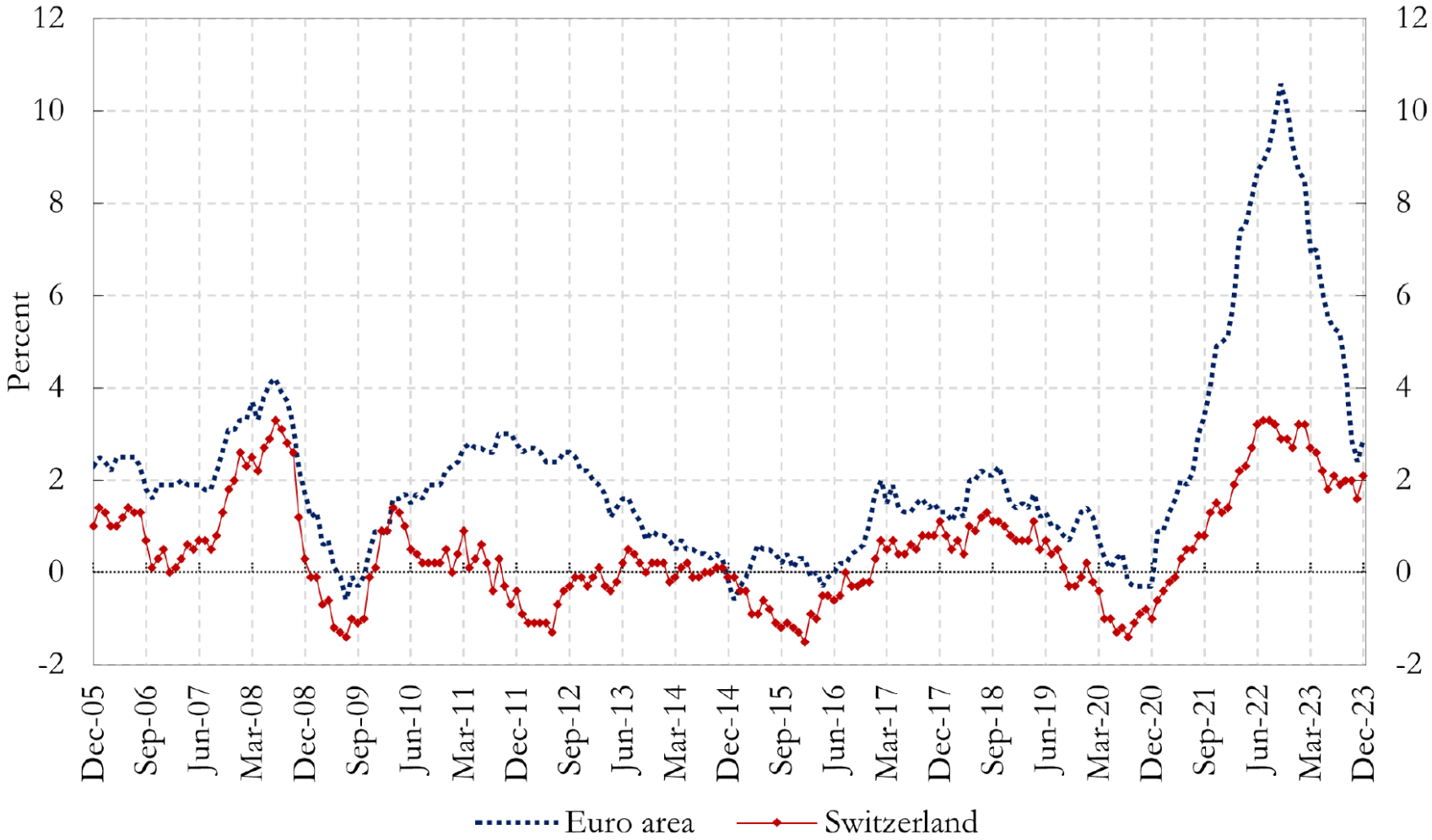
# A Familiar Inflation Path



# Hmm


Percent
4
3
2
1
0
-1
-2
Dec-05
Oct-06
Aug-07
Jun-08
Apr-09
Feb-10
Dec-10
Oct-11
Aug-12
Jun-13
Apr-14
Feb-15
Dec-15
Oct-16
Aug-17
Jun-18
Apr-19
Feb-20
Dec-20
Oct-21
Aug-22
Jun-23

# The Baseline



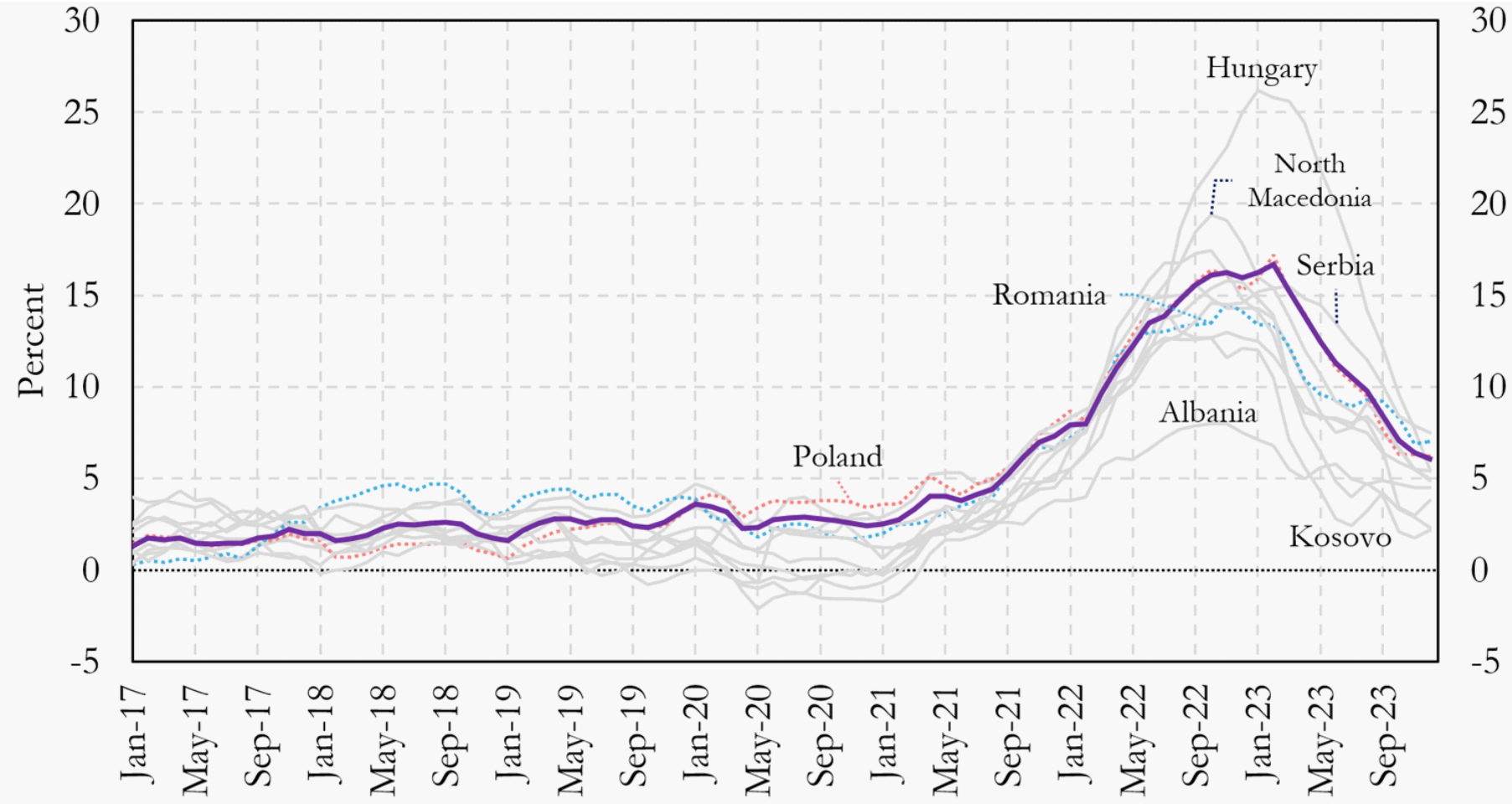
# Emerging Europe, FX regimes

| Country | Exchange Rate System | Currency |
|---|---|---|
| Croatia | Managed Floating Exchange Rate Regime (until 2023)<br>Became a euro area member in 2023 | Croatian kuna (HRK) joined ERM II in 2020<br>Adopted euro (EUR) |
| Romania | Managed floating exchange rate regime | Romanian leu (RON) |
| Serbia | Managed floating exchange rate regime | Serbian dinar (RSD) |
| Bosnia and Herzegovina | Fixed exchange rate pegged to euro (Currency Board) | Bosnia-Herzegovina convertible marka (BAM) |
| Bulgaria | Fixed exchange rate pegged to euro since 1997 (Currency Board) | Bulgarian lev (BGN) joined ERM II in 2020 |
| North Macedonia | Fixed exchange rate pegged to euro (Stabilized Arrangement) | North Macedonian denar (MKD) |
| Kosovo | Euroization | Unilaterally adopted euro (EUR) in 2002 |
| Montenegro | Euroization | Unilaterally adopted euro (EUR) in 2002 |
| Albania | Free floating exchange rate regime | Albanian lek (ALL) |
| Hungary | Free floating exchange rate regime | Hungarian forint (HUF) |
| Poland | Free floating exchange rate regime | Polish zloty (PLN) |

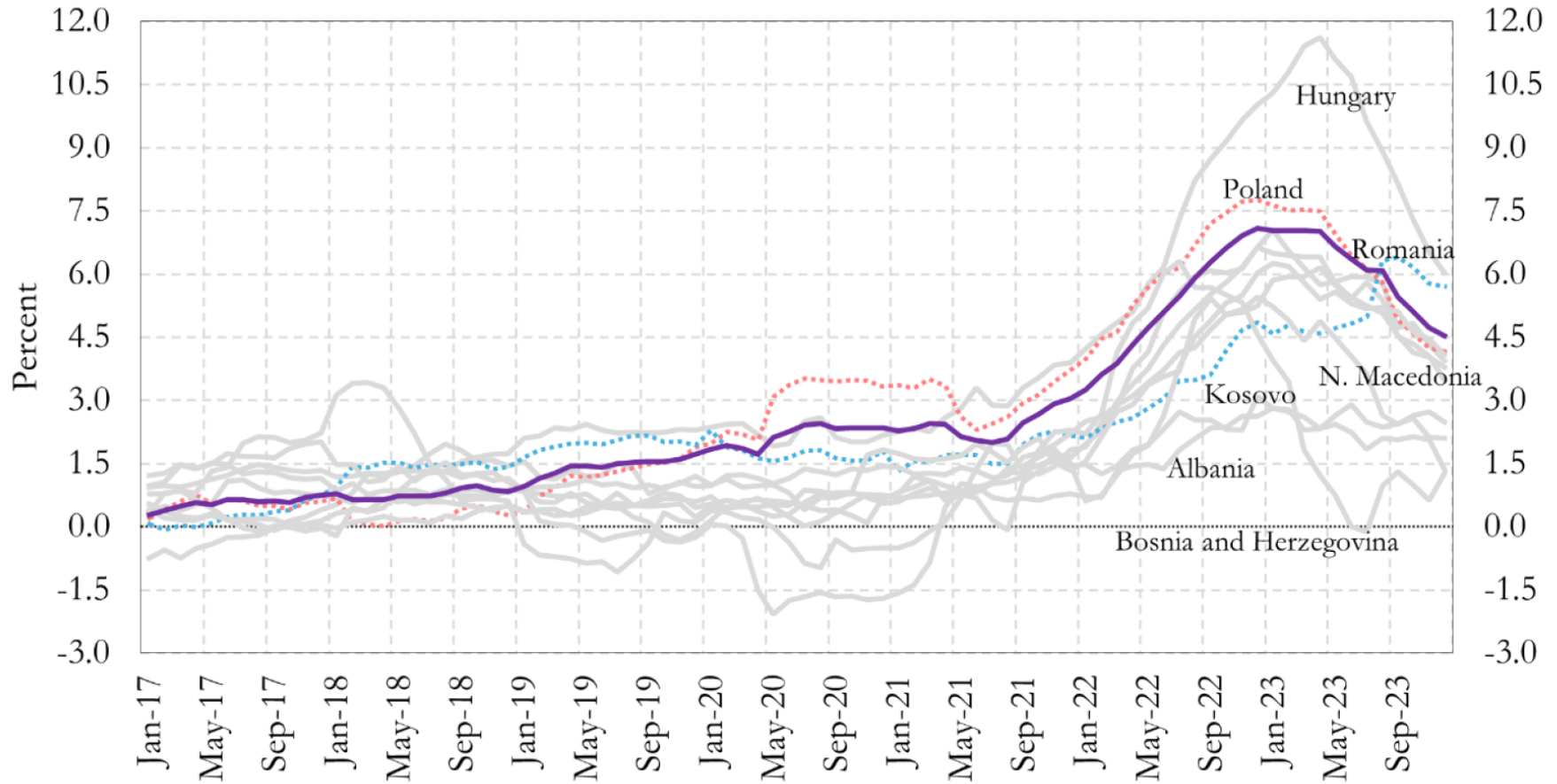
# Emerging Europe, GDP and inflation

| Countries | GDP per capita (€), 2019 | Inflation, 2019 | Cumulative inflation, 2021-2022 | Inflation, 2023 | Weight in emerging Europe |
|---|---|---|---|---|---|
| Albania | 4,820 | 1.5 | 11.7 | 4.5 | 1.2 |
| Bosnia and Herzegovina | 5,444 | 0.3 | 22.0 | 2.2 | 1.6 |
| Bulgaria | 8,820 | 3.1 | 21.9 | 5.0 | 5.5 |
| Croatia | 13,710 | 1.3 | 18.5 | 5.4 | 5.0 |
| Hungary | 15,000 | 4.1 | 34.2 | 5.5 | 13.1 |
| Kosovo | 3,944 | 1.2 | 19.6 | 2.3 | 0.6 |
| Montenegro | 7,960 | 1.1 | 20.9 | 4.9 | 0.4 |
| North Macedonia | 6,000 | -0.2 | 23.5 | 3.8 | 1.0 |
| Poland | 13,870 | 3.0 | 24.6 | 6.2 | 47.5 |
| Romania | 11,560 | 4.0 | 21.8 | 7.0 | 20.0 |
| Serbia | 6,620 | 2.1 | 23.7 | 7.5 | 4.1 |
| Türkiye | 8,220 | 11.8 | 123.5 | 64.9 | - |
| Switzerland | 7,5150 | -0.1 | 4.1 | 2.1 | - |
| Euro area | 34,760 | 1.3 | 14.6 | 2.9 | - |
| Emerging Europe | 11,711 | 3.1 | 24.5 | 6.1 | 100 |

# Headline Inflation



# Core Inflation



# One Factor Rules Them All

| Countries | Headline inflation PC1 loadings | Core inflation PC1 loadings |
|---|---|---|
| Albania | 0.093 | 0.112 |
| Bosnia and Herzegovina | 0.095 | 0.081 |
| Bulgaria | 0.097 | 0.111 |
| Croatia | 0.098 | 0.118 |
| Hungary | 0.091 | 0.115 |
| Kosovo | 0.091 | 0.087 |
| Montenegro | 0.096 | 0.108 |
| North Macedonia | 0.096 | 0.095 |
| Poland | 0.095 | 0.099 |
| Romania | 0.095 | 0.106 |
| Serbia | 0.095 | 0.114 |
| Explained variance | 92.14% | 75.11% |

# Observations

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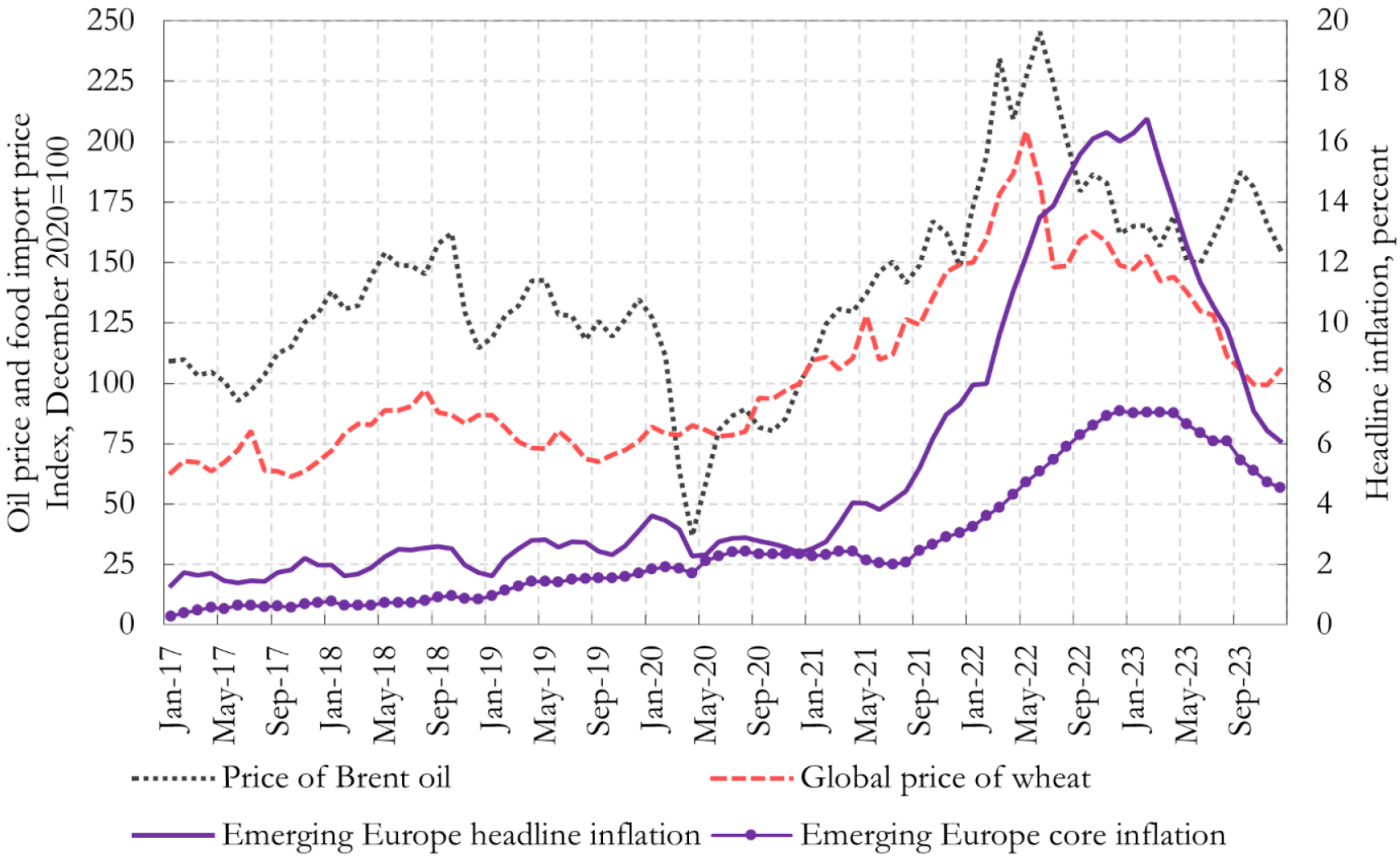
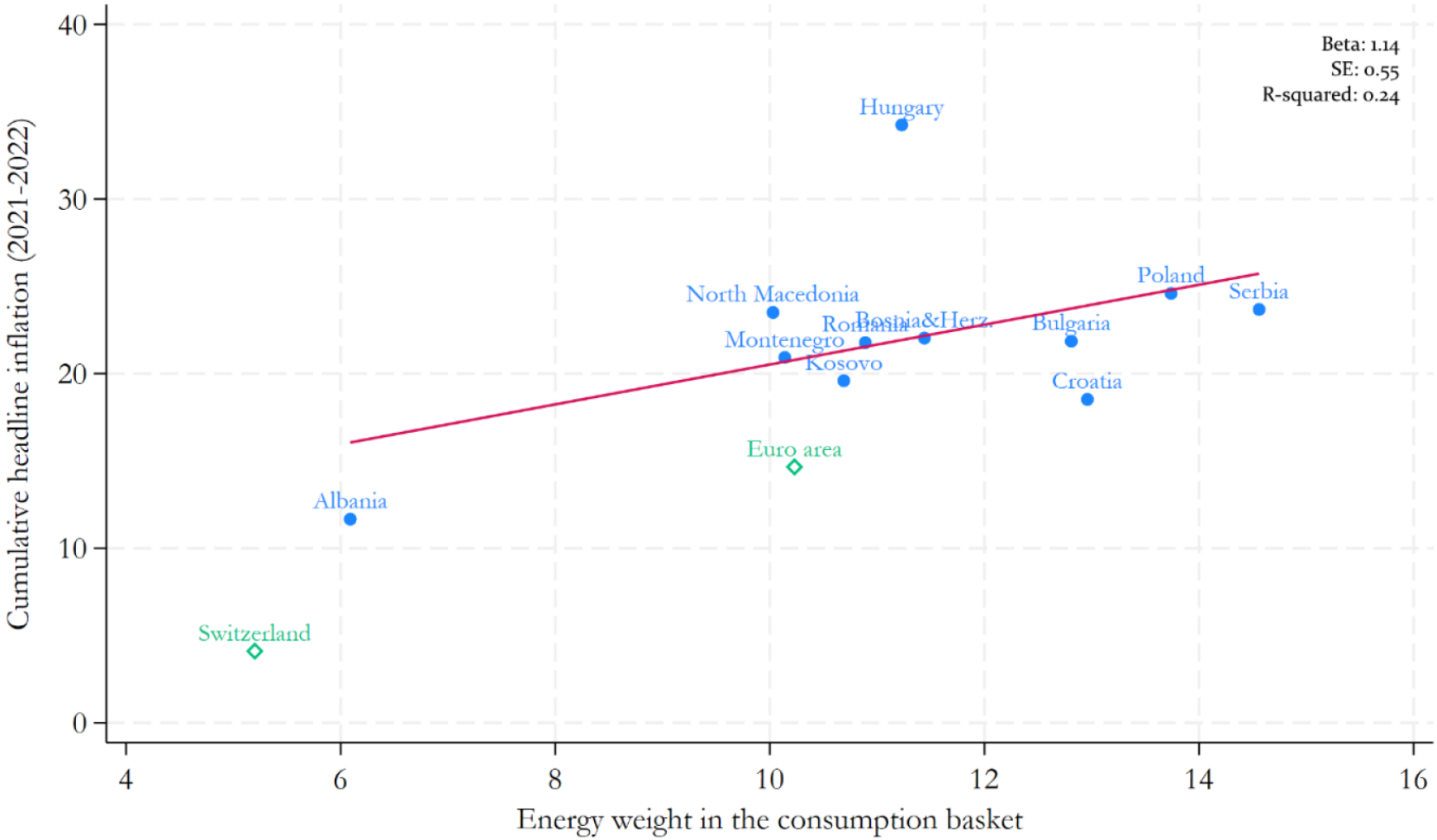
- Hard to coordinate on common policy error
- But, these countries mostly follow ECB policy so common policy error may be imported
- Common external shock is the better explanation

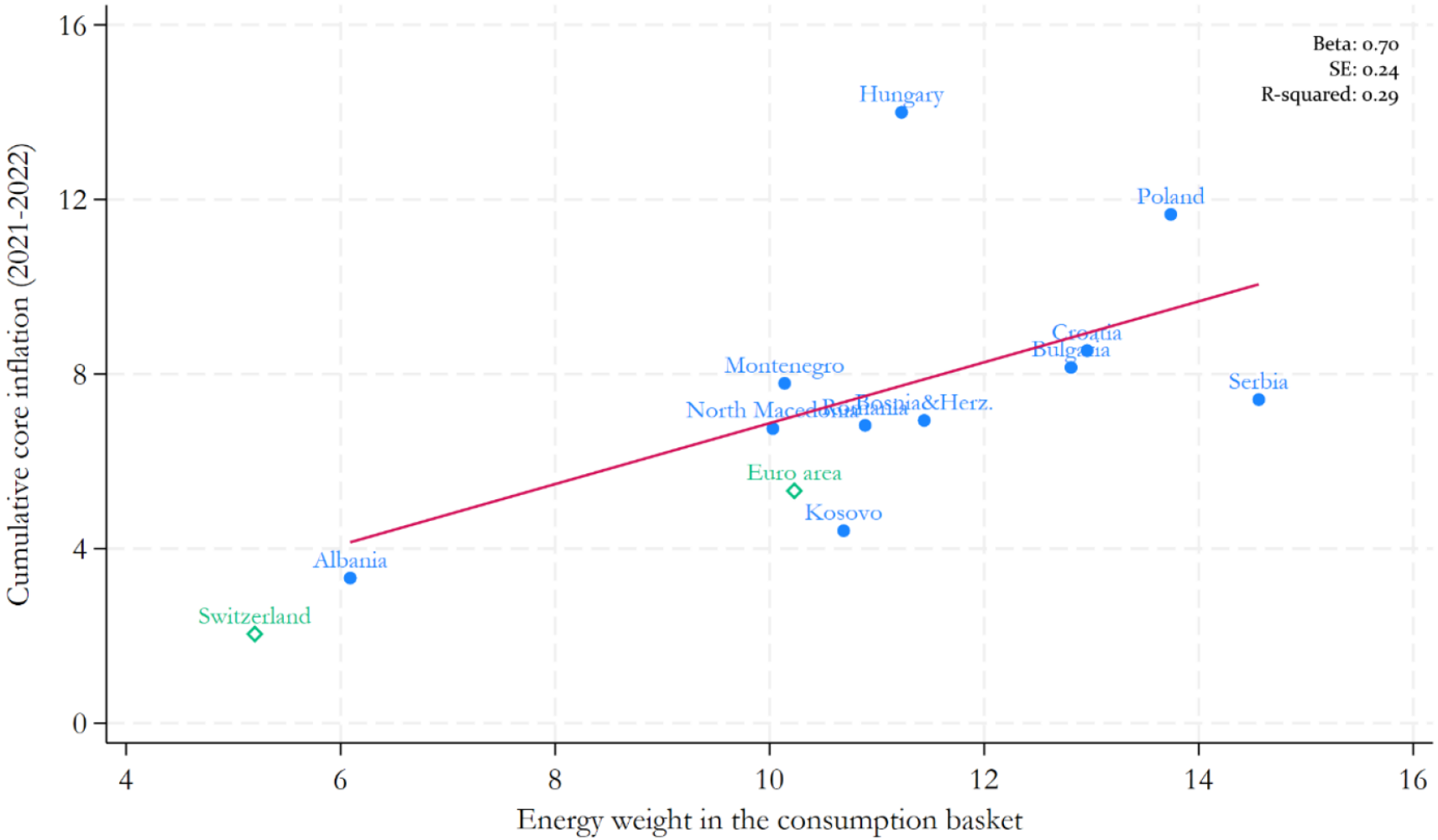
# Commodity Prices and Inflation



# Weight of Energy in Consumption Basket and Headline Inflation



# Weight of Energy in Consumption Basket and Core Inflation



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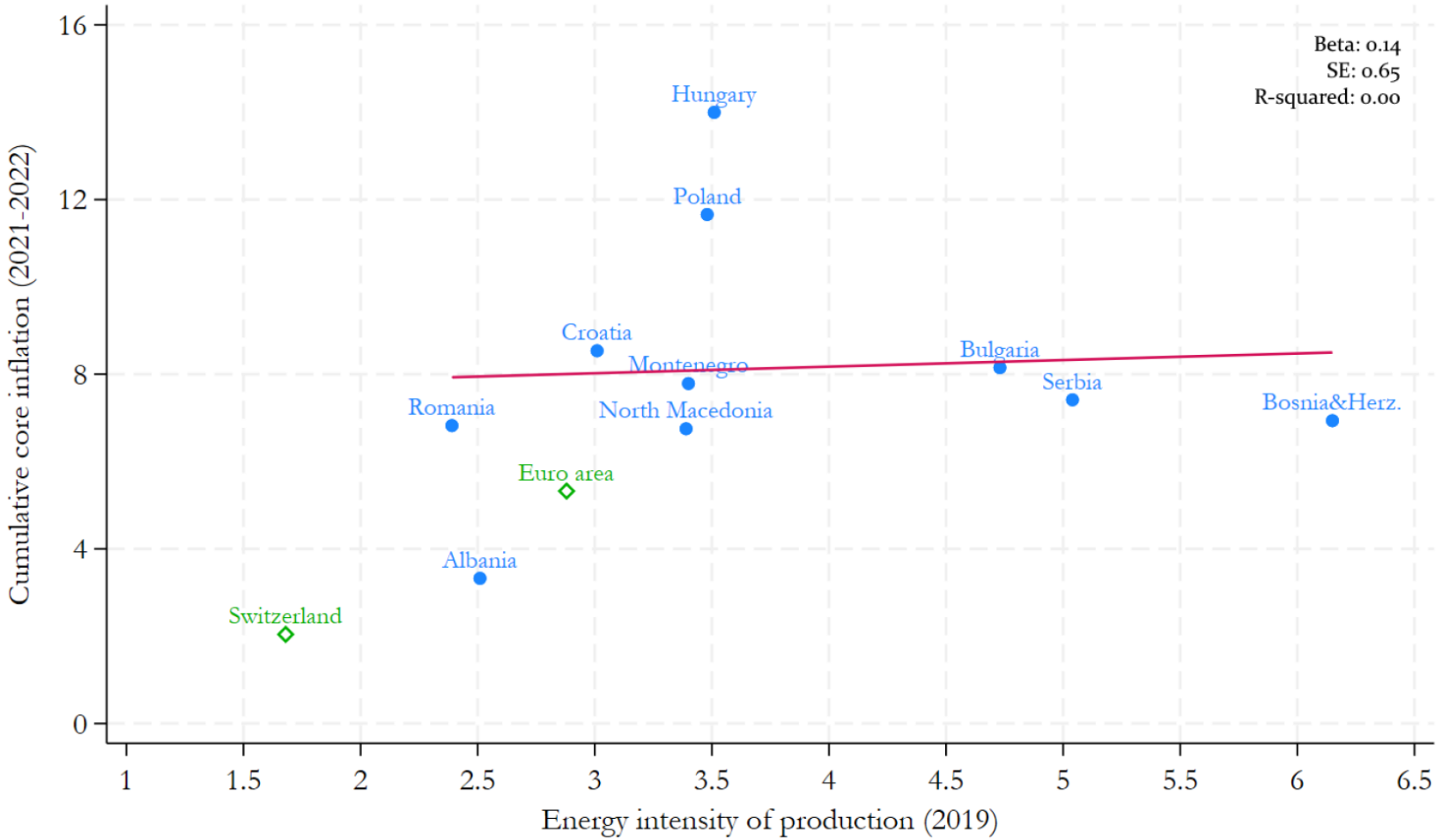
- Wage pressure unlikely, *not* the same relationship with food weight in basket
- Energy shock is also supply shock

# Energy Intensity of Production



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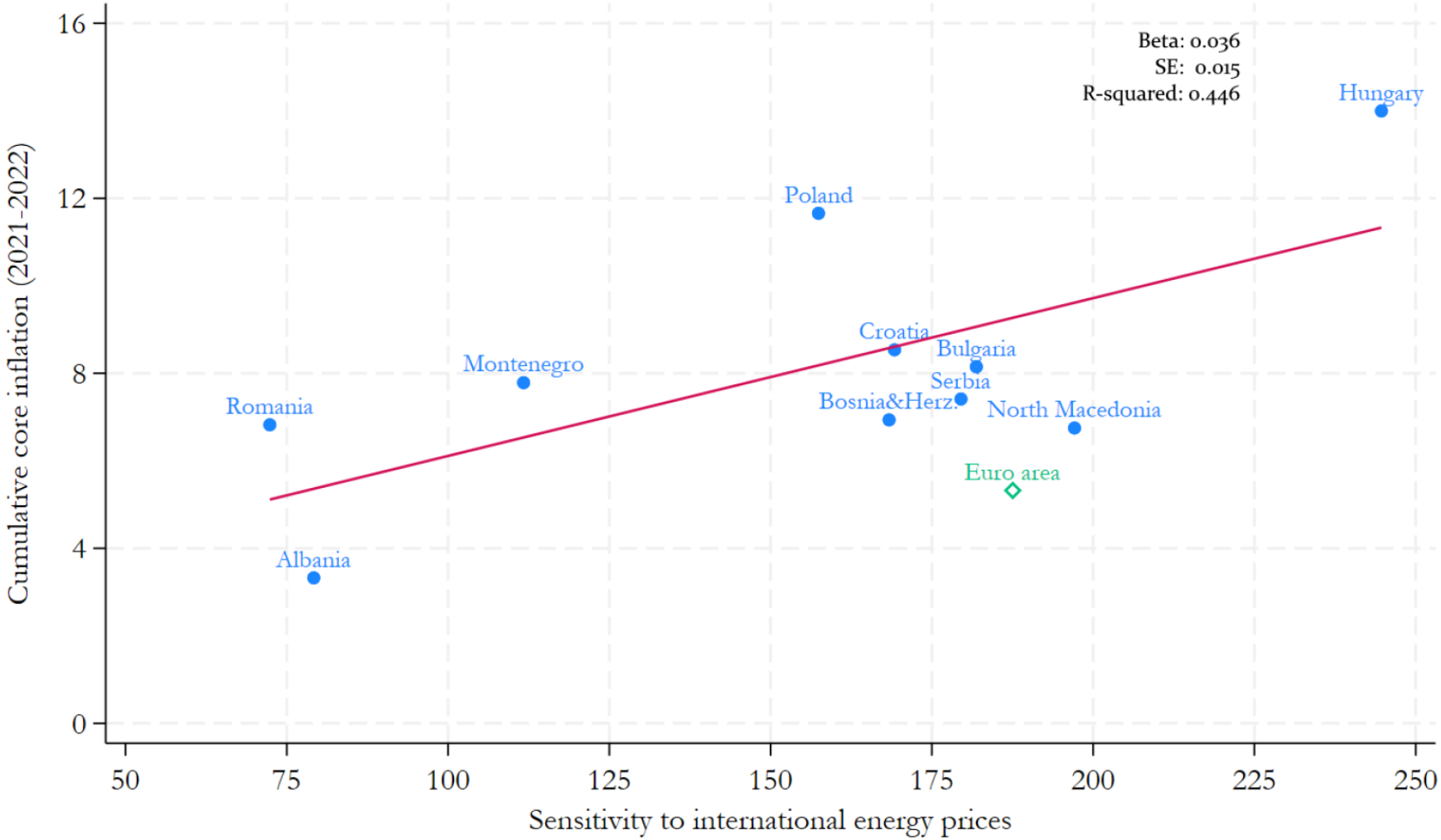
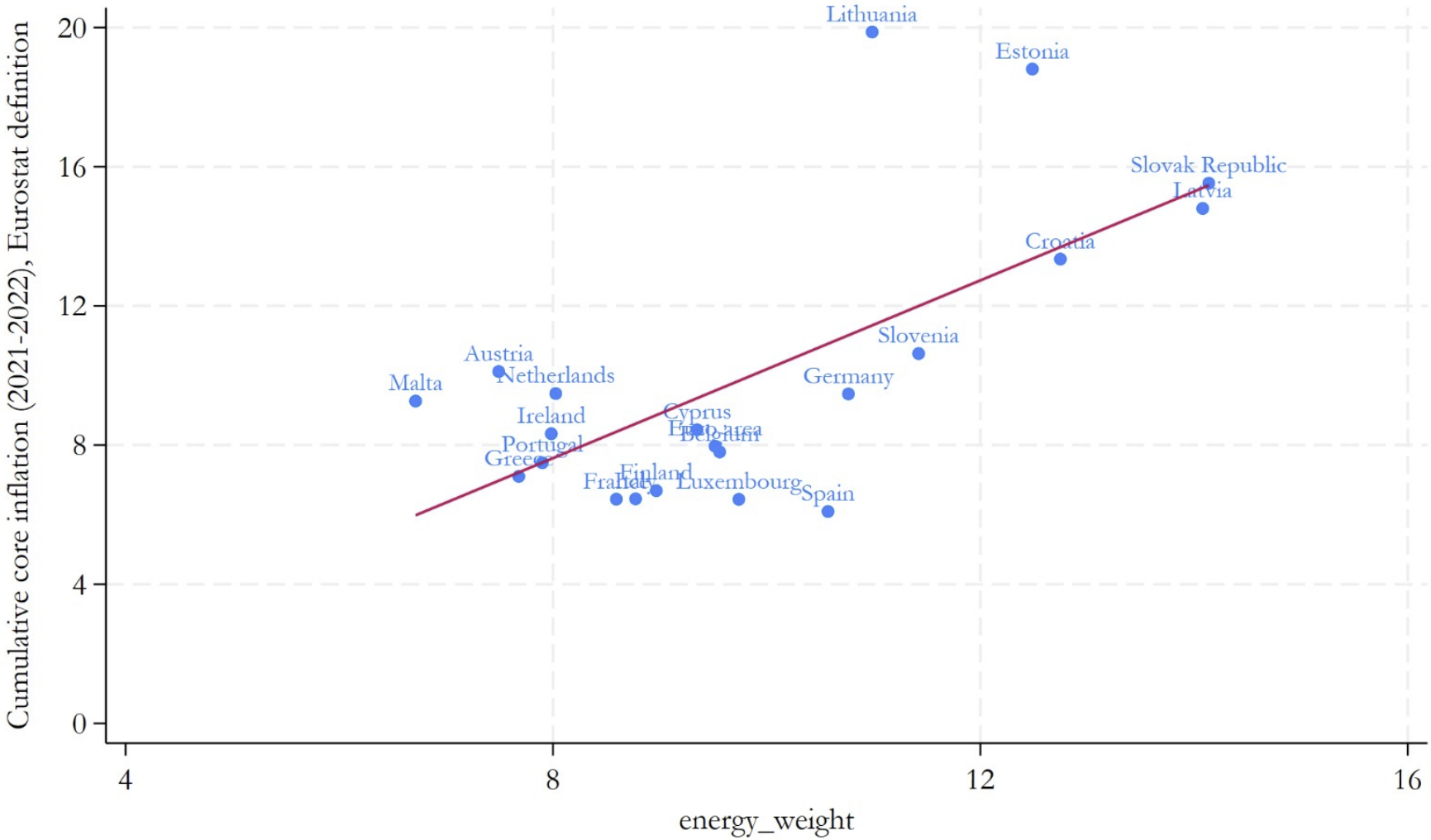
- Imported energy is sensitive to the world price, local energy is much less so
- Define energy sensitivity of production as energy intensity x share of imported energy

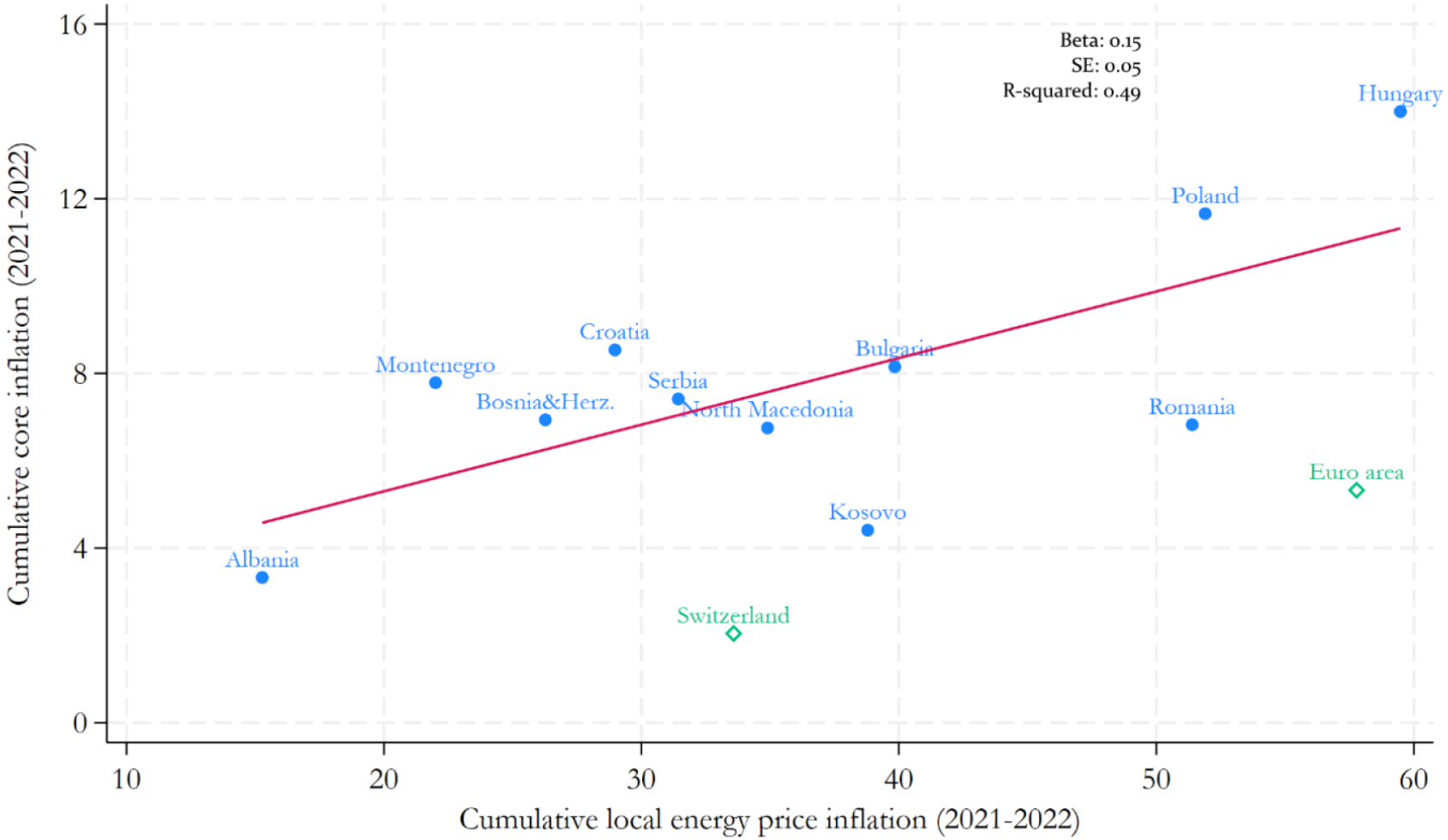
# Energy Sensitivity of Production and Core Inflation



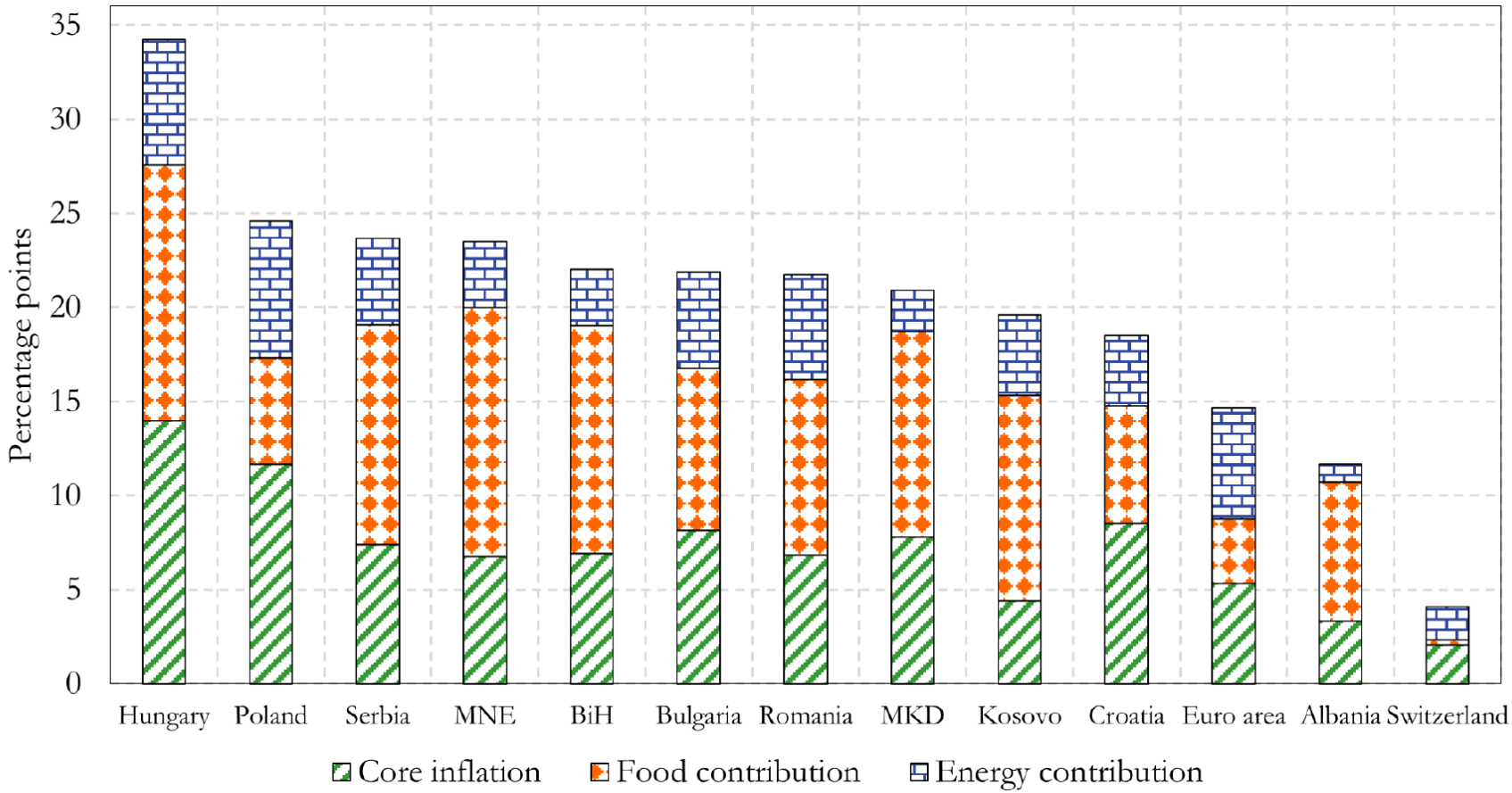
# Memo: Energy weight in basket and core inflation in EA



# Energy inflation and core



# Core and non-core inflation



# Econometrics

| Sample period: January 2021-December 2022 | | |
|---|---|---|
| Dependent variable | Annual headline inflation | Annual core inflation |
| Energy contribution to annual headline inflation | 1.53*** | 0.53** |
| | (0.20) | (0.20) |
| Food contribution to annual headline inflation | 1.35*** | 0.35*** |
| | (0.09) | (0.09) |
| Constant | 0.74*** | 0.75*** |
| | (0.26) | (0.26) |
| Observations | 264 | 264 |
| $R^2$ | 0.93 | 0.53 |

Pooled OLS regression results with Newey-West standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01

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- Iffy econometrics, may be spurious
- Importantly, leaves very little room for supply chain disruptions
- Can we test if this is a mechanical result of regressing headline and core inflation on components of inflation?

| Sample period: January 2018-December 2019 | | |
|---|---|---|
| Dependent variable | Annual headline inflation | Annual core inflation |
| Energy contribution to annual headline inflation | 1.41*** | 0.41*** |
| | (0.14) | (0.14) |
| Food contribution to annual headline inflation | 1.11*** | 0.12 |
| | (0.19) | (0.19) |
| Constant | 0.68*** | 0.68*** |
| | (0.19) | (0.19) |
| Observations | 264 | 264 |
| $R^2$ | 0.60 | 0.07 |

# Culprit: External Shock

- Countries were differentiated by their exposure to the same shock
- Conditional on that, we understand much of the inflation response

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- Albania is an energy producer and exporter
- Lek was appreciating
- Very similar to Switzerland in energy sufficiency and appreciating currency

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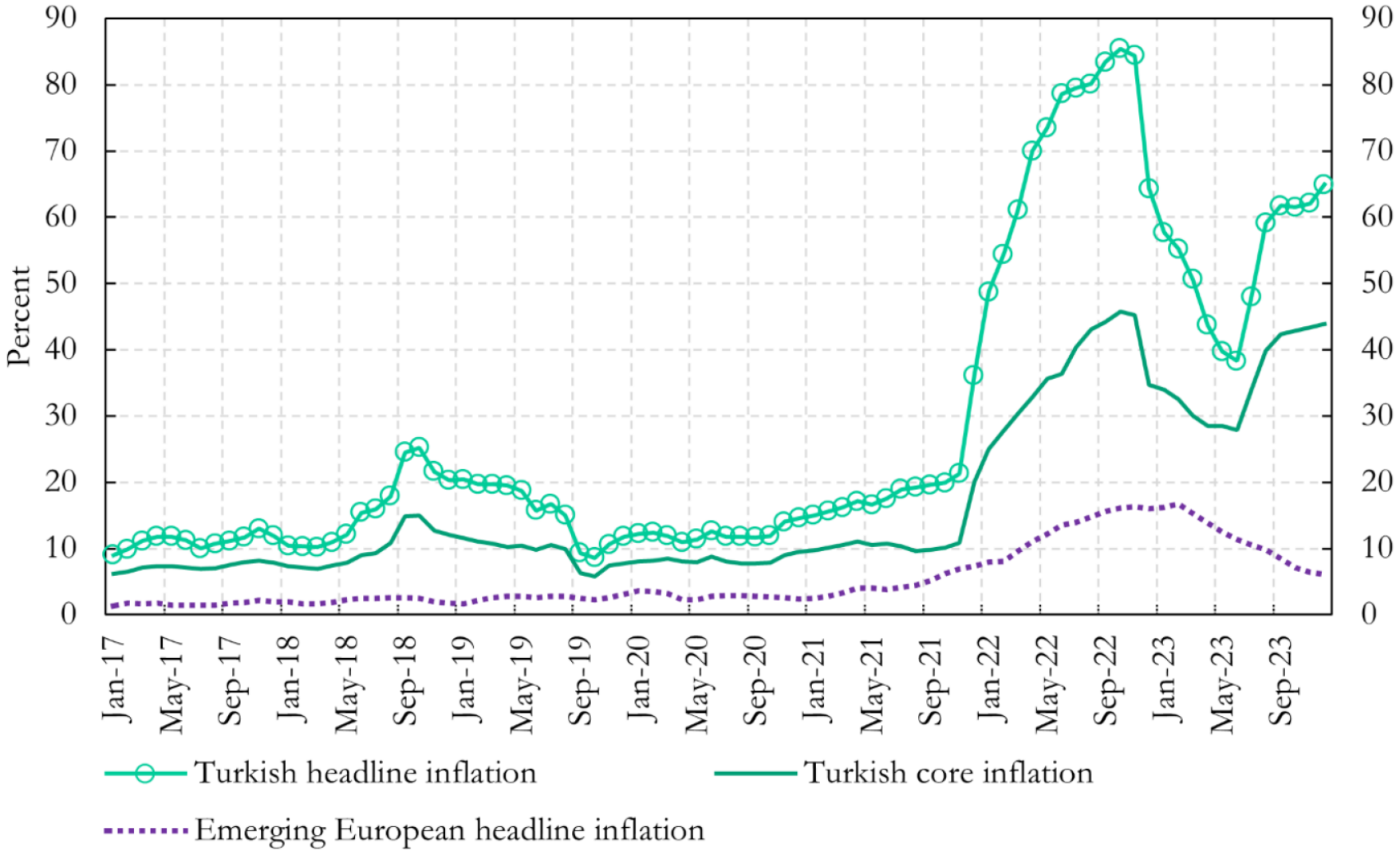
- Where macro policy is very relevant: Turkey

# Exception that proves the rule



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- Accompanying mix of very funky policies (for a time) to limit the fallout
  - Using the variance of the effective rate as a policy tool
  - Off-market rates offered for reserves in foreign currency
  - Banks forced to use discount window, rates above the top end of corridor
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  - Long rates shooting up
  - Regulation to push them back down
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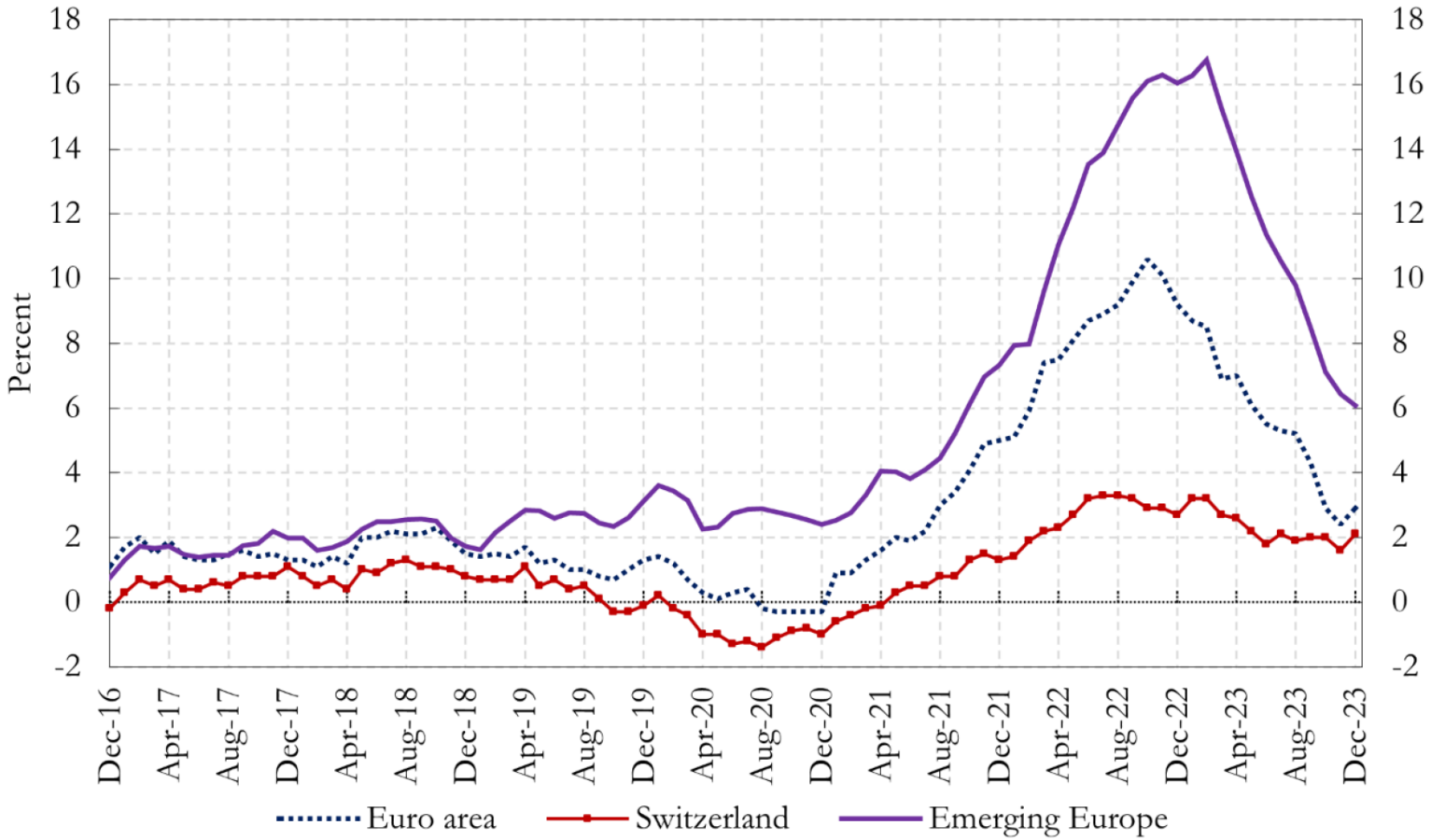
- Turkey is what policy driven inflation in emerging markets looks like

# Commodity Price Driven Post-Covid Inflation



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- Energy price shock explains the inflation in emerging Europe
- Open question: Why is the level of inflation conditional on country characteristics higher in emerging Europe compared to EA?
- Very worth thinking about