

# **Inflation:** *Peeling the Onion*

*Kristin Forbes*

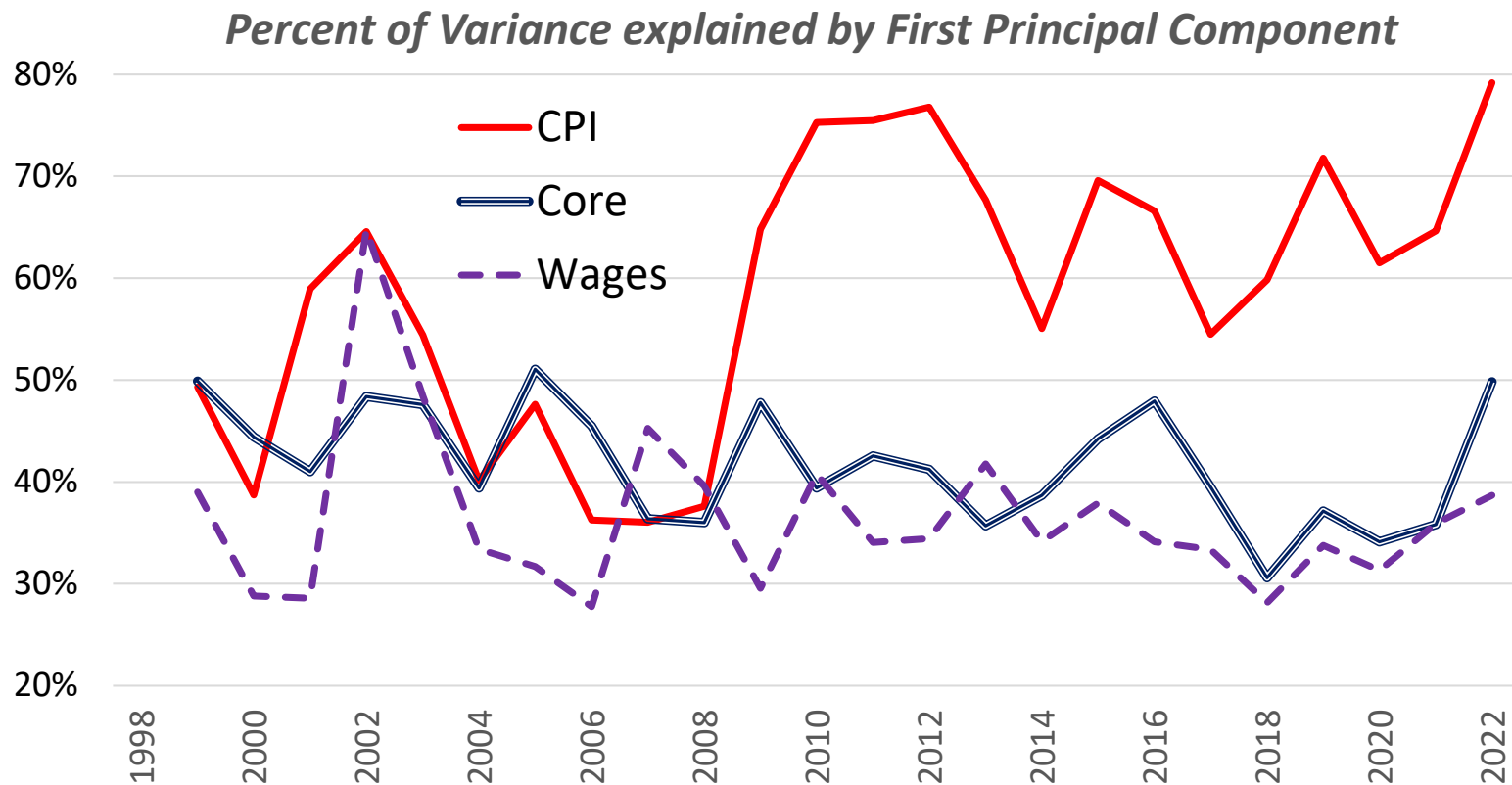
*MIT-Sloan School of Management, NBER & CEPR*



**NY Fed Advisory Board**  
**October 21, 2022**

# Global vs. Domestic Components

## *Different Inflation Measures*



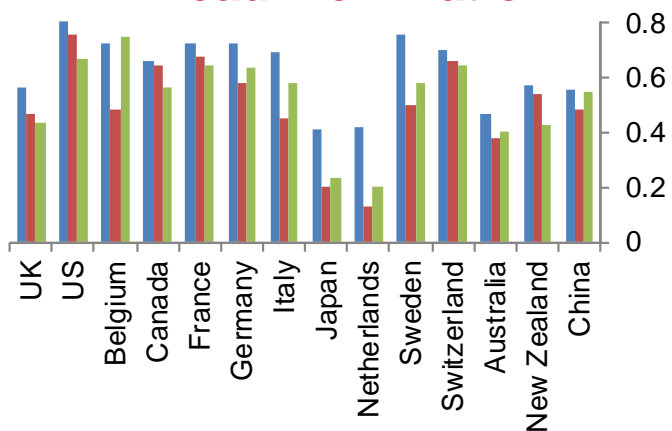
**Notes:** Percent of variance of quarterly inflation explained by the first principal component. Calculated as 5-year rolling averages for 24 advanced economies with OECD data. CPI is CPI or HPIC inflation. Core is CPI inflation excluding food and energy. Wage inflation is based on hourly earnings in manufacturing. All inflation data from OECD. Updated version of analysis in Forbes (2020), "Inflation Dynamics: Dead, Dormant or Determined Abroad?". *Brookings Papers on Economic Activity*, Fall.



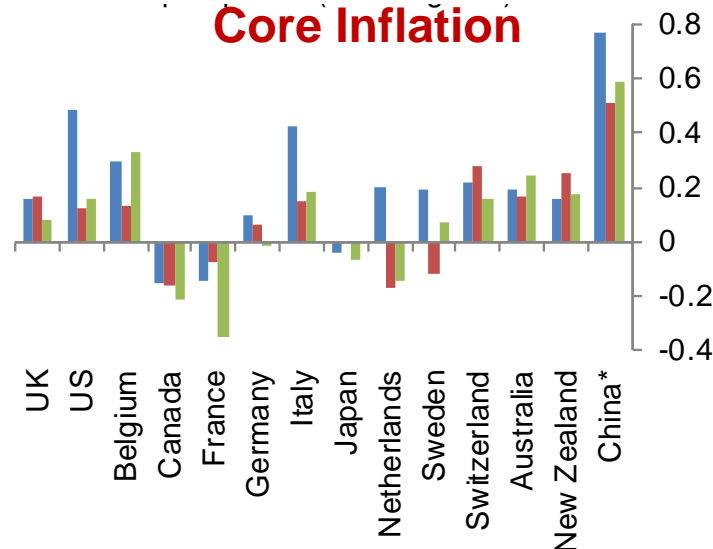
# Inflation Correlations by Country

## with World Inflation, Oil Prices & World Export Prices (2000-14)

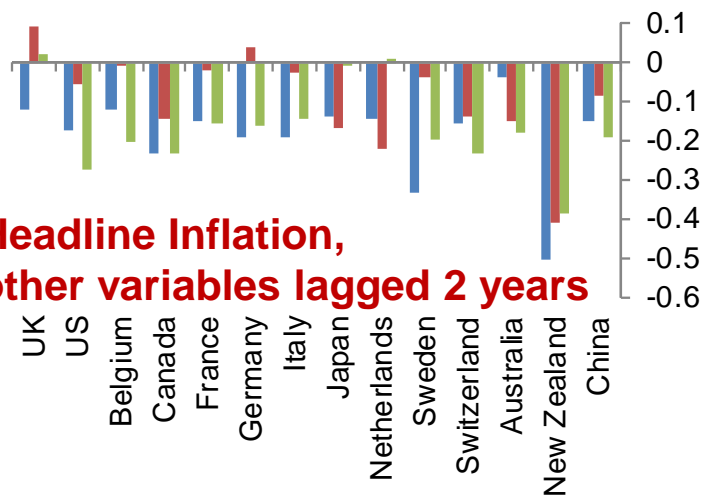
### Headline Inflation



### Core Inflation



### Headline Inflation, other variables lagged 2 years



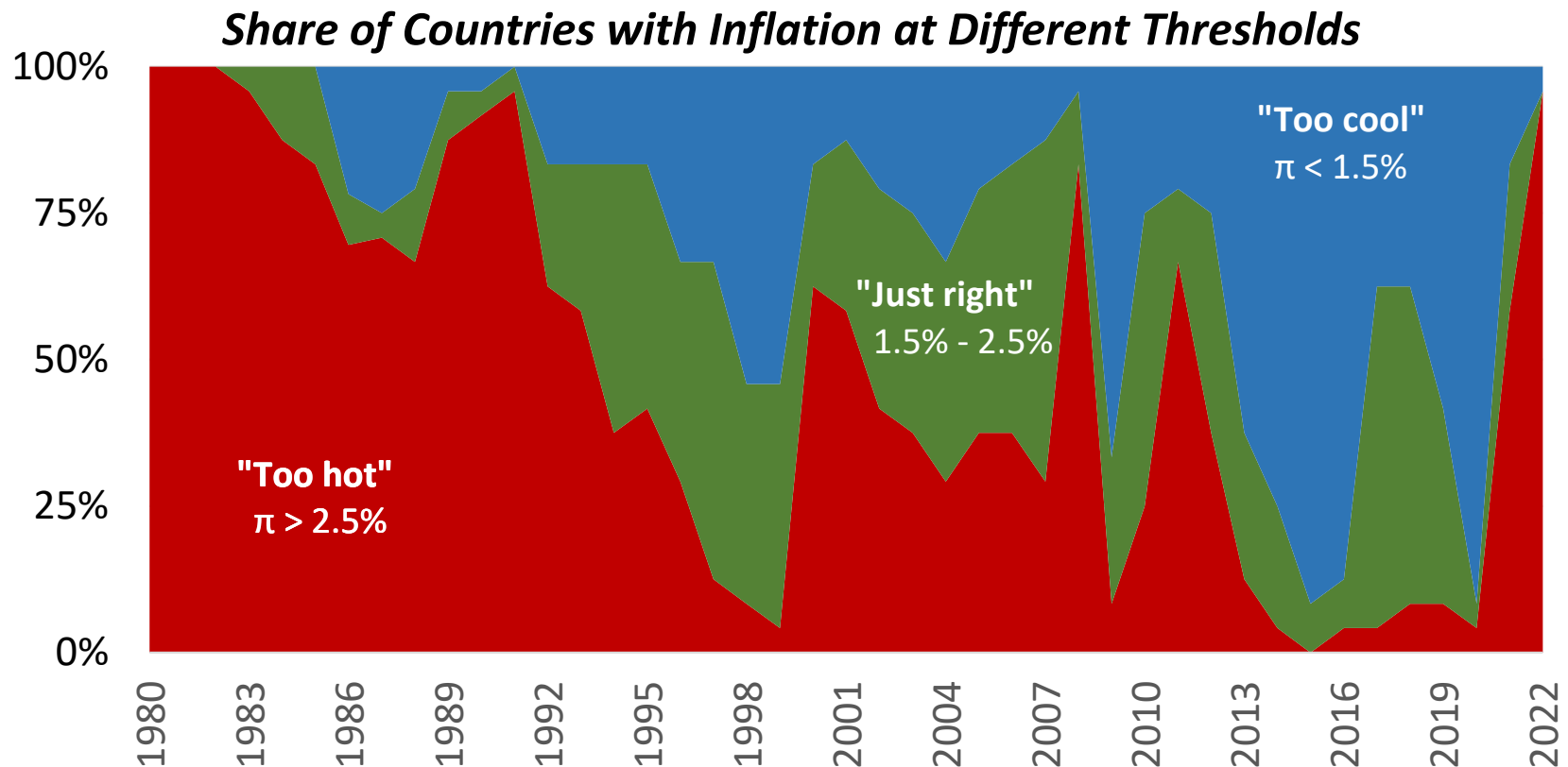
- Global CPI (or core) inflation (PPP-weighted)
- Brent oil (\$)
- World oil export prices (UK-weighted)

**Source:** Speech by Kristin Forbes, "When, Why and What's Next for Low Inflation: No Magic Slippers Needed." June 17, 2015. London School of Economics.



# Hitting Inflation Targets

## *Divergence and Difficulty*



**Notes:** Percent of countries in sample with annual CPI inflation that is "too hot" ( $>2.5\%$ ); "just right" (1.5%-2.5%) or "too cool" ( $<1.5\%$ ). Sample is 24 advanced economies in the OECD and underlying data from IMF, *World Economic Outlook*, April 2022..



# Drivers of Inflation

## *One Framework*

Open-economy Phillips curve/accounting:

**Domestic factors:**

$$\pi_{it} = \beta_1 \pi_{it}^e + \beta_2 \pi_{it}^L + \beta_3 SLACK_{it}^D + \alpha_i + \epsilon_{it}$$

**Mix domestic/global:**

$$+\delta_1 ER_{it}$$

**Global factors**

$$+\gamma_1 Oil_{it}^W + \gamma_2 Comm_{it}^W + \gamma_3 SLACK_t^W + \gamma_4 GVC_t^W$$



# Different Drivers across Countries

## Decompositions of headline inflation rates

*(Contributions to annual consumer price inflation)*

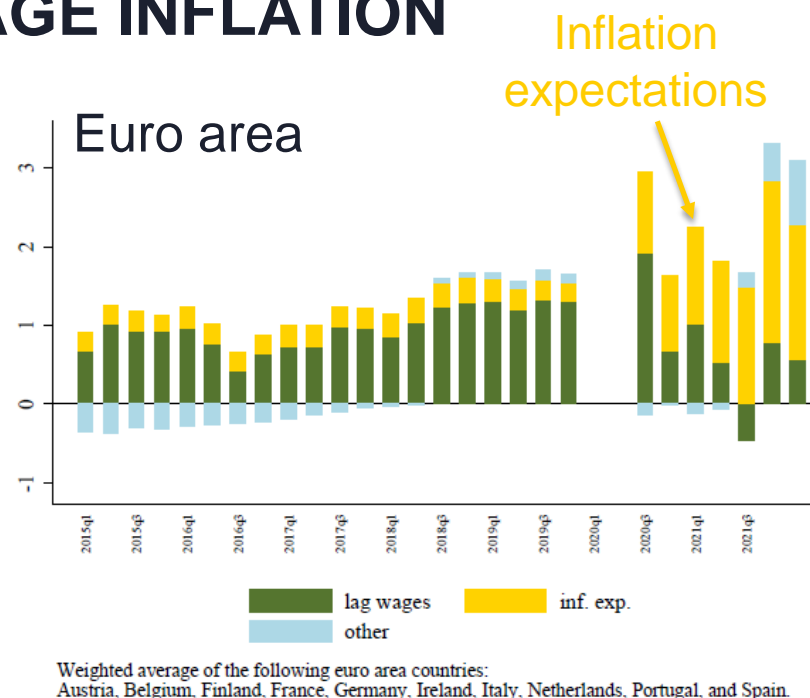
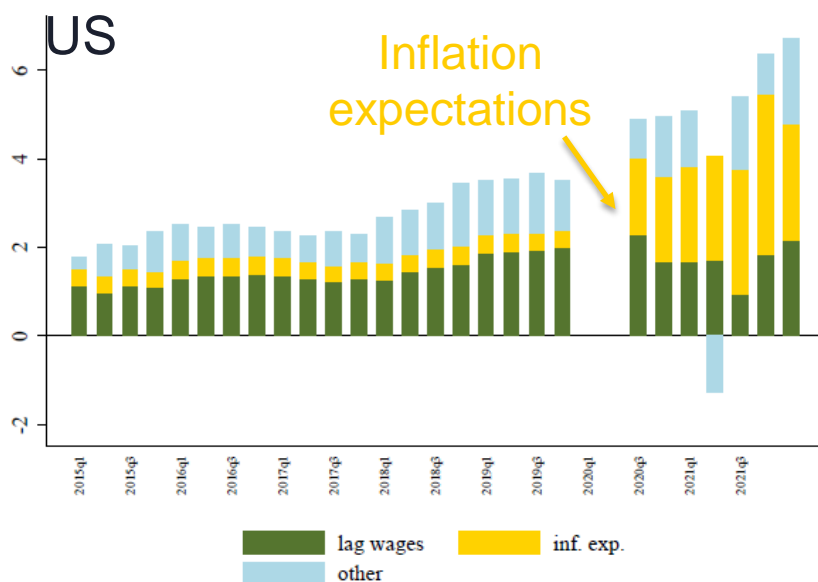


**Source:** Speech by David Ramsden, "Shocks, Inflation and the Policy Response", Bank of England, given 10/07/22



# Yet Similar Role of Inflation Expectations on Wages?

## DRIVERS OF WAGE INFLATION



Source: Oscar Jorda and Fernanda Nechio (2022), "Inflation and Wage Growth since the Pandemic"



# Does High Inflation Abroad Matter?

## *Evidence from the UK*

$$\begin{aligned}\pi_t = & \beta_0 + \beta_1\pi_{t+1} + \beta_2\pi_{t-1} + \beta_3\text{OutputGap}_t \\ & + \beta_4\Delta ER_t + \beta_5\Delta Oil_t + \beta_6\Delta \text{WorldExpPrices}_t \\ & + \beta_7\Delta \text{FrancePrices}_t\end{aligned}$$

$\pi_{t+1}$  ,  $\pi_{t-1}$  : expected and lagged inflation

$\text{OutputGap}_t$  : the output gap

Supply shocks:

$\Delta ER_t$  : the exchange rate

$\Delta Oil_t$  : oil price

$\Delta \text{WorldExpPrices}_t$  : other world export prices excluding oil

$\Delta \text{FrancePrices}_t$  : inflation in France

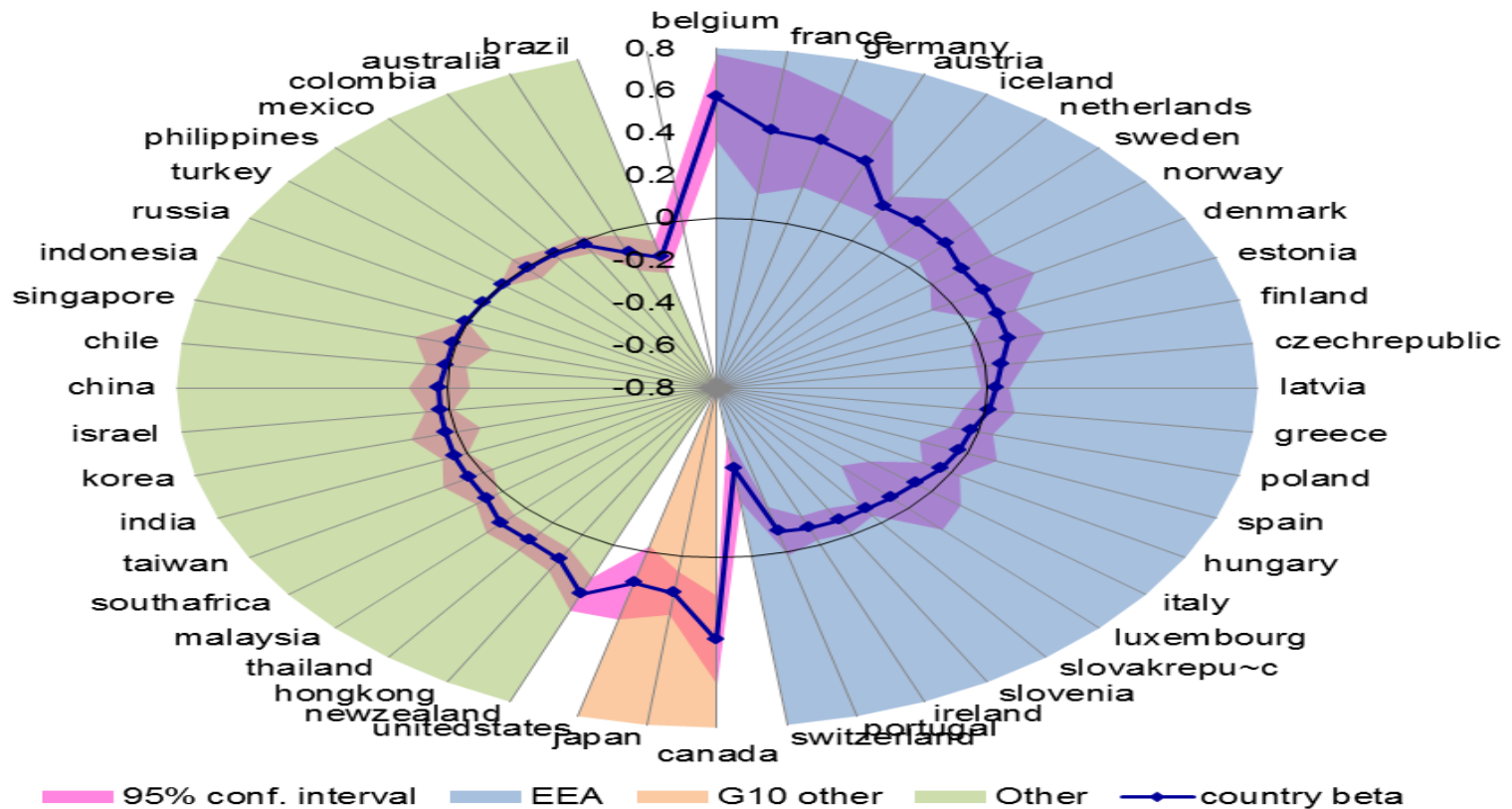
\*\*add partner country prices for each of 47 partner-countries





# Country Betas

## Using UK and Foreign CPI Inflation

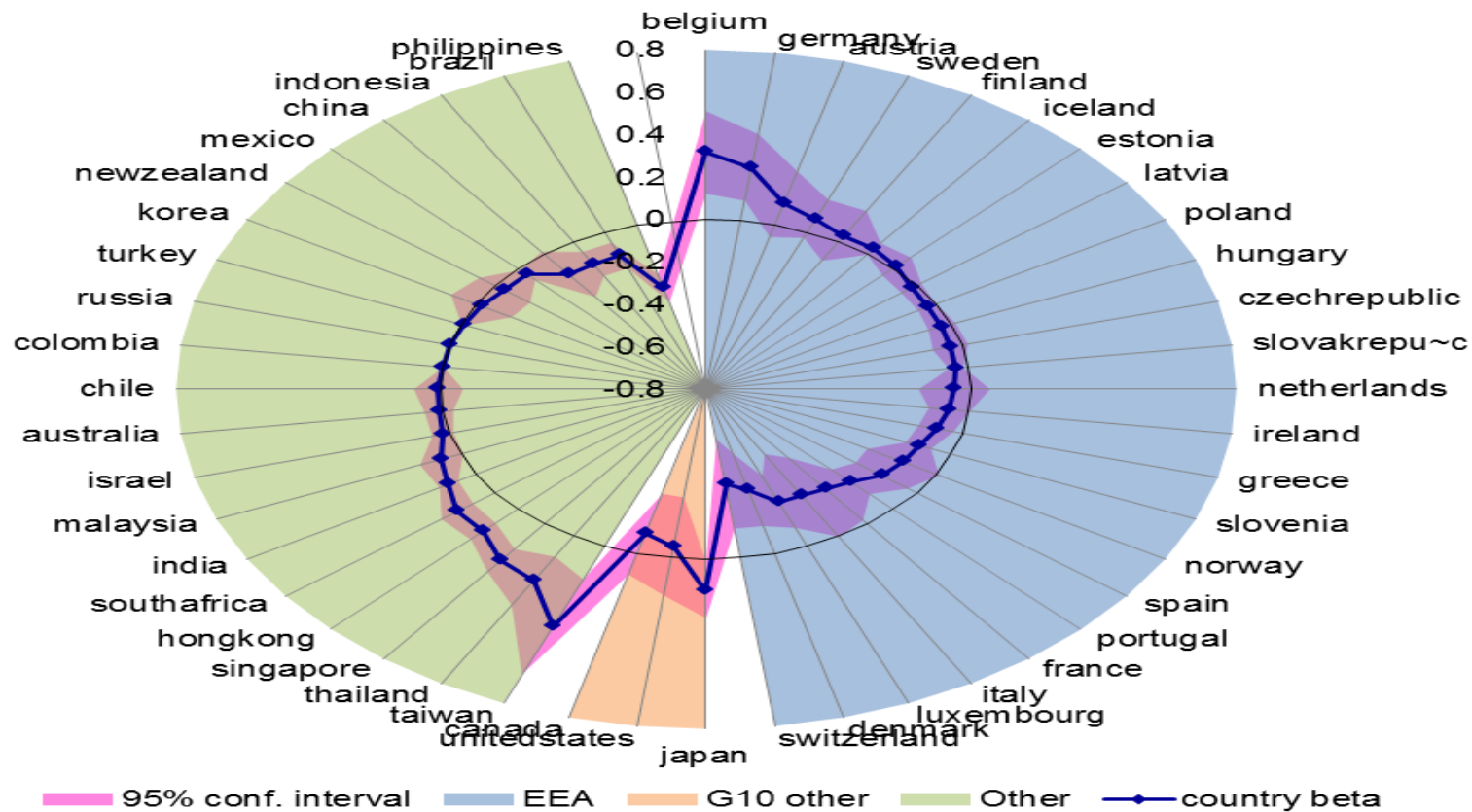


**Source:** Speech by Kristin Forbes, "When, Why and What's Next for Low Inflation: No Magic Slippers Needed." June 17, 2015. London School of Economics.



# Country Betas

## Using UK and Foreign Core Inflation



**Source:** Speech by Kristin Forbes, "When, Why and What's Next for Low Inflation: No Magic Slippers Needed. June 17, 2015. London School of Economics.



# Explaining the Betas

## *Linking UK to Country CPI Inflation*

	HEADLINE INFLATION							
	1	2	3	4	5	6	7	8
Share in UK imports	0.03***						0.03***	
World PPP share		0.01					-0.01***	0.01
Log of distance between countries' capitals			-0.03				0.02	-0.03
Former colony				0.04			0.03	0.08**
Common official language					0.02		-0.01	-0.03
% of households with access to the internet in country j						0.01**	0.00	
Constant	0.02	0.06**	0.24	0.06*	0.07**	-0.05	-0.25	0.31
<b>Number of countries</b>	<b>47</b>							

*Source: Speech by Kristin Forbes, "When, Why and What's Next for Low Inflation: No Magic Slippers Needed. June 17, 2015. London School of Economics.*



# Drivers of Inflation in the Onion

## Summary

