Price Formation and Price Transmission across the EU

OECD
FCAN Meeting
October 2013

Professor Steve McCorriston
University of Exeter
Coordinator TRANSFOP
“Transparency of Food Prices”

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Competition Issues in the Food Sector

- See Competition Roundtable

- Complex
- Challenging
- ‘Hot’

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The Age,
31st October
2013



Elizabeth Knight

Supermarket saga hots up

When it comes to dealing with potential misuse of market power by the big supermarkets, which is the best way forward – to prosecute, to negotiate or to legislate?

The government made it pretty clear on Wednesday it was prepared to take action to level the playing field between the large supermarkets – Coles and Woolworths – and their suppliers.

It's a sufficiently large stick that it might engender new resolve in the retailers towards finding agreement with suppliers on a code of conduct (which would be administered by the Australian Competition and Consumer Commission). The ACCC has prosecution in its sights. It's a race to see who gets there first.

The government announced a review of competition (which includes more than just the

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- European Consortium of 13 partner institutions
- Funded by EU Commission…will continue beyond funding life
- Dedicated website (www.transfop.eu) with Working Papers, Blogs, Newsletters etc
- Strong engagement with stakeholders and policymakers

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TRANSFOP Objective

- Greater understanding into the “functioning of the food chain” throughout the EU

- Focus on pricing and competition issues, specifically:

  “to develop a greater understanding of pricing issues in food supply chains throughout the EU regarding the mechanisms of price signal transmission and the determinants of food pricing”.

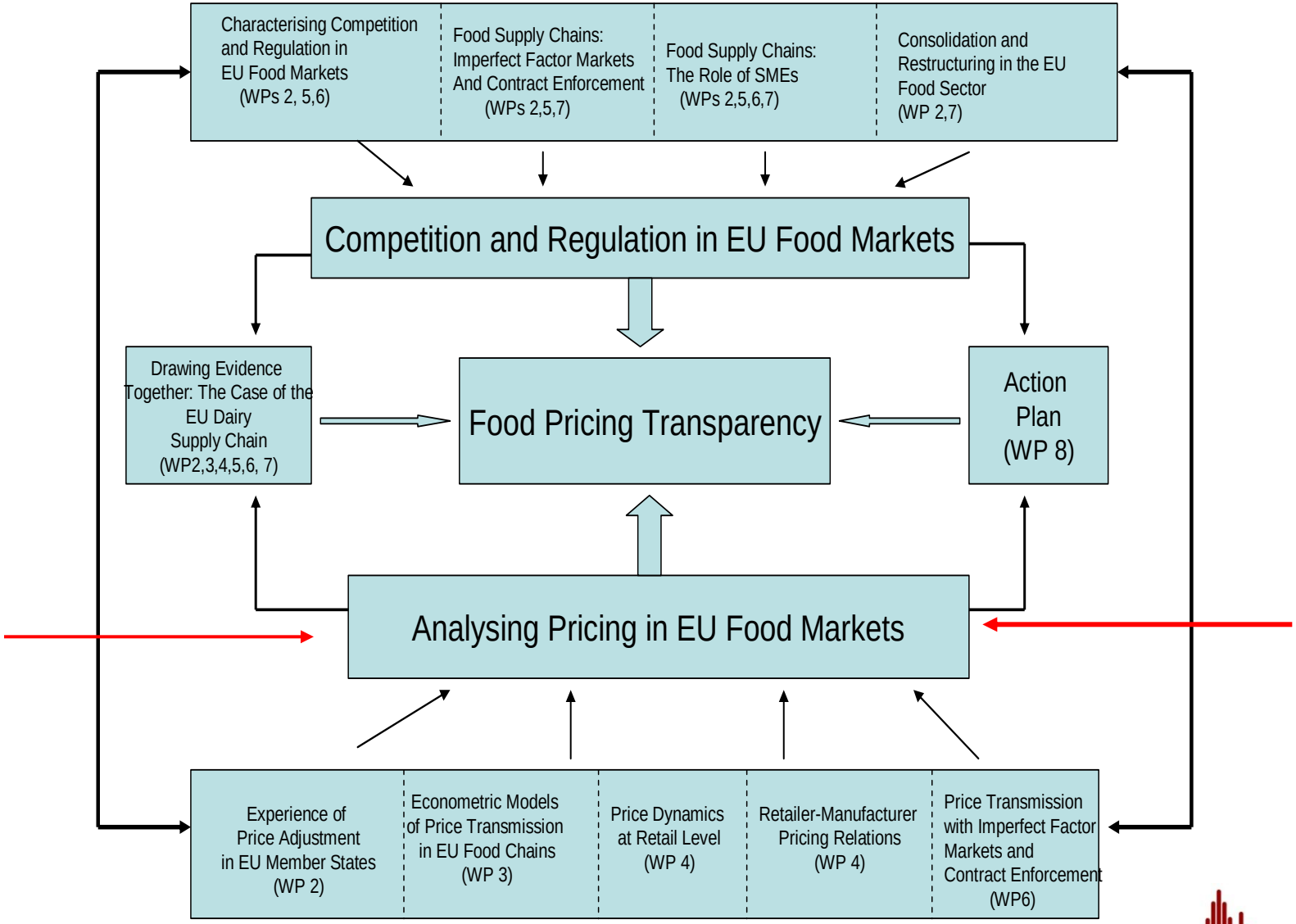
- We know a bit more than when we started!

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TRANSFOP Coverage

- Both theoretical and empirical approaches to food price behaviour across the EU
- Aspects of competition, industry change and regulation as determinants of price behaviour across the EU
- Empirical approaches using different types of price data

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Different Data Types, Different Approaches

Data from Public Sources

- Monthly, Aggregate Data
- Price Transmission Studies across Countries and Commodity Groups
- What Factors Drive Food Inflation?

Scanner Data

- Weekly, High Frequency Detailed Data
- Commodity and Outlet-Specific Inflation Indices
- Reference Prices and Sales

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Sample Insights

- Price Transmission across the EU
- Bread Inflation across the EU
- Heterogeneity in Price Adjustment in Retail Chains [UK evidence]

Price Transmission Analysis

- Conducted a wide-range analysis to characterize price transmission processes along different food marketing chains within the EU and explain the differences and/or similarities that exist between them.

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Monthly producer and consumer prices observed from January 2000 to December 2011 are used. Data obtained from different national statistical sources.

Commodity/ country	Austria	Belgium	France	Germany	Hungary	Italy	Slovakia	Slovenia	Spain	UK
Beef	X	X	X	X		X	X		X	X
Eggs		X			X					X
Milk-Butter		X		X	X	X				
Milk-Cheese		X		X	X	X		X		
Milk-Milk	X	X	X	X	X	X	X	X	X	X
Pork		X	X	X	X	X	X			X
Poultry	X	X	X	X	X	X		X	X	X
Wheat-Bread		X		X	X		X	X		
Wheat-Flour	X	X			X			X	X	

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Main results about price transmission (using this data)

- Estimates indicate that 66% of the price transmission results are symmetric.

- Most of the price adjustment taking place at the producer end, not retail

- Extensions:

  -the raw commodity is not the only factor that determines the retail price

  -what do we mean by the retail price and how sticky is it?

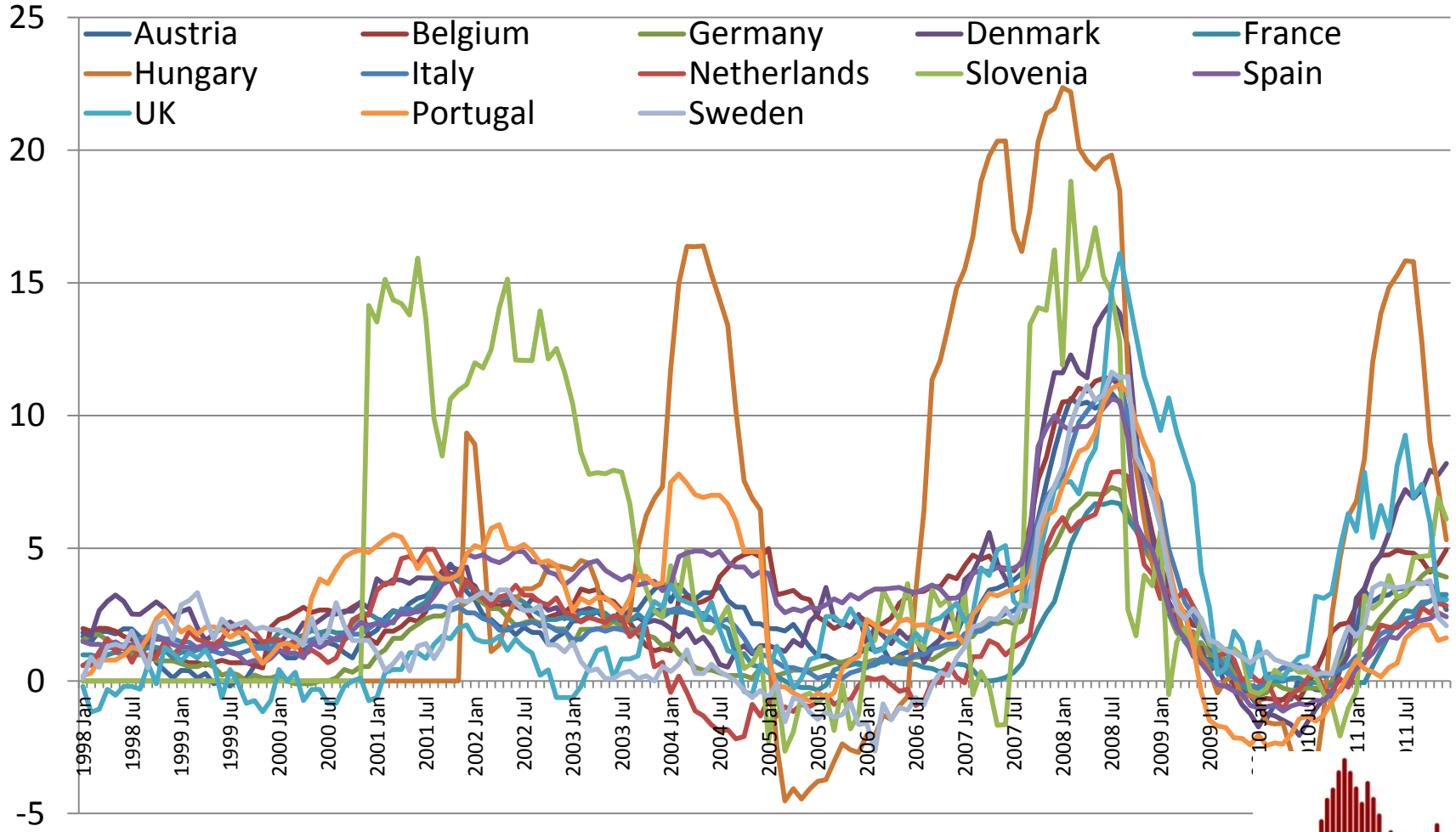
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Bread Inflation Across the EU

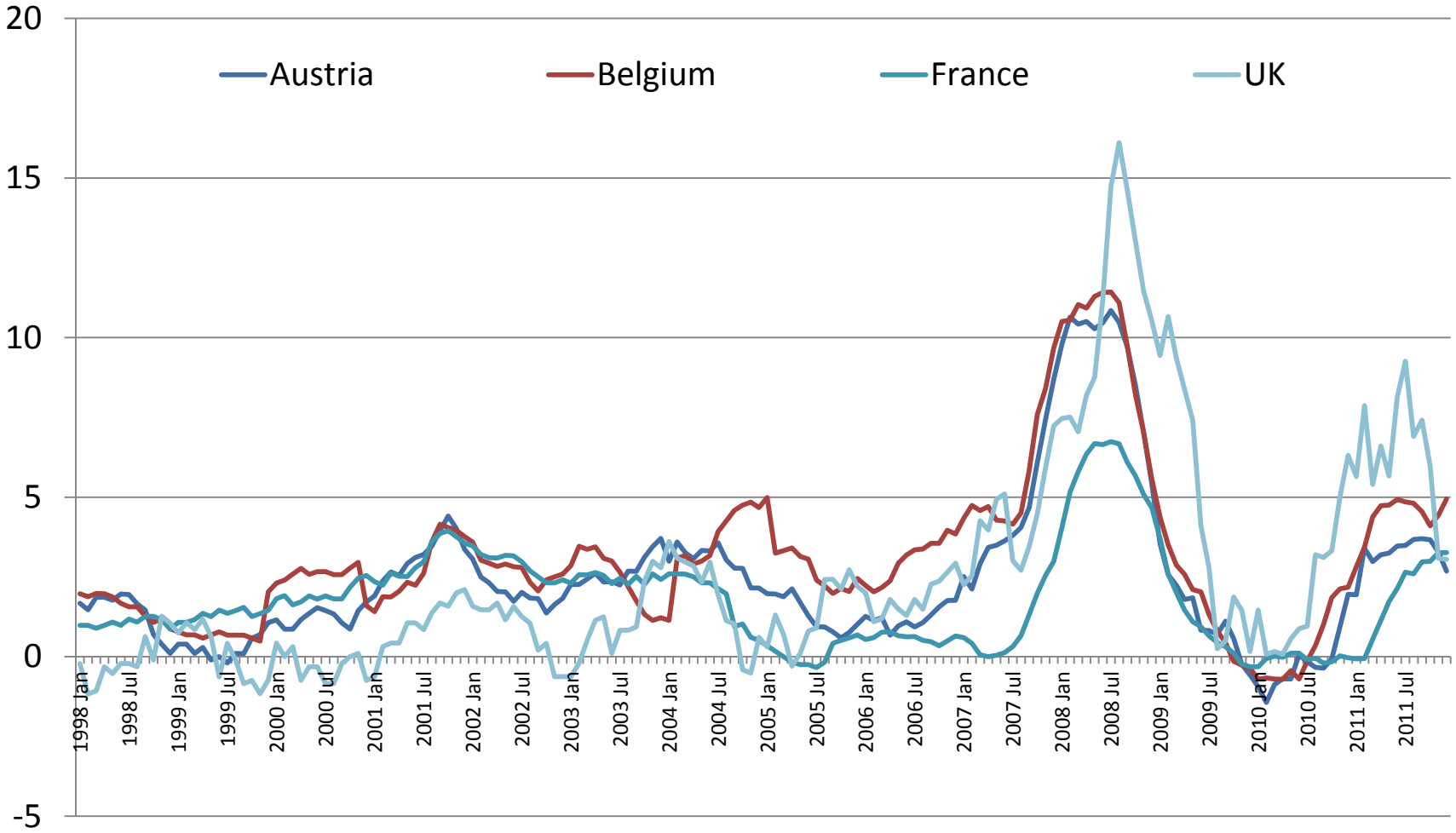
- We focus here on the drivers of food inflation and how they may differ across EU Member States
- Main premise is that world commodity prices are not the only driver of food inflation (this draws on earlier analysis for the UK)
- Exchange rates, oil prices, macroeconomic conditions may also be important---but by how much so
- Also, exchange rate regimes may vary and some countries may be more “exposed” to world markets than others

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Bread Inflation (%) 1998(1) 2011(12)



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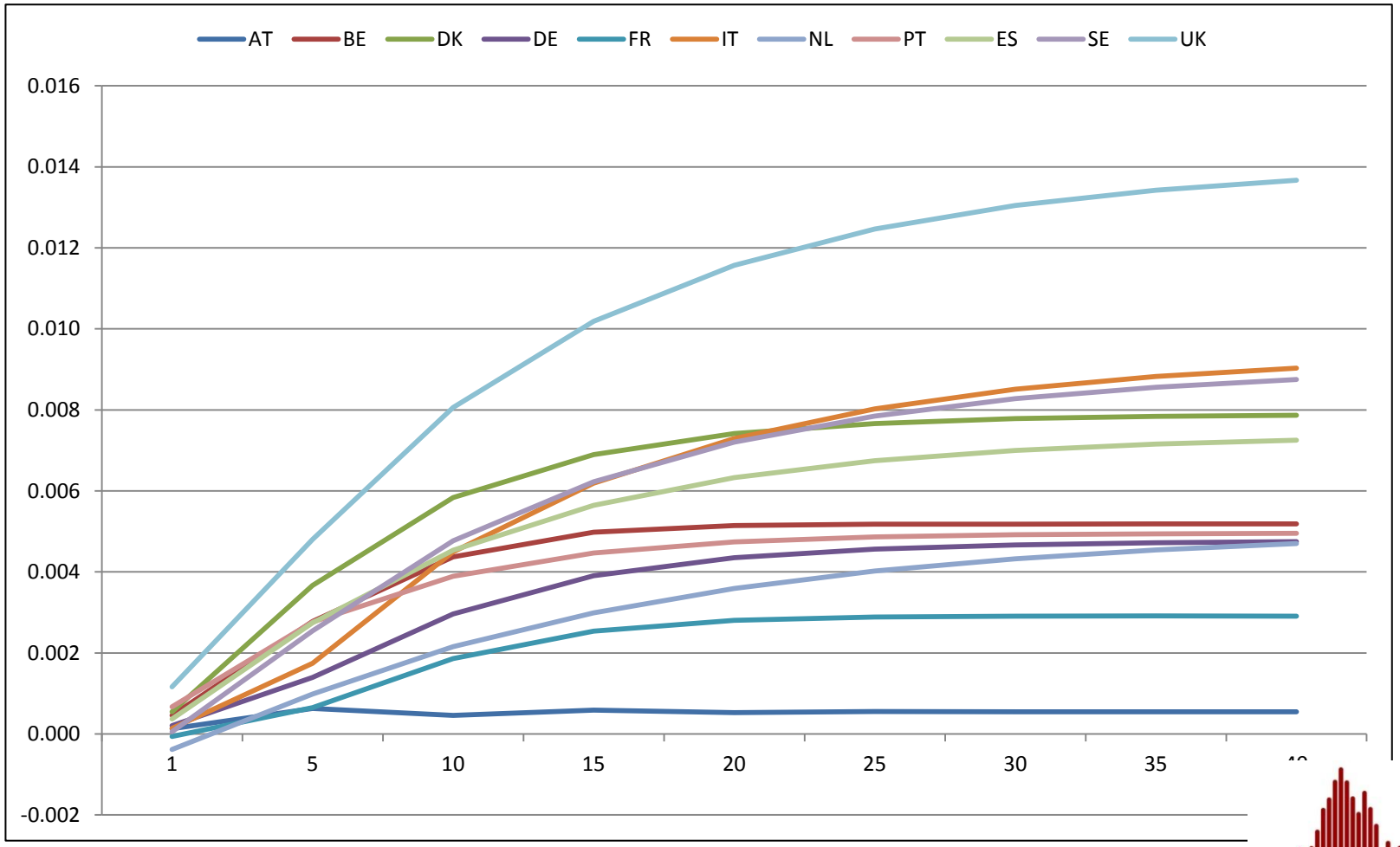


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- 11 Countries: Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, UK
- Sample: 1997-2011
- Common modelling framework: world wheat prices, retail bread prices, oil prices, exchange rates, unemployment

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Response of Bread Prices to World Wheat Shock



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Sources of Shocks to Retail Bread Prices

	AT	BE	DK	DE	FR	IT	NL	PT	ES	SE	UK	Avge
Retail	73.0	60.9	51.8	53.1	66.9	54.2	53.7	64.8	73.7	72.3	38.2	**60.2**
Wheat Market	20.7	31.2	34.5	23.9	13.7	32.9	19.6	22.3	13.2	22.4	56.6	**26.4**
Oil Prices	3.6	5.0	12.2	18.9	16.0	6.6	21.0	9.7	2.4		4.5	**9.1**
Exchange Rate	2.8	2.9	1.1		1.1	0.3	0.4		10.7		0.2	**1.8**
Unemployment			0.4	4.1	2.3	6.0	5.3	3.1		5.4	0.6	**2.5**

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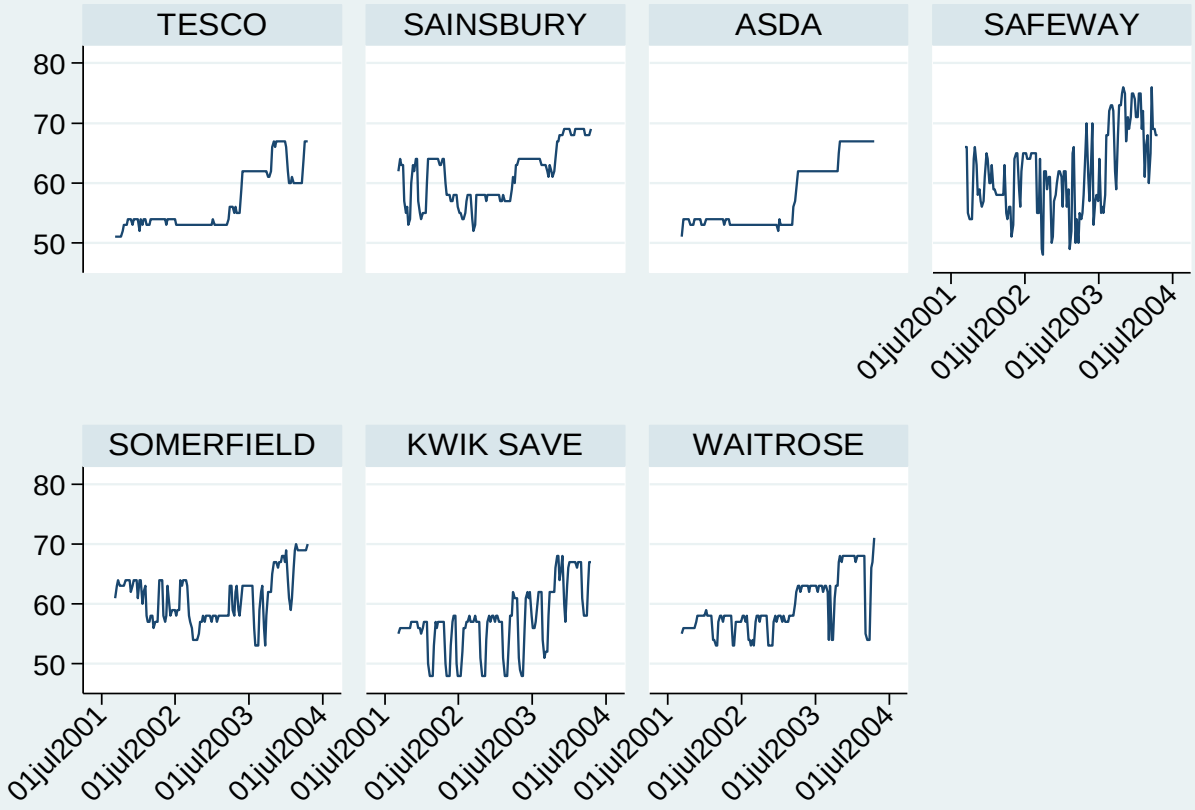
The Use of Scanner Data

- High frequency (weekly) data which can identify what consumers actually buy, how prices for different types of products have different dynamics, how the price for the same product may vary across retail chains and type of outlet

- But scanner data (we have access to) vary in the range of information they provide

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Kingsmill Everyday White Bread



Graphs by Retail Chain

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Scanner Price Dynamics in the UK Food Retailing Sector

- Should we care about sales for inflation?
- What is the underlying price we should care about?
- Macroeconomists think of the underlying reference price
- How are these aspects of food prices reflected in scanner data across retail chains in the UK?

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What is noticeable about the price dynamics for this identical product?

- Sales behaviour
- Heterogeneity across retailers (this comes through in every product we have)
- Underlying reference price behaviour also matters and this also shows heterogeneity
- Why does this heterogeneity matter for food price inflation?

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Implied Duration Statistics for Actual and Reference Price Data (median item, in weeks)

	Actual Prices	*Rolling Reference Prices*	*Eichenbaum et al. Reference Prices*
Overall	2.4	13.9	26.0
Retail Chain			
ASDA	3.6	20.8	32.5
Tesco	2.9	20.8	32.5
Sainsbury	2.5	15.6	32.5
Kwik Save	2.2	13.9	26.0
Waitrose	2.0	15.6	32.5
Somerfield	1.9	11.4	26.0
Safeway	1.9	8.9	18.6
Brand Status			
Private Label	3.0	17.9	32.5
Brand	2.3	13.8	26.0

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Contribution (R^2) of rolling reference price and sales to price variation across retailers and label





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Emerging Insights from TRANSFOP Research

- Addressing the "functioning of the food supply chain" [in the EU…and elsewhere] is complex
- There is no 'common' experience and the 'common' mechanisms work to different degrees
- Perhaps this is not surprising!
- Different types of data give different insights
- Scanner data providing deeper insights into price formation and price adjustment according to retail chain, outlets, branded and private label products, the 'type' of price adjustment, micro-foundations of price transmission

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Thank you