

The European Wood Pellet Market for Small-Scale Heating

IEA Task40 Webinar

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Content

- **IEA Bioenergy Task40 – Context P.1-3**
- **Heating-market study – Introduction P.4-5**
- **Background P.6**
- **Modern trade theory P.7**
- **Available data P.8**
- **Methodology & illustrative results P.9-13**
- **Results summary P.14**
- **Conclusions & recommendations P.15**
- **Research topics P.16**
- **Open discussion with YOU**

Sustainable Biomass Markets and International Trade to support the biobased economy

<http://task40.ieabioenergy.com/>

Triennium 2016-2018

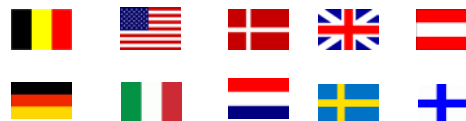
Task leaders:

- Martin Junginger – Copernicus Institute – Utrecht University
- Peter-Paul Schouwenberg – RWE Generation SE



Country representatives (Task 40 Members) from

Netherlands, Austria, Belgium, Denmark, Finland, Germany, Italy, Sweden, United Kingdom & United States



Sustainable Biomass Markets and International Trade to support the biobased economy

<http://task40.ieabioenergy.com/>

Core Objective:

‘to support the development of sustainable, international markets and international trade of biomass, recognizing the diversity in biomass resources and applications for bioenergy and bio-materials in the biobased economy’

Sustainable Biomass Markets and International Trade to support the biobased economy

<http://task40.ieabioenergy.com/>

What we do:

- Market and scientific studies -> *wood pellets, chips, waste streams ...*
- Accompanying sustainability governance -> *inter-task project on sustainability*
- Stimulate (investment in) trade -> *inter-task project: bioenergy success stories*
- Develop, adapt and optimise biomass logistics -> *high-quality fuels & feedstocks and advanced logistics ...*

[Download here](#)



The European wood pellet market for small-scale heating

Scientific Paper Summary: Data availability, price developments and drivers for trade

Schipfer F., Kranzl L., Olsson O., Lamers P., Wild M.

Report: *published 11.2016*

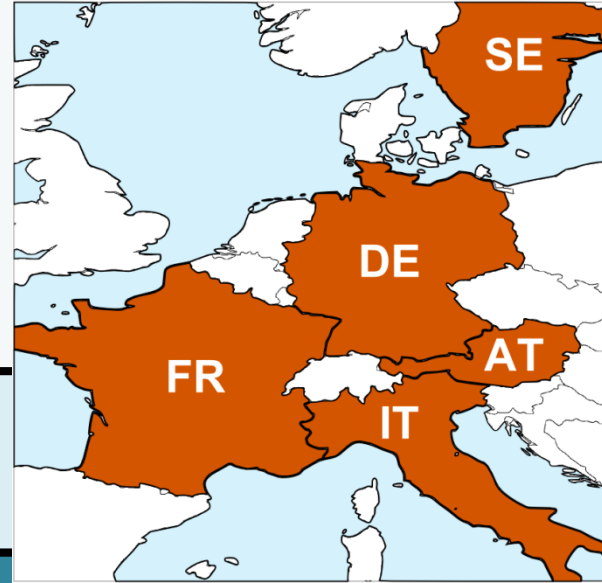
Scientific article: *submitted at „Energy Policy“*

Introduction

International bioenergy trade exhibited strong growth, & wood pellets are top bioenergy carrier.

EU is the main importer using pellets for power and heat, 32% of global demand in 2014 was for heat in these MSs →

Drivers and barriers for trade are often discussed, not the reasons behind the specific bilateral trade patterns.



Source: own illustration based on rworldmap

What determines bilateral trade? 1) Seasonality?
2) Residential wood pellet prices?
3) Exchange rates?

Are wood pellets a commodity and focused country markets efficient?

Sikkema et al. (2011); based on IEE-Project Pellets@tlas

- „relatively mature industrial pellet markets, compared to non-industrial ones .. „

Olsson et al. (2011); co-integration based on pellet prices time series

- Germany & Austria = integrated market

Kristöfel et al. (2014 & 2016); demand and supply of Austrian pellets heating sector

- Historic prices less volatile than prices of other energy and agricultural commodities
- No correlations between Austrian-Italian price delta and import and export volumes

Olsson et al. (2016); commoditisation process - product- and market related properties

- Product related: homogenisation -> fungibility , intermediate good -> different consumer
- Market related: liquidity, competitiveness & international trade

Barrett and Li, (2002); distinction between market integration and competitive spatial equilibrium (CSE) <- excess transferred from one market to another, prices equilibrated

Trade regimes

1. Perfect integration with trade
2. Perfect integration without trade
3. Inefficient integration with positive marginal profits to arbitrage
4. Segmented disequilibrium
5. Inefficient integration with negative marginal profits to arbitrage
6. Segmented equilibrium

Data availability:

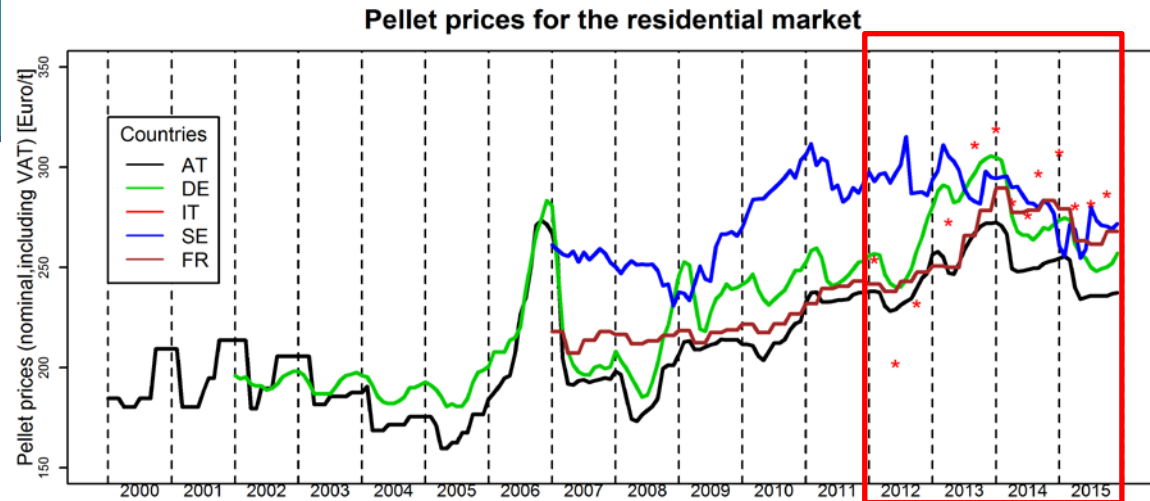
International trade in goods statistics (ITGS) from Eurostat:

- Monthly bilateral trade since Jan.2012 until Dec.2016
- In quantities [kilo tonnes /month] and
- In value [€/month] for
- intra-EU trade (arrivals & dispatches) and
- extra-EU trade (imports & exports)

Seasonality •

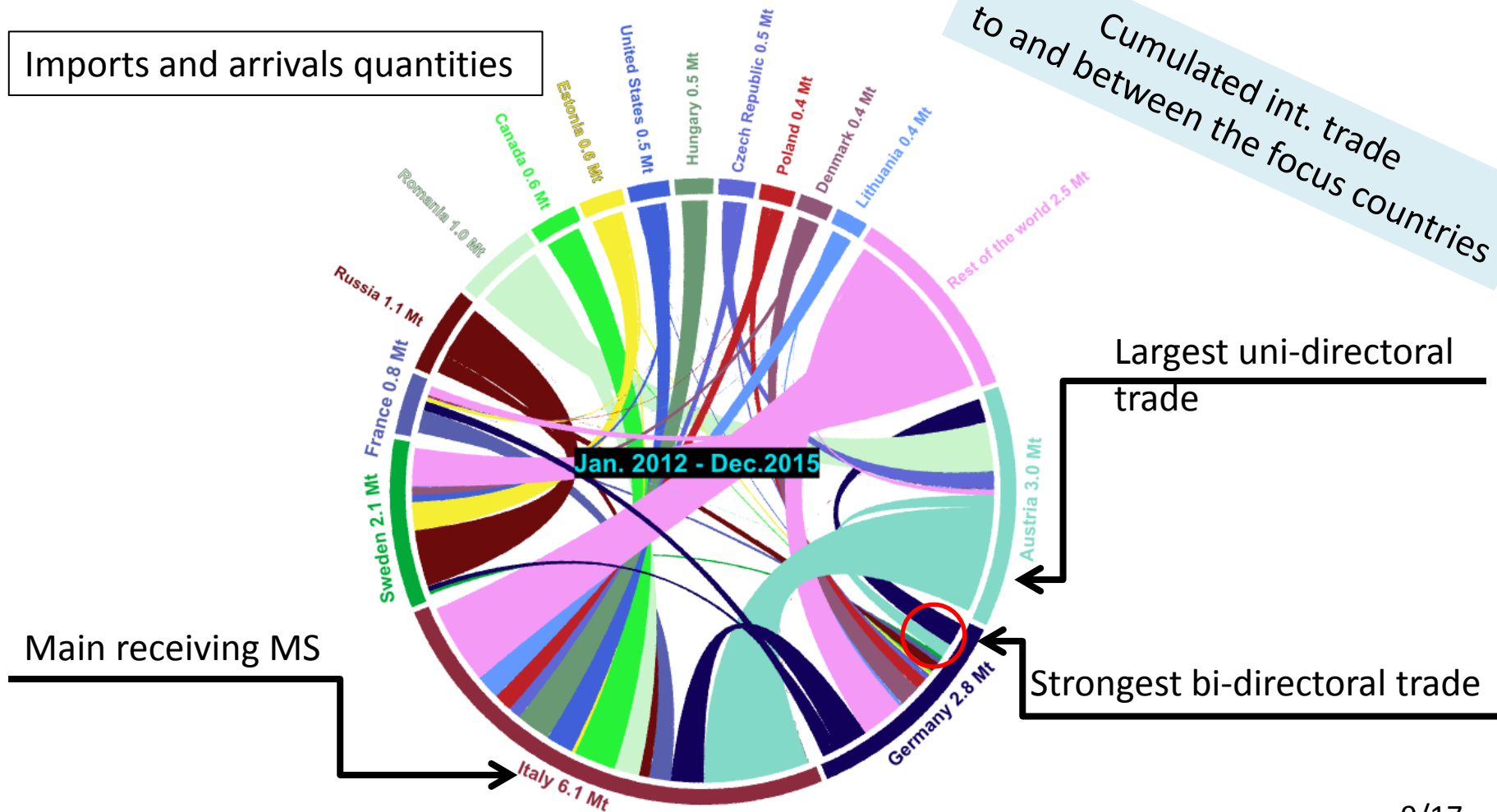
Exchange rates •

Residential wood pellet prices •

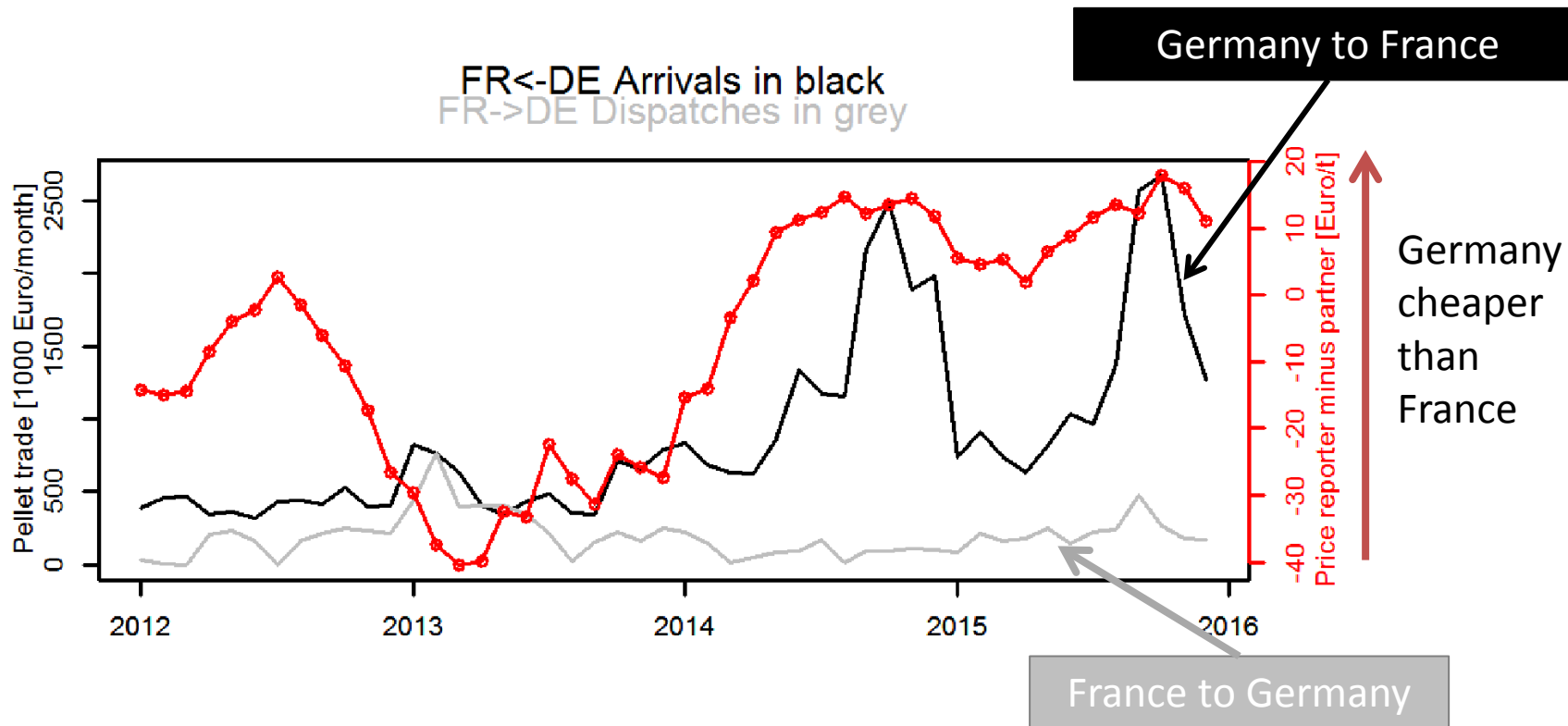


Imports and arrivals quantities

Cumulated int. trade
to and between the focus countries



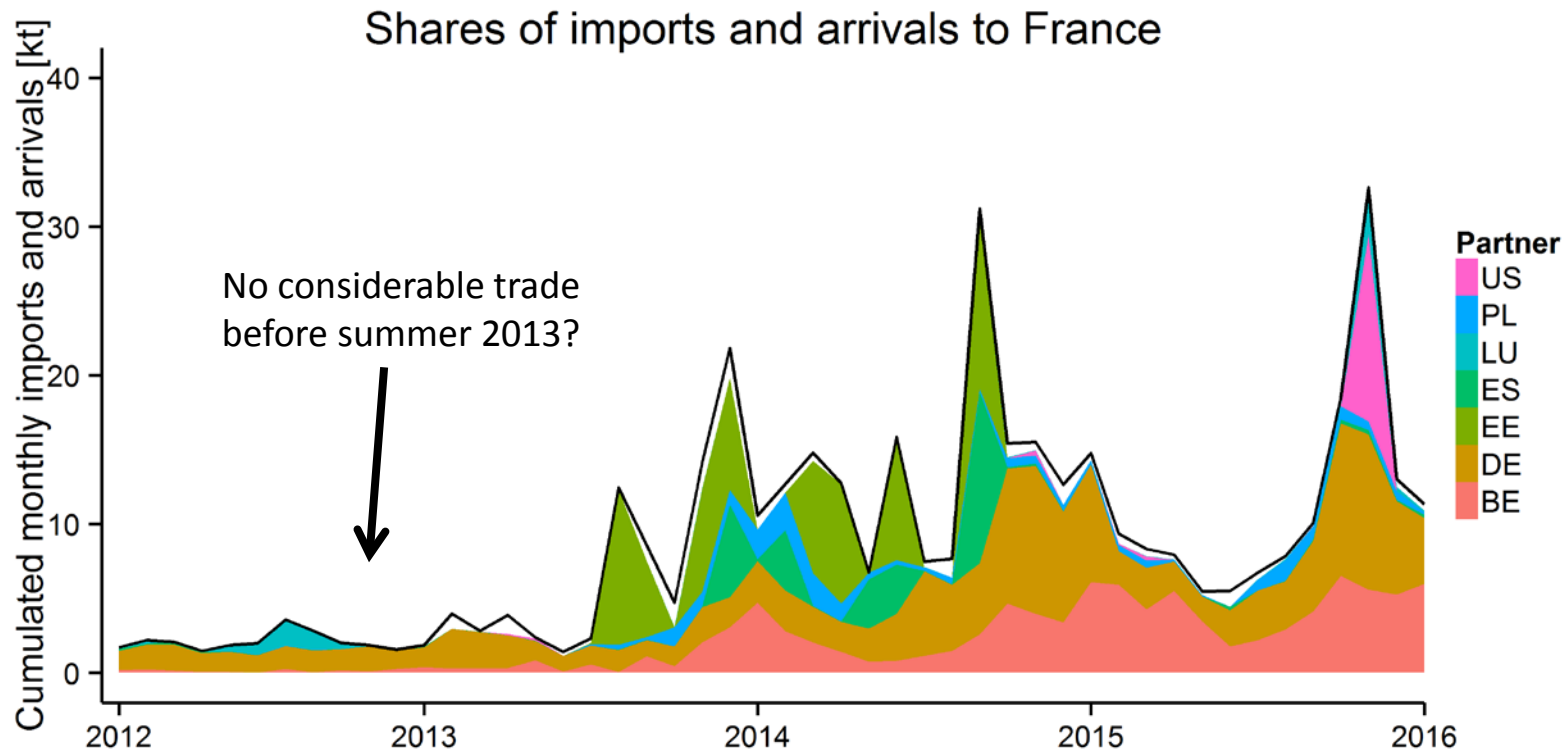
Bilateral trade analysis



Source: own illustrations based on Eurostat (2016), DEPV, Beyond20/20 (2016)

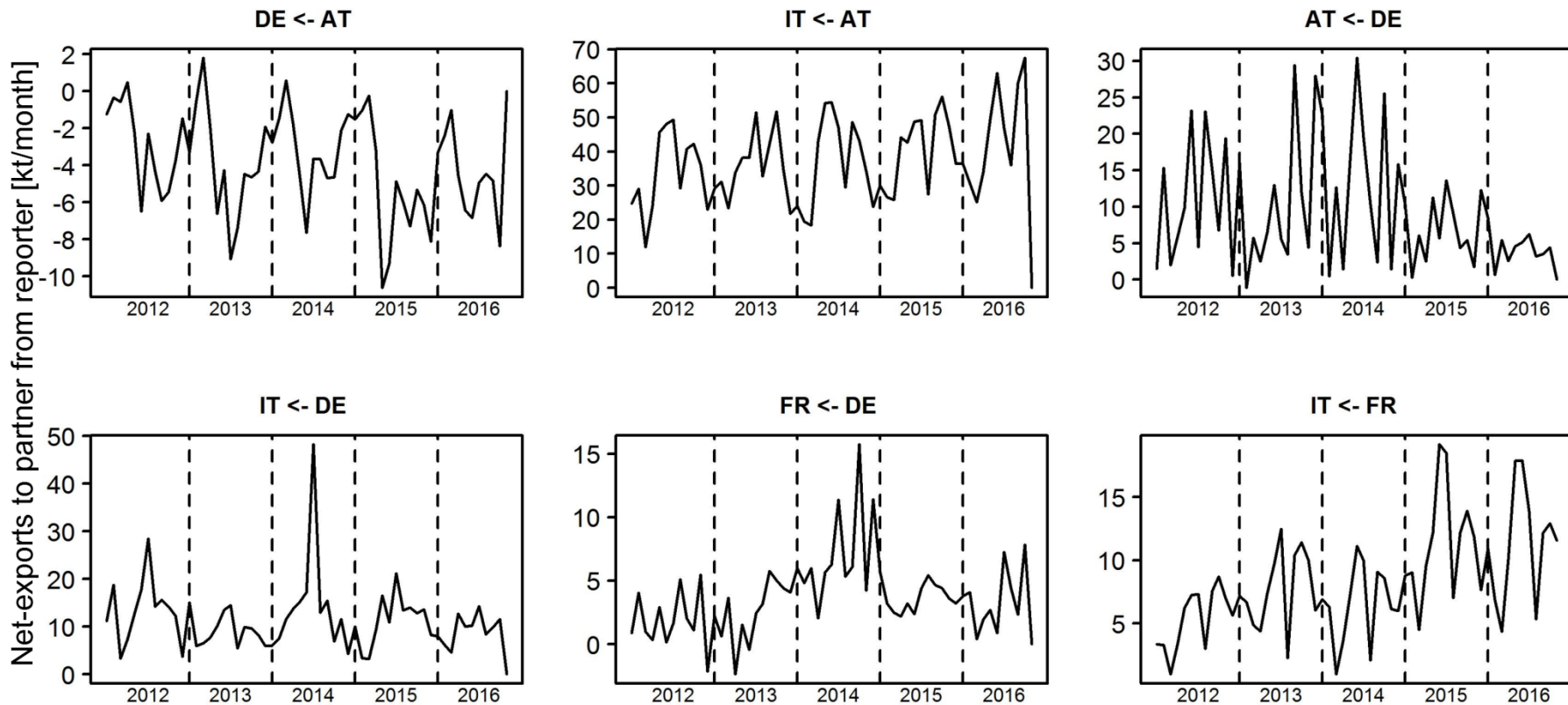
14/03/2017

Energy Economics Group, TU Wien



Source: own illustrations based on Eurostat (2016)

Modeling selected trade relations

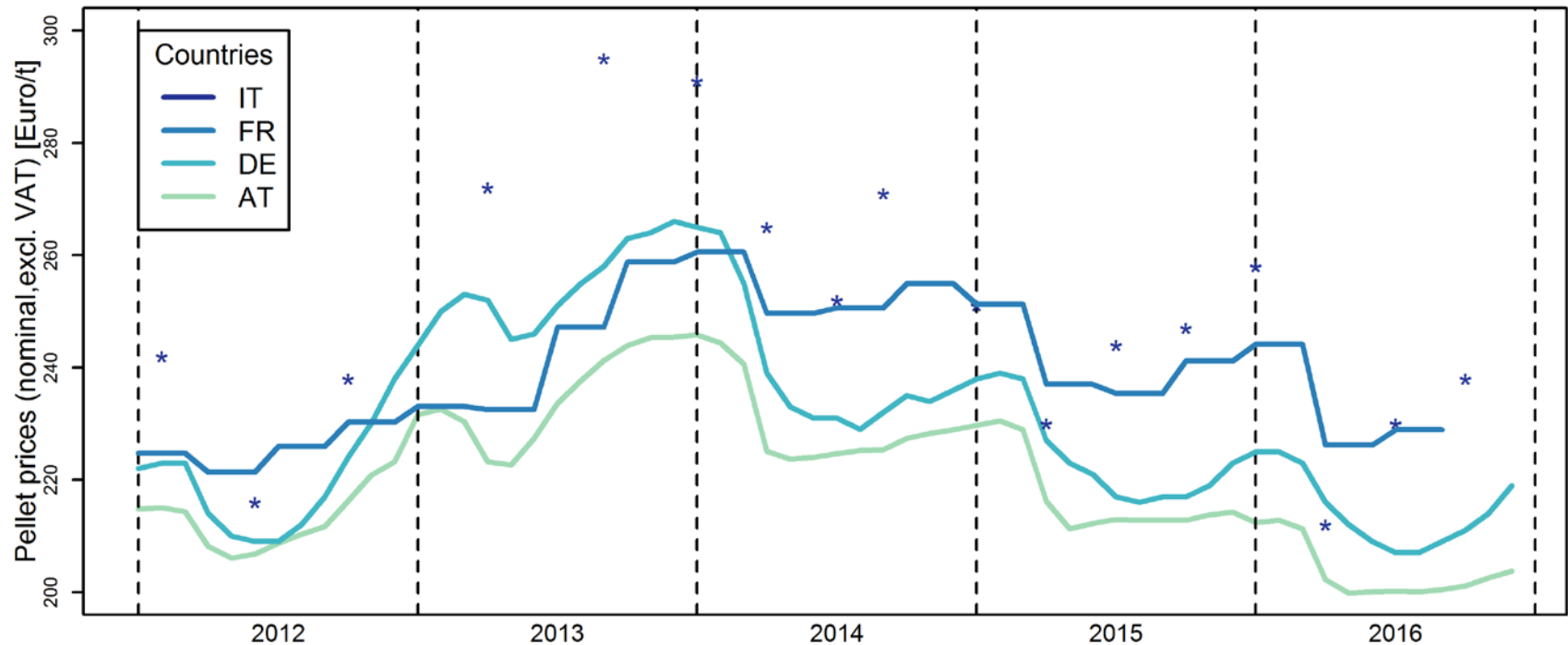


Source: Own illustration based on Eurostat (2017)

Modeling selected trade relations

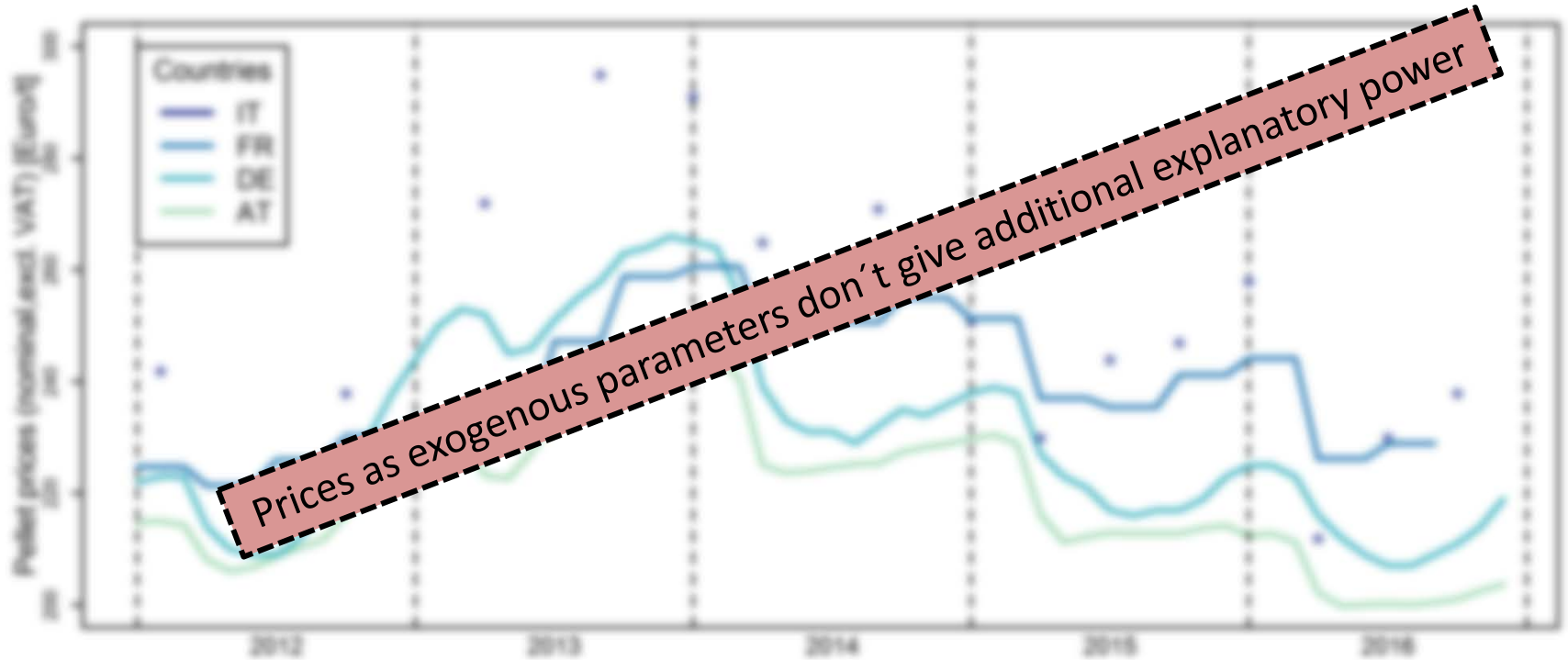
Individual seasonal auto-regressive moving average models

Modeling selected trade relations



Source: Own illustration based on propellets (2016), DEPV, AIEL, Pelletsförbundet (2016), Beyond20/20 (2016)

Modeling selected trade relations



The European wood pellet market for small scale-heating – RESULTS SUMMARY

- Trend of increasing cross-border trade leading to some detectable interactions between price differences and trade flows
- However, market related properties of the commodity do not allow composition of econometric modelling framework
- Clear limitations in data availability and quality

The European wood pellet market for small scale-heating - CONCLUSIONS

- Development towards competitive spatial equilibrium should be supported:
 - Access to adequate information! Harmonised approach for collecting market relevant data – more accurate and detailed output of statistical authorities
 - Continued fostering of development of price benchmarks necessary
 - Fungibility of wood pellets through applying sustainable standards next to technical standards & ensure all end users perceive fungibility
 - Reduce financial and technical risks for storage & foster convergence of small- and large scale market

The European wood pellet market for small scale-heating – Research topics

- Development towards competitive spatial equilibrium should be supported:
 - New tools like data mining, web-scraping ... ?
 - How can financialisation contribute to the commoditisation process?
 - Public perception, acceptance and participation, ... also by using new internet tools?
 - Analysing convergence of small- and larger scale market? How to mitigate danger of smaller producers to be pushed out?

Thank you for listening – what do YOU think ?

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