



EUROPEAN CENTRAL BANK

EUROSYSTEM

Discussion of “A bridge over troubled water: flooding shocks and supply chains”

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Views expressed here are those of the speaker and not necessarily those of the ECB nor its Governing Council

When the rain falls so hard

1. Firm-level impact of 2021 floods in Wallonia

Widespread damage affecting 10 communes severely

“1 in 100 year event”

€10bn damages in Belgium (and some €40bn in Germany)

2. Rich firm-level data

VAT declarations; social security; business to business & trade data

3. Early findings: substantial impact

Reduction in sales of flood-affected firms by c. 15%

Very little natural about “natural” disasters

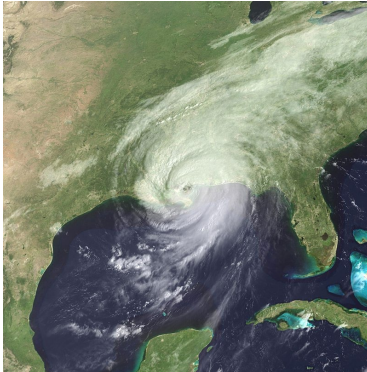
Natural hazard



Resilience / adaptation



Man-made disaster



Exposure

Failing right behind – supply chain impacts

1. Upstream supply-chain linkages the most important

Shows the importance of long-run supplier-customer relationships
Durable impacts lasting well beyond the initial shock

2. Do sectors matter?

Is there impact between intermediates / final goods / services?

3. [Henriet, Hallegatte, Tabourier \(2012\)](#)

Model regional economy using network of firms : **concentration** versus **clustering**

Down and out – financial stability implications

1. Which firms exit?

What gives resilience to climate shocks? Is this creative destruction or random?

2. [Leiter, Overhofer, Raschky \(2009\)](#) argue for creative destruction

Higher assets and employment than unaffected firms, particularly those firms with greater share of intangible assets. But productivity lower.

3. What about profitability vs sales?

Do inventories or cash holdings provide robustness? Access to finance?

When friends can be found – fiscal policy

1. Substantial assistance from Wallonia regional government

Literature generally finds fiscal support mitigates impact

Anything to say on particular types of assistance? Did prioritisation seem appropriate?

2. Adaptation spending by governments

Ficarra & Mari (2024, BoE WP forthcoming) find adaptation spending reduces probability of flood, but not impact conditional on flood occurring

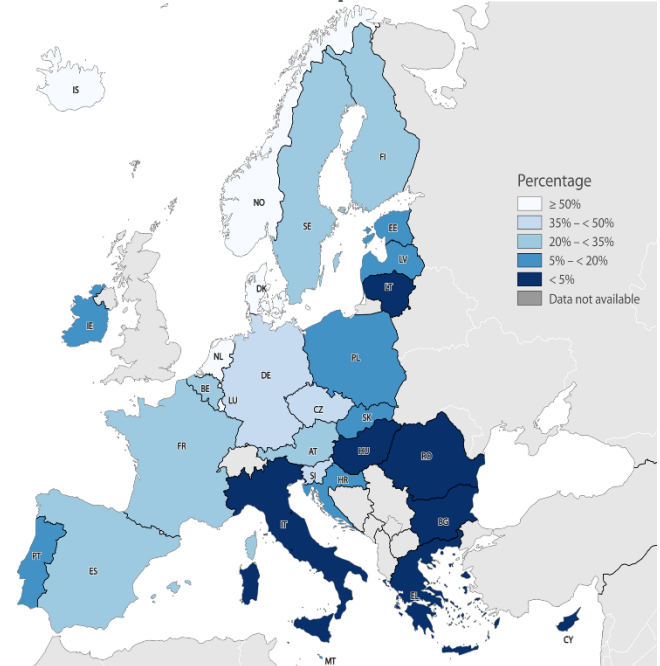
3. Timing matters – [Poontirakul et al \(2017\)](#)

Prompt payments important, late payment little better than no payment

When friends can't be found: insurance protection gap

- Only 1/4 of climate-related catastrophe losses are insured in Europe.
- Massive **moral hazard** – rely on fiscal policy
- This insurance protection gap could widen as a result of climate change. More frequent and intense events may lead to higher insurance premiums. [What to do?](#)
- **Managed retreat?**
- Other friends: **Anacredit** data on bank lending

Average share of insured economic losses caused by weather-related events in Europe

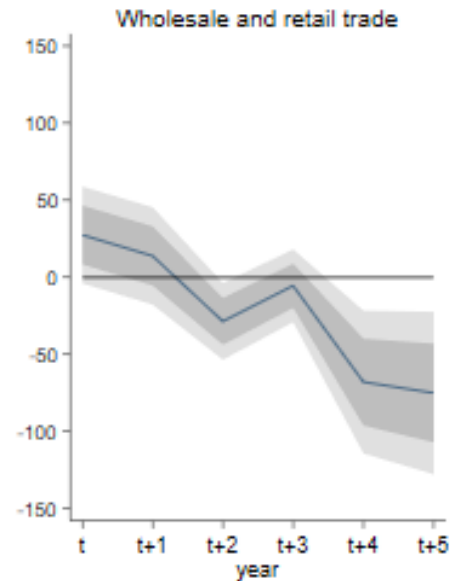


Source: [EIOPA dashboard on insurance protection gap for natural catastrophes](#), European Environment Agency CATDAT

When times get rough – what should MonPol do?

- What is the impact of floods on CPI inflation?
- Only [one paper](#)! Finds food prices increase in near term, but short lived. Core CPI down 0.3pp after one year.
- Disasters are not just negative supply shocks – they are also **negative demand shocks**
- We should expect **greater inflation volatility**, **greater relative price divergence**, **greater regional divergence** in inflation outcomes

Impact of floods on regional output prices
(basis points)



Source: Ficarra & Mari (2024, forthcoming)