Irving Fisher Committee on
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

IFC - Central Bank of Armenia Workshop on *"External Sector Statistics"*

Dilijan, Armenia, 11-12 June 2018

A method for estimating 'pass-through activities' in official FDI statistics[1]

Topias Leino,

Bank of Finland

[1] This presentation was prepared for the meeting. The views expressed are those of the authors and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Topias Leino

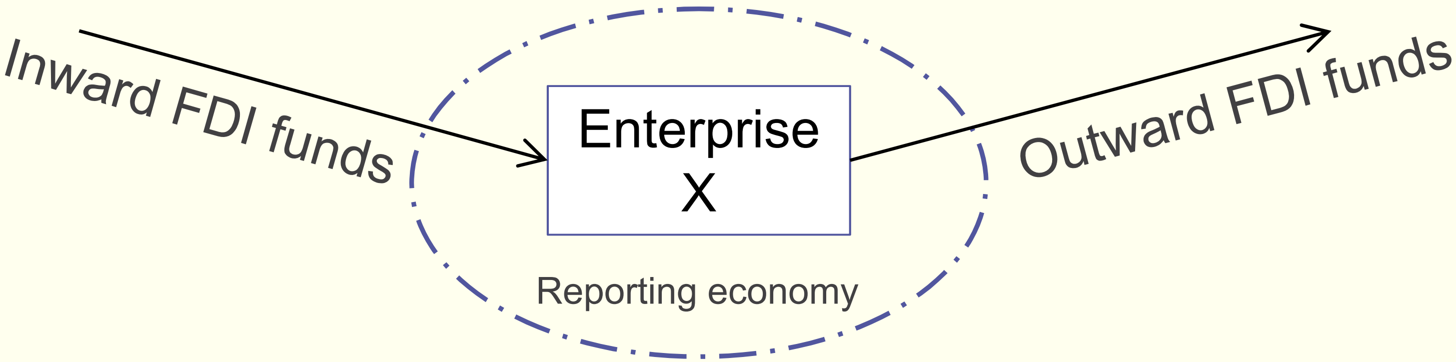
Bank of Finland

A method for estimating ‘pass-through activities’ in official FDI statistics

IFC-CBA Workshop on ‘External Sector Statistics’, Dilijan (Armenia) 11-12 June 2018

What do we mean by ’pass-through activities’?

Activities where foreign finance in form of foreign direct investment (recorded as *FDI liabilities* or *inward FDI*) **are passed through as direct investment abroad** (recorded as *FDI assets* or *outward FDI*)



NB: This is not the only meaningful definition in external sector statistics.

NB2: Other terms like ’capital-in-transit’ and ’pass-through funding’ are also used to broadly refer to the phenomenon.

Why identifying such activities is important?

- FDI statistics are widely used to analyze cross-border investment phenomena in ’real economic sense’
  - *How attractive is the economy to foreign investment?*
  - *How significant are foreign companies in the domestic economy?*
  - *How much have domestic companies expanded their operations abroad?*
  - *…*

- → Inclusion of pass-through activities in data hampers such analyses
  - Per-unit impacts of inward FDI are arguably smaller with ’pass-through’ than without
  - Outward FDI does not reflect investments originating from the reporting economy
  - Comparability issues between countries

- ’Pass-through’ can be an interesting phenomenon in itself and needs to be communicated to the users

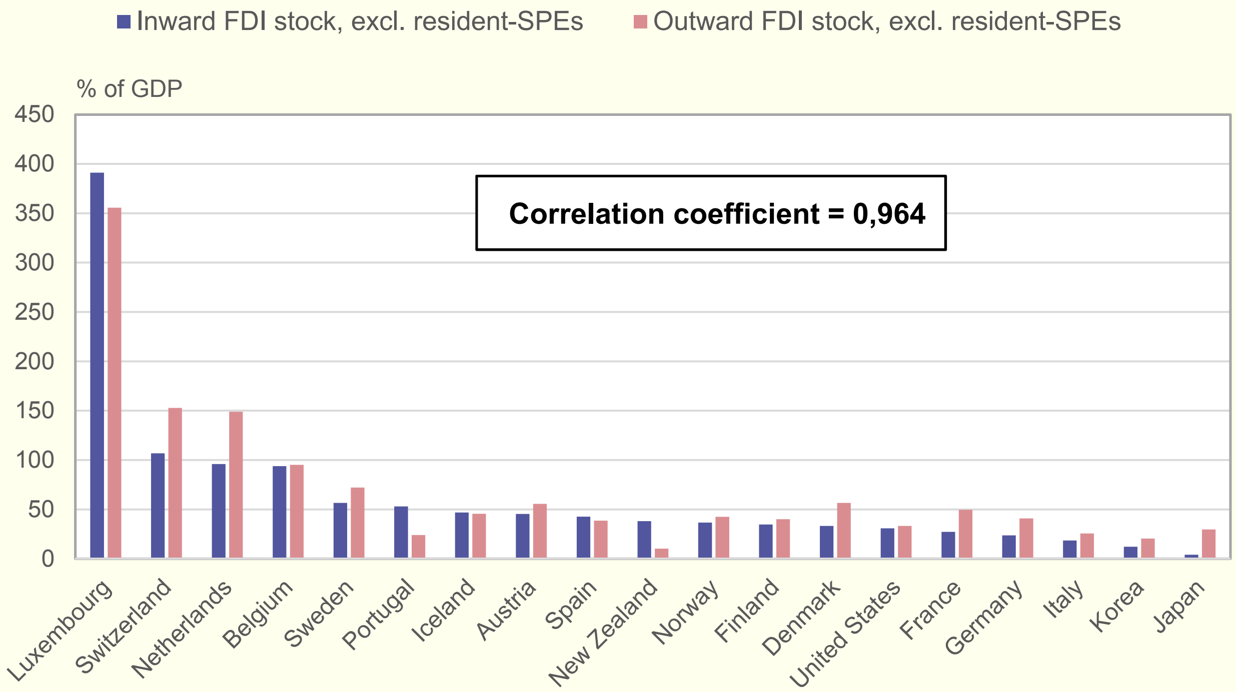
Globally, inward and outward FDI are highly correlated

…particularly among countries with high GDP per capita

To what extent do the inward and outward FDI figures reflect FDI merely passing through the economies?

Are FDI figures comparable between countries?

Inward and outward FDI positions in selected countries relative to GDP at end-2015, excluding resident SPEs*



*) Special Purpose Entities; only for countries that have reported the data to OECD

Data source: OECD.

Current statistical standards* provide two methods for segregating pass-through in FDI

NB: These methods also have other analytical uses and may not have been designed primarily for segregating 'pass-through'.

1) Calculation of FDI according to the 'directional principle'

- **Essential idea:** *Net out investments that flow in reverse direction vis-à-vis the determined direction of influence/control*

Problems:

- Does not allow for "parent-to-subsidiary pass-through" → **underestimation**
- Does not allow for pass-through 'in chains' → **underestimation**
- Does not allow for non-FDI finance → **overestimation**

2) Segregation of Special Purpose Entities (SPEs)

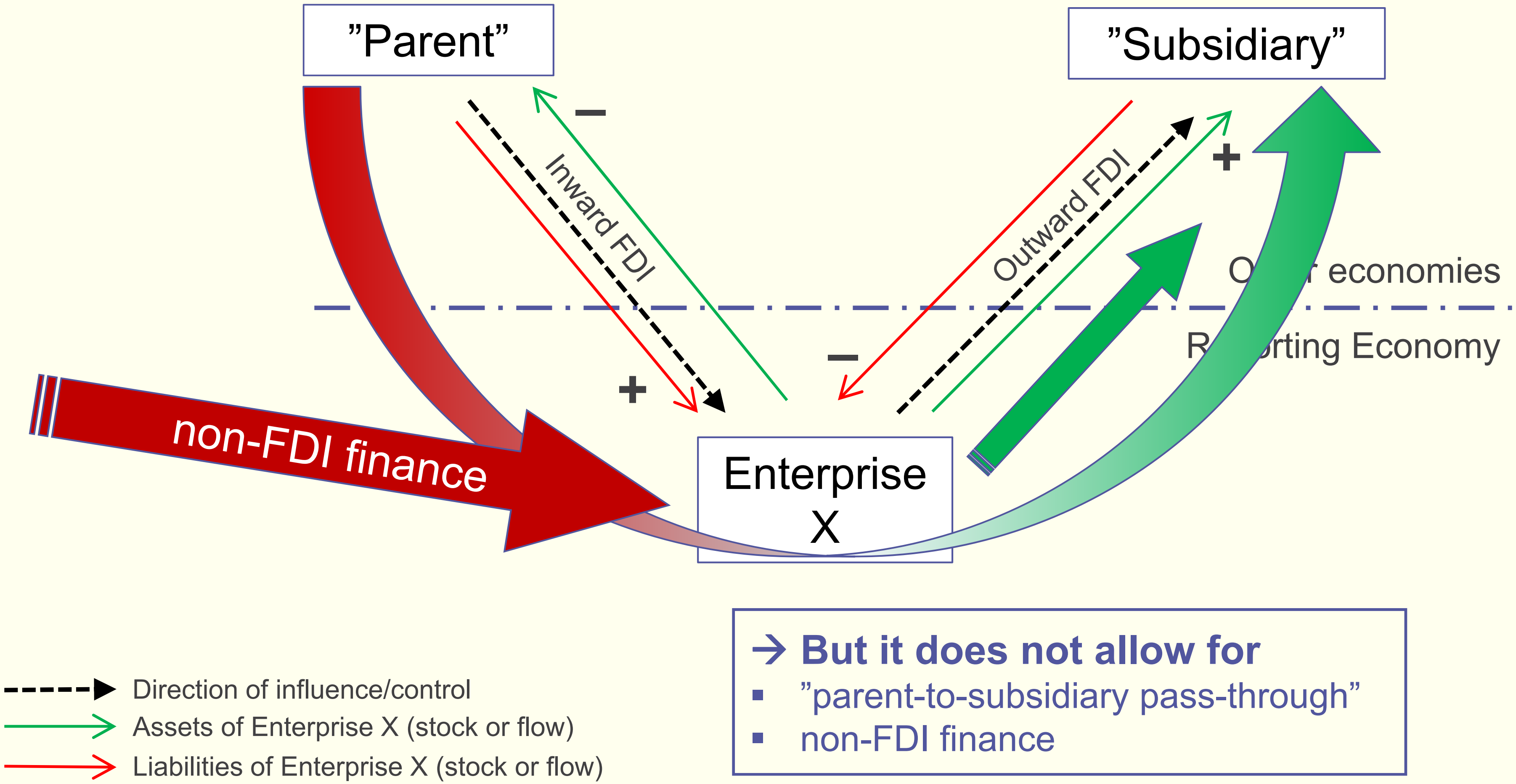
- **Essential idea:** *Label all FDI to/from SPEs as 'pass-through'*

Problems:

- Does not allow for pass-through activities in non-SPEs → **underestimation**
- Numerous specification problems → **underestimation** or **overestimation**

*) OECD Benchmark Definition of Foreign Direct Investment, 4th ed. (BD4) and IMF Balance of Payments Manual, 6th ed. (BPM6)

Directional principle: what it does?



→ But it does not allow for

- ”parent-to-subsidiary pass-through”
- non-FDI finance

Blanchard & Acalin (2016):

- *”FDI inflows and outflows are highly correlated, even at high frequency and using different methodologies”*
- *”**A lot of measured FDI reflects flows through rather than to the country and**…”*
- *”…**the suggested corrections** – from separate treatment of SPEs, to measures of capital in transit, to the use of directional flows measures – **reduce but do not eliminate the problem**”*

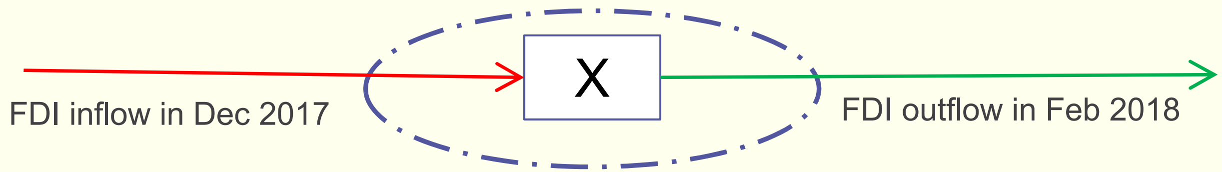
Blanchard, Olivier & Acalin, Julien (2016). ***What Does Measured FDI Actually Measure?*** Peterson Institute for International Economics Policy Brief 16-17, October 2016.

Conceptual issues in determining ’pass-through’

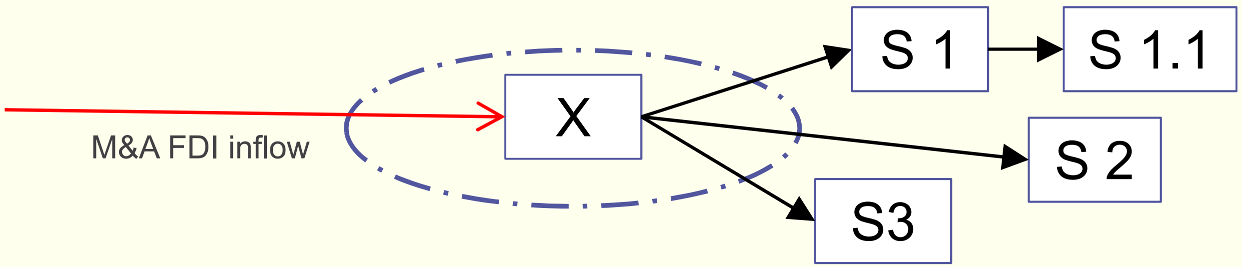
- Funding is often interchangeable → Linkages between the source and the use of funding are often obscure

- Estimating ’pass-through’ by using FDI flow data is highly interpretative:

How we should allow for the possible timing differences between inflow and outflow?



How we should interpret M&A-related flows?



→ **We estimate ’pass-through’ by using data on <u>FDI positions</u>**

Our method for estimating pass-through of FDI

1. We choose the FDI figure which is closer to zero (this is the theoretical maximum of 'pass-through')

2. We weight this with the % of FDI liabilities in total liabilities

Enterprise X

Liabilities	Assets
FDI liabilities 500	FDI assets 400
Other foreign liabilities 200	Other foreign assets 100
Domestic liabilities 100	Domestic assets 300
Total liabilities 800	Total assets 800

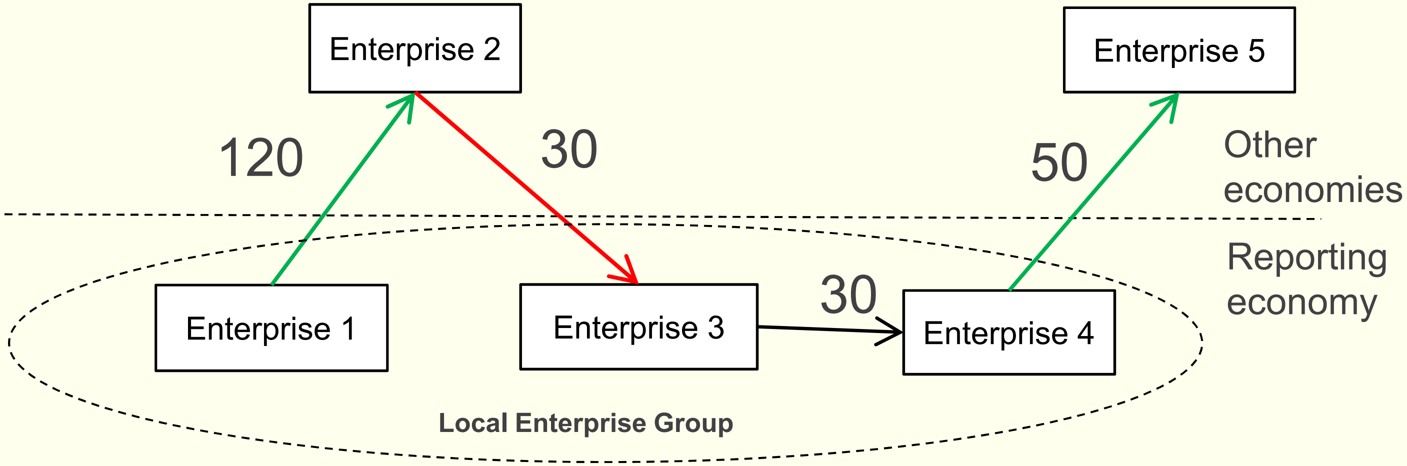
NB: If FDI liabilities and FDI assets have different signs (common with flow data), we determine pass-through FDI as zero. Note that negative pass-through are still allowed.

Pass-through of FDI:

$$400 \times \frac{500}{800} = \mathbf{250}$$

Pass-through activities may also take place in chains of local enterprise group units

3. We take this into account by using data aggregated at local enterprise group level.



Pass-through of FDI:

$$30 \times \frac{30}{180} = \mathbf{5}$$

Local Enterprise Group

FDI liabilities 30 Other liabilities 150	FDI assets 170 Other assets 10
Total liabilities 180	Total assets 180

Formal presentation of our method

$$X_t = \sum_i f(I_{i,t}, O_{i,t}, \lambda_{i,t})$$

$$f\left(I_{i,t}, O_{i,t}, \lambda_{i,t}\right) = \begin{cases} \min\left(I_{i,t}, O_{i,t}\right) \times \lambda_{i,t} & , I_{i,t} > 0 \; and \; O_{i,t} > 0 \\ \max\left(I_{i,t}, O_{i,t}\right) \times \lambda_{i,t} & , I_{i,t} < 0 \; and \; O_{i,t} < 0 \\ 0 & , otherwise \end{cases}$$

where:

X_t = Total of pass-through FDI in the economy

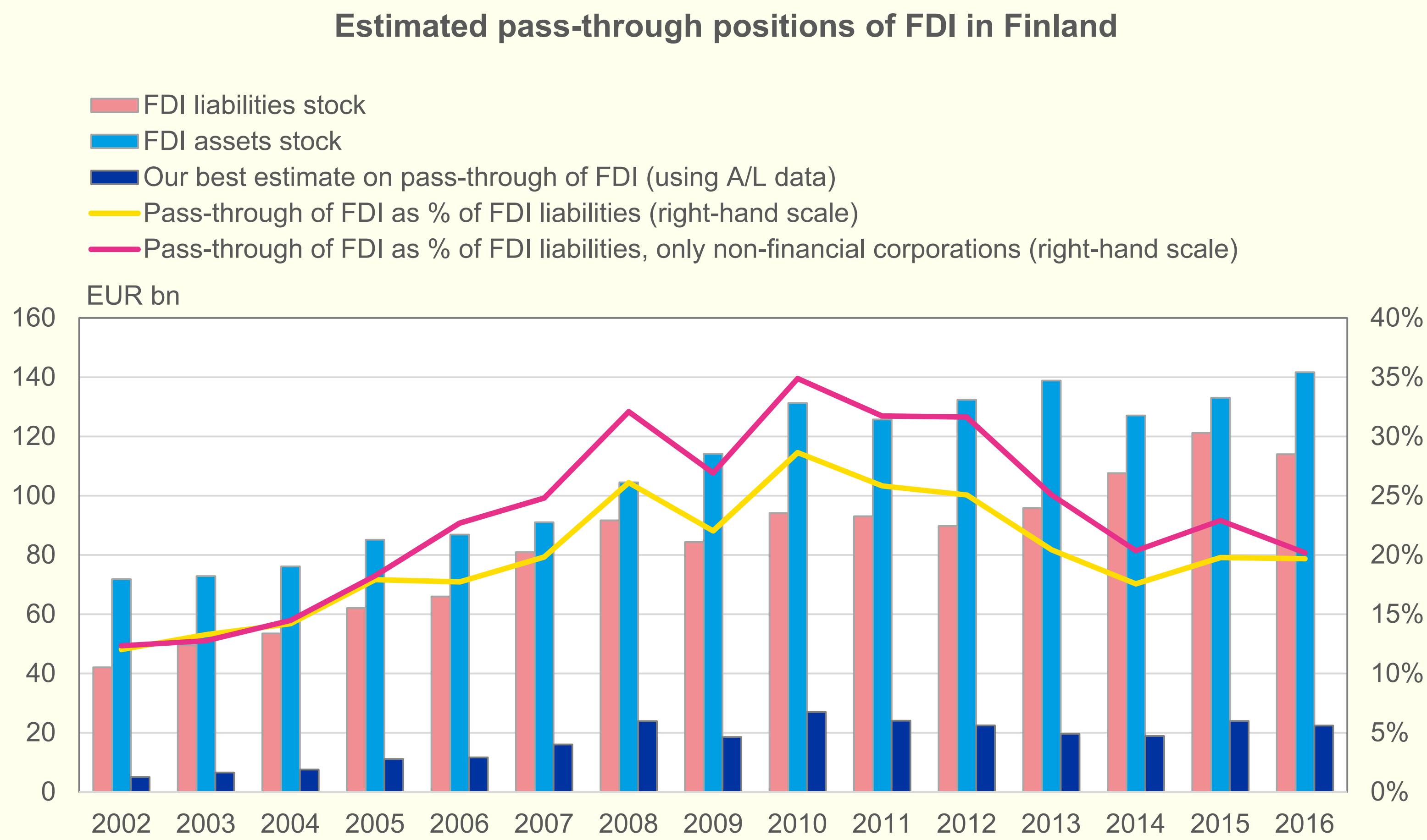
$I_{i,t}$ = FDI liabilities (or inward FDI) of enterprise (group) i at time point t

$O_{i,t}$ = FDI assets (or outward FDI) of enterprise (group) i at time point t

$\lambda_{i,t}$ = % of FDI liabilities in total liabilities of enterprise (group) i at time point t

NB: In addition to FDI positions, the method can be applied to measure pass-through FDI flows (though the above-mentioned conceptual issues need to be considered). Also, an application to cover also other BoP/IIP items in estimation is possible.

Results for Finland (preliminary)

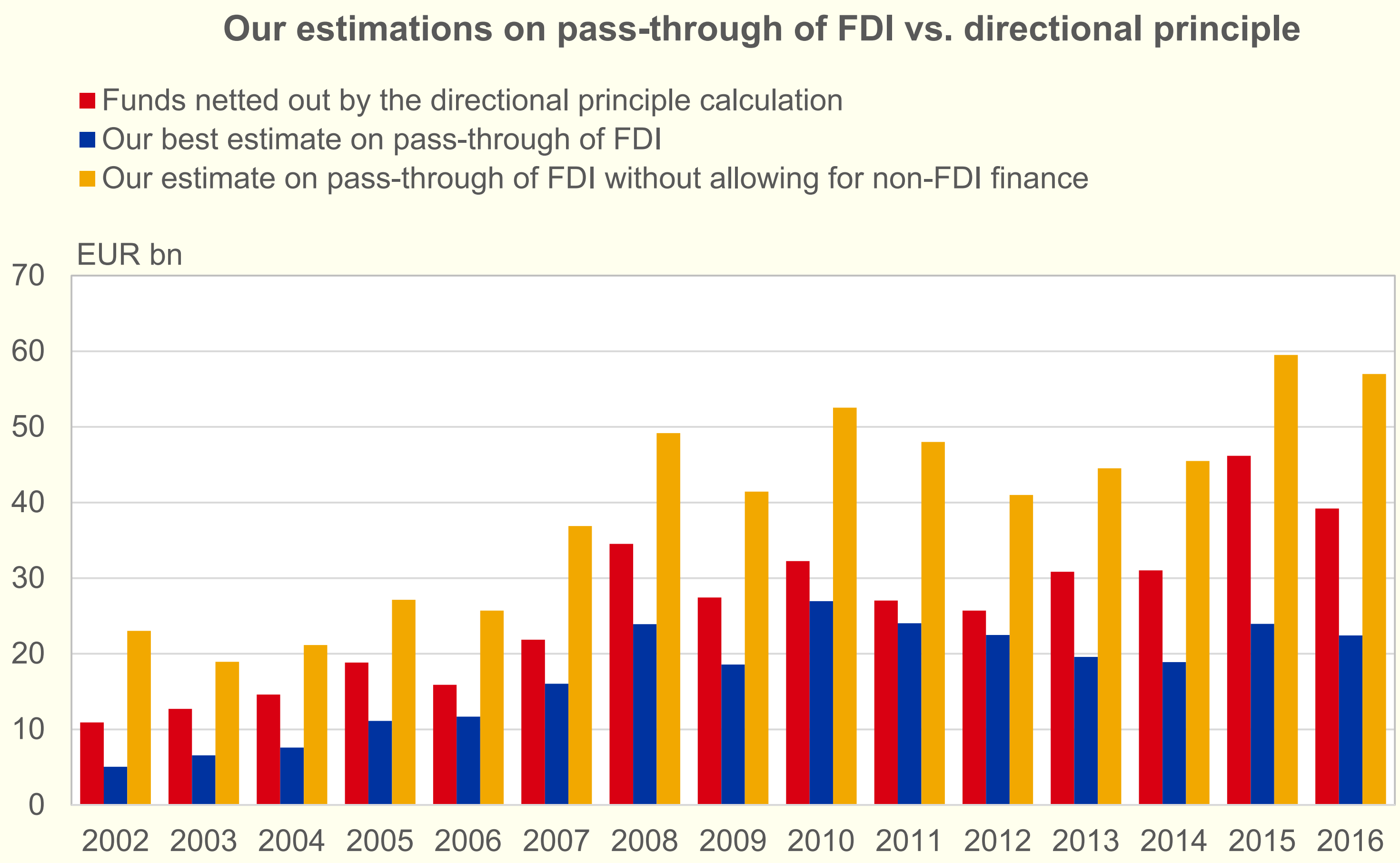


Sources: author’s calculations, Bank of Finland, Statistics Finland

Results for Finland: comparison to the directional principle calculation

→ Overall, directional principle seems to overestimate 'pass-through' for Finland

→ Non-FDI finance is a highly significant factor!



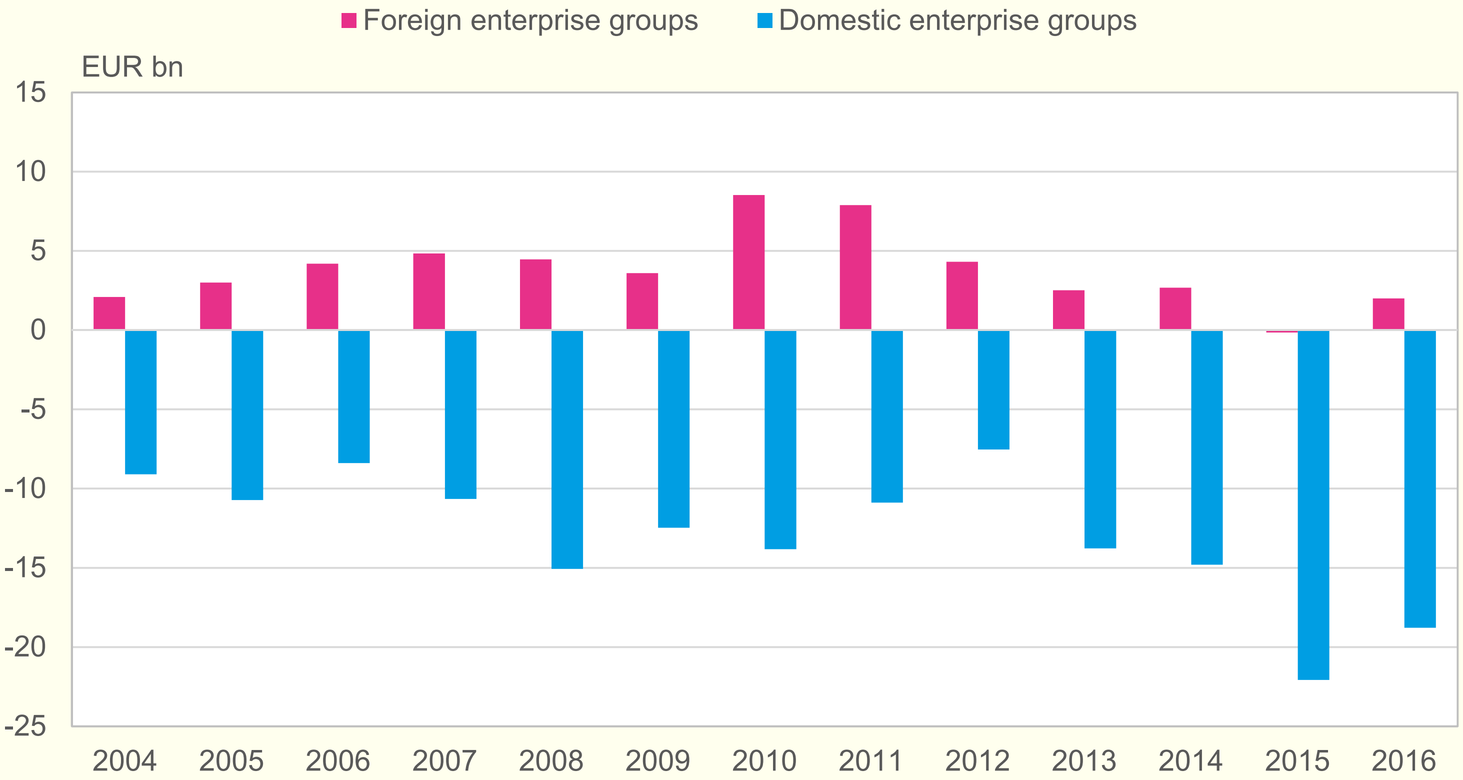
Source: author's calculations.

Results for Finland: comparison to the directional principle calculation (2)

→However, 'overestimation' is mainly due to Finnish enterprise groups in the data

→'Pass-through' by foreign groups in Finland seem rather to be <u>under</u>estimated by the directional principle

Difference between our best estimate of 'pass-through' and the funds netted out by the directional principle calculation*



*) Here, a negative figure can be interpreted as an overestimation and a positive figure as an underestimation of 'pass-through' by the directional principle calculation. Enterprise group's nationality is determined based on the residency of the ultimate controlling parent enterprise.

Source: author's calculations.

Evaluation of our method

- Simple
- Works theorethically best with positional FDI asset/liability data
  - Can be applied to other FDI and BoP/IIP data, but some conceptual ambiguities need to be addressed
- Captures 'pass-through activities' in SPEs and non-SPEs
- May not require any extra data collection from statistics compiler
  - But requires access to firm-level data

Thank you!

- Questions?
  - Topias.Leino@bof.fi