Applying method #5
Some additional aspects

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Additional aspects

• What data/results would make sense?
  • Data availability, volatility, etc.
  • Reporting on holding wealth
  • Exchange rates

• MSCI world price index

• Gravity model
What data/results would make sense?

- Assumption:
  internationally reported > reported to national authorities

\[ \phi_i = \sum_j \beta_{j,i} - \alpha_i \]

\( \phi_i \) ... undeclared assets of citizens of country \( i \)

\( \beta_{j,i} \) ... the sum of assets of citizens of country \( i \) reported as being held in country \( j \)

\( \alpha_i \) ... the sum of assets declared by citizens of country \( i \) as being held in other countries \( j=1, \ldots, n, \) where \( j \neq i \)
What data/results would make sense?

- Assumption:
  internationally reported > reported to national authorities

\[ \phi_i = \sum_j \beta_{j,i} - \alpha_i \]

National Tax Authority
What data/results would make sense?

- Assumption: Internationally reported $\phi_i = \sum_j \beta_{j,i} - \alpha_i$ > Reported to national authorities

BIS LS
OECD CRS

National Tax Authority
BIS Statistics, experiences

- The **time-series is long enough** (2014-) to analyse changes.


- It is hard to believe that Finns have doubled their cross-border assets.
BIS Statistics, experiences

• Value of assets have been in range 1bn to 2 bn dollar.
• According to Households assets statistic (Source: Statistics Finland) total financial wealth of households was about 200 bn €.

• Data include not only households but also NPISHs (Non-profit institutions serving households).

• Not available at reporting country level.
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Tax data, experiences

• No mandatory declaration of assets (no wealth tax).
• BIS Statistic were compared to CRS data.
• Value of assets in CRS data was about 10 times higher than BIS statistics.

• CRS data also include people who are not taxed in Finland. It is difficult to interpret whose assets should be included in the estimation.
• Available at reporting country level.
Some additional considerations

- Not required to report
- Exchange rates
- Capital consumption
- Capital gains

\[ \text{flow}_{i,t} = \phi_{i,t} - \phi_{i,t-1}(1 + v_t) \]
MSCI world pride index

• Global equity index
• Performance of stocks

• Suitability?
• Alternatives?
MSCI world pride index

MSCI ACWI INDEX DAILY PERFORMANCE

Source: https://www.msci.com/our-solutions/indexes/acwi
Gravity model

• Traditionally: estimate bilateral trade flows

\[ F_{ijt} = G \times \frac{M_{it}M_{jt}}{D_{ij}} \]

- \( F_{ijt} \) ... trade flows from country \( i \) to country \( j \) at time \( t \),
- \( M_{it} \) and \( M_{jt} \) ... the economic sizes of countries \( i \) and \( j \)
- \( D_{ij} \) ... the distance between countries \( i \) and \( j \).
Gravity model

• Econometric modelling:

\[
\log F_{ijt} = g + \beta_1 \log M_{it} + \beta_2 \log M_{jt} - \beta_3 \log D_{ij} + \epsilon_{ijt}
\]

• Additional parameters, e.g., corruption, secrecy, language ...
Gravity model

Strengths
- Data requirements
- Starting point in IFFs measurement

Limitations
- Outputs estimated
- Macro-level flows
Gravity model

- Application: Italian cross-border bank transfers

*Destinations of cross-border financial flows*

![Pie charts showing financial flows](Source: Cassetta et al. (2014))
https://stats.unctad.org/iiffs