



VAT Gap Estimation

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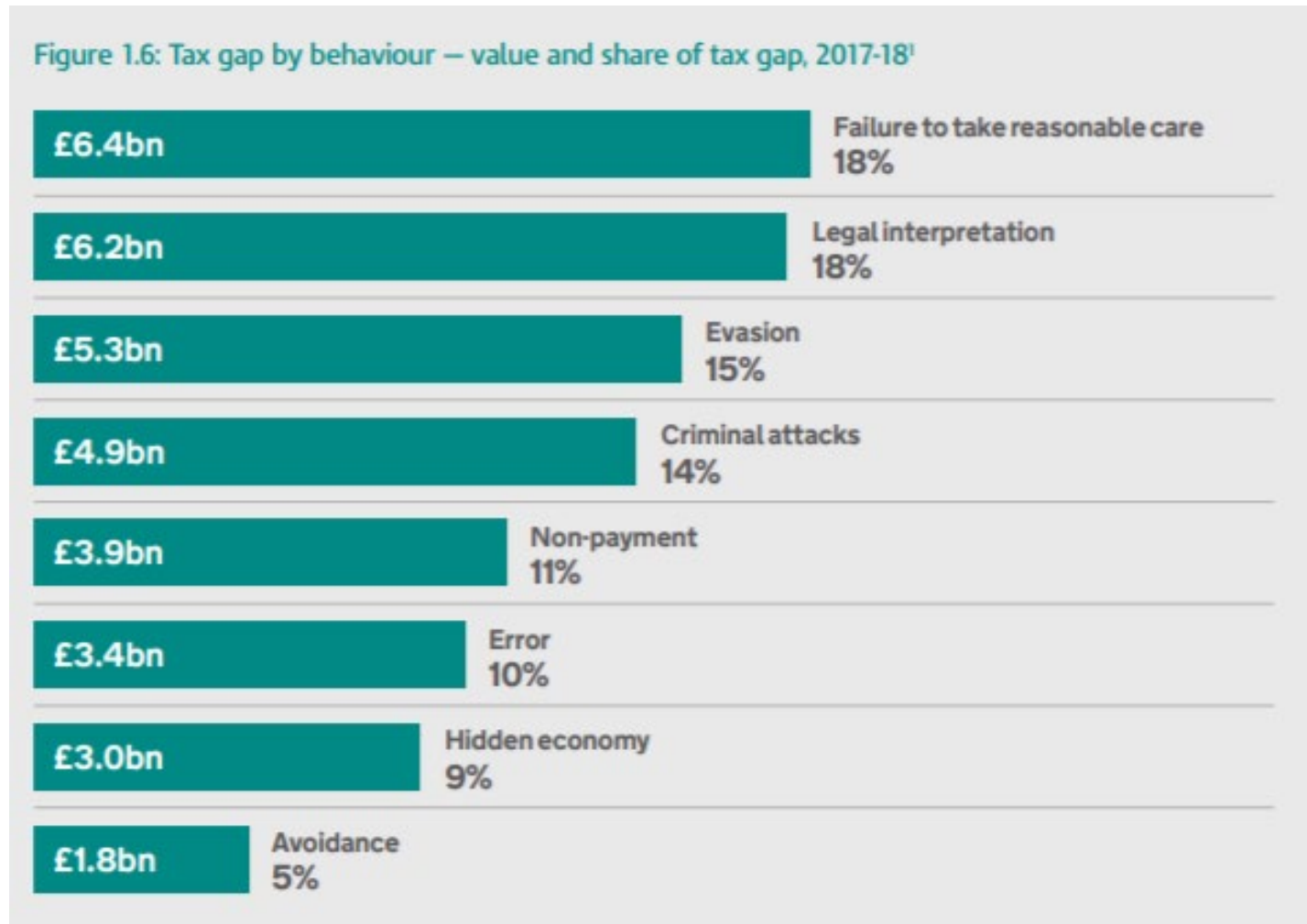
Finnish Tax Administration



Definitions

- Tax Gap = the actual revenues - the amount of tax due based on tax laws
 1. reporting errors and deficiencies
 - frauds (incl. smuggling, hidden sales, false refunds)
 - misunderstandings and misinterpretations (for example real estates)
 - declaration errors
 2. collection gap
 - collection gap include taxes losts in bankrupties but also fraudulent losses.
- Tax planning or base erosion is not a part of the tax gap in Finland
- VAT gap \neq IFF?
 - what about other taxes?

Should we care about motives and skills?



Theory

■ Top-Down methods

- production based method (so called IMF's method)
 - focusing on sectoral (industries) analyzes
- consumption based method (for example EU, UK)
 - focusing on final consumption (households, non-deductible use)
- also excises taxes (tobacco and alcohol)
- trend indicator

■ Bottom-up methods

- random audits
- registers (unpaid taxes) and comparison to the 3rd party information (for example bank accounts)
- estimations based on risk based audits

Production method, data needs

- Input - output tables as disaggregated level as possibly
- other data sources when defining parameters (for example some commodities have to be split to taxable and non-taxable shares)
- national account when IO is not yet published
- data should be independent from taxation
- VAT revenues
 - long road: declarations, assessments, audit results, payments, refunds (to estimate accrued net collections)
 - or total vat revenues

Formula

$$V^s = \sum_c (M_c^s \times \tau_c) + \left[\sum_c (Y_c^s - X_c^s) \times T_c \right] \times r^s - \left[\sum_c (N_c^s + I_c^s) \times T_c \right] \times r^s \times e^s$$

where

V^s = the potential net VAT for a sector,

τ_c = the VAT rate that applies to commodity c (zero if zero-rated or exempt),

M_c^s = imports by sector s of commodity c,

Y_c^s = output by sector s of commodity c,

X_c^s = exports by sector s of commodity c,

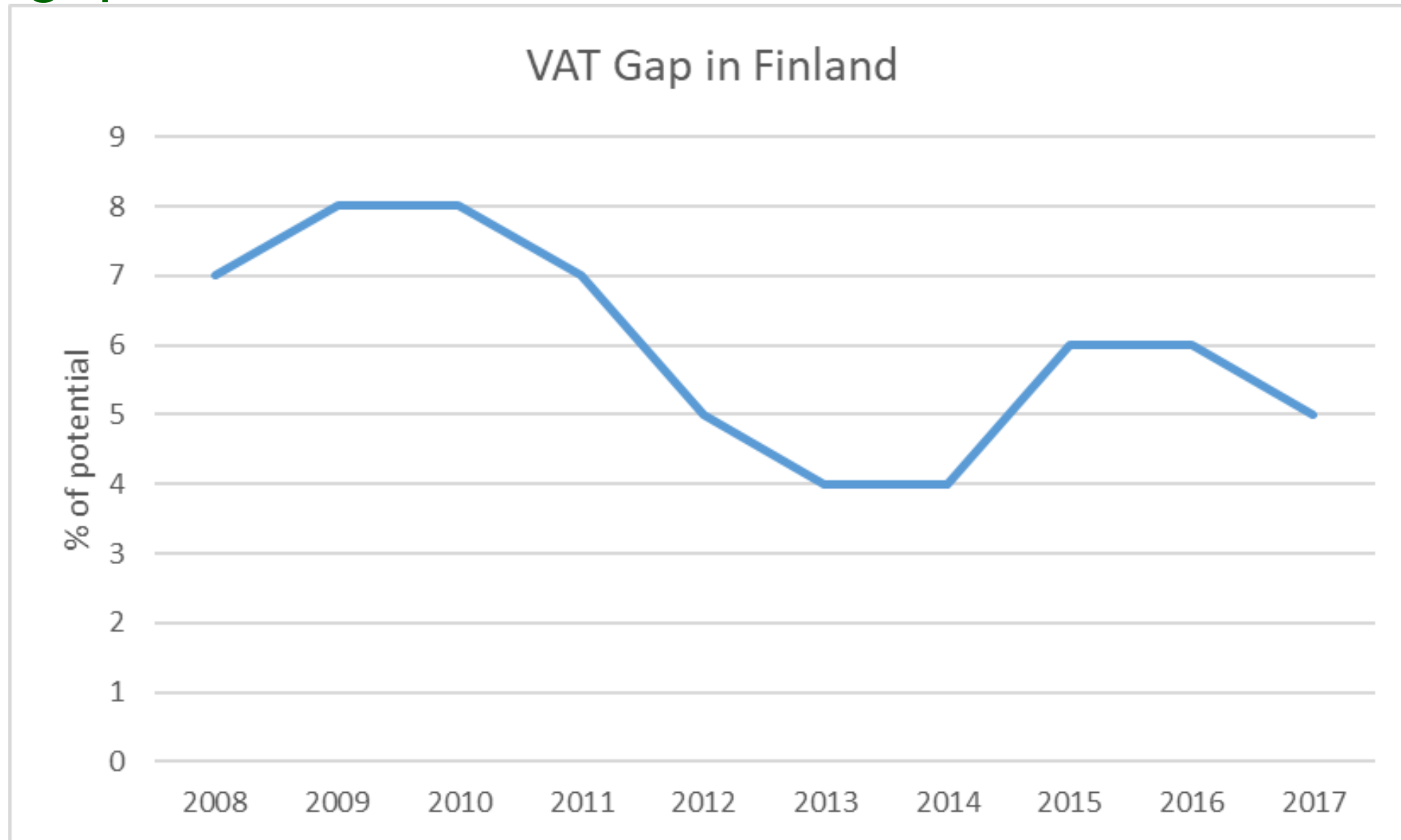
N_c^s = intermediate demand (consumption) by sector s of commodity c,

I_c^s = investment by sector s of commodity c,

r^s = the proportion of output for a sector produced by registered businesses, and

e^s = the proportion of output for a sector which is taxable output.

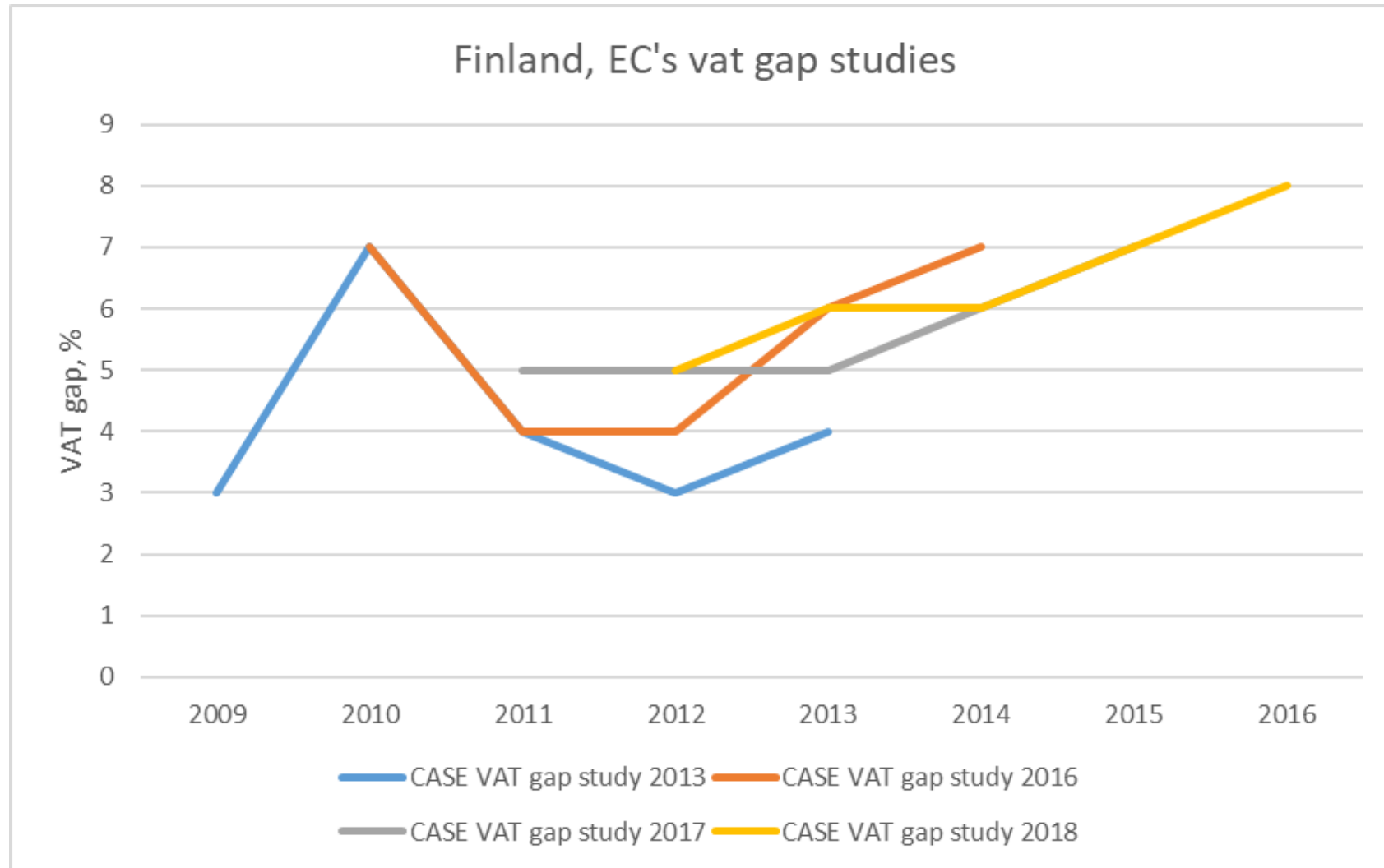
VAT gap in Finland is about 5-7%



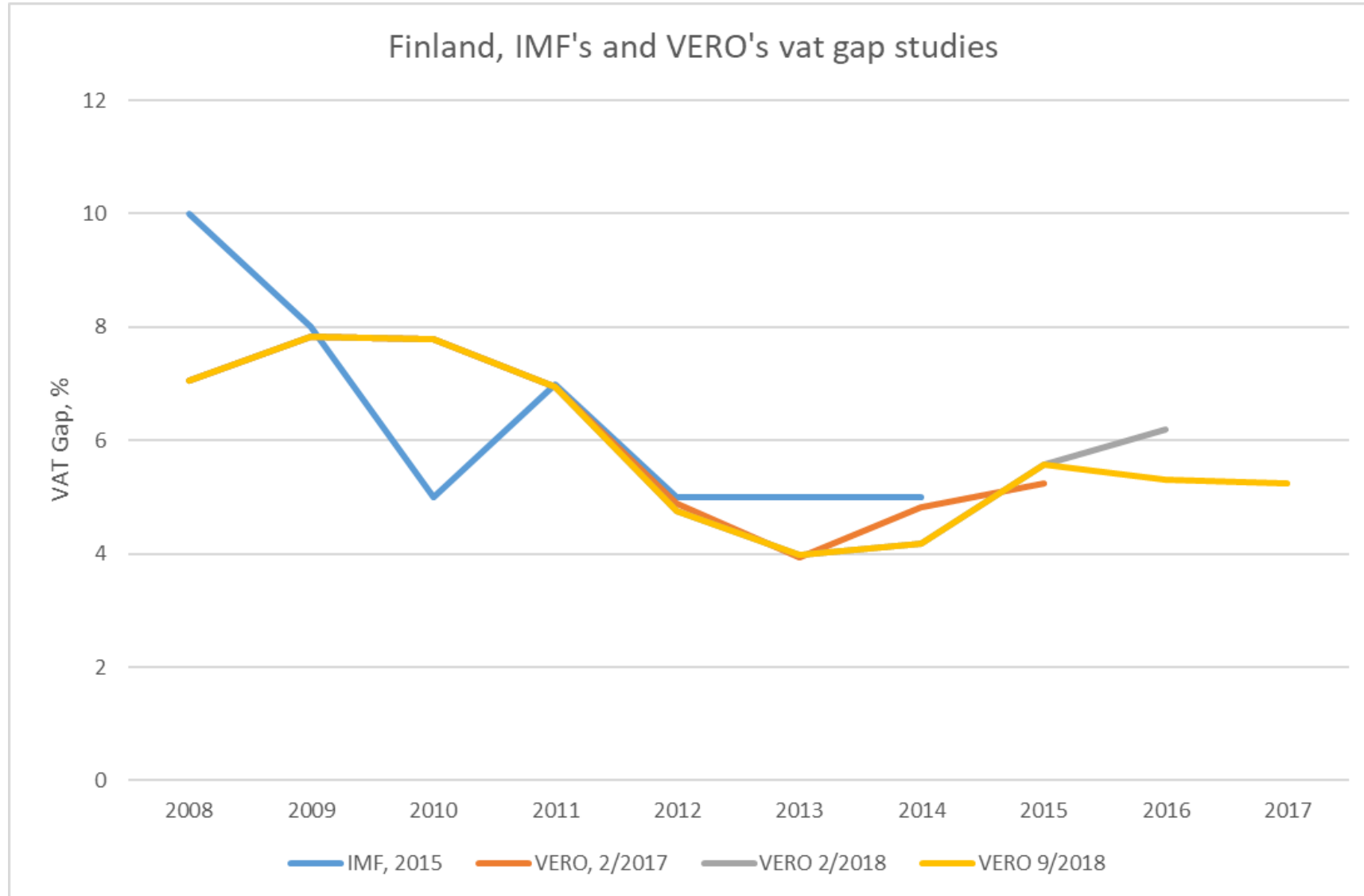
Experiences from the production side method

- We don't follow up sectoral gaps because interpretation is challenging
 - negative gaps & huge positive gaps
 - different definitions in national accounts and in VAT
 - VAT: legal unit, NA: local or activity unit
 - yearly variation is significant
 - compared to Statistics Finland's classifications about 10% of companies are in different industries, especially in restaurants → gap in restaurants is overestimated
 - reverse charge in the construction sector (since April 2011)
- Easy to update...if everything works
- Don't "over" interpret the results! 1 percentage point change probably means nothing.

Revision



Revision



Bottom-up analysis

- Experts in Grey Economy Information Unit have developed profiling method which is based on features of the fraudulent companies (such as doesn't pay taxes, unpaid taxes, suspicious persons in charge, etc).
 - MTIC fraud: 25-35 million
 - refund fraud: 30 million
- Vero has done also tax gap analysis concerning distant selling, e-commerce, Bitcoin profits, C2C accommodation (like Airbnb). Analyses based on the use of credit cards, bank accounts or some other 3rd party information.
- These could be use as proxies for IFFs.

Bottom-up analysis

- Problems:
 - frauds are developing and becoming more difficult to find.
 - new payments methods
 - global platforms
 - ➔ how many years we can use models and data sources?