

Statistical Units Delineation and the Quality of Business Statistics

Peter Struijs

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Statistics
Netherlands

This talk is about...

What's the problem?

Unit delineation

Types of errors

Effects of errors

The way forward

Types of errors in business statistics

Business statistics are about sets of businesses

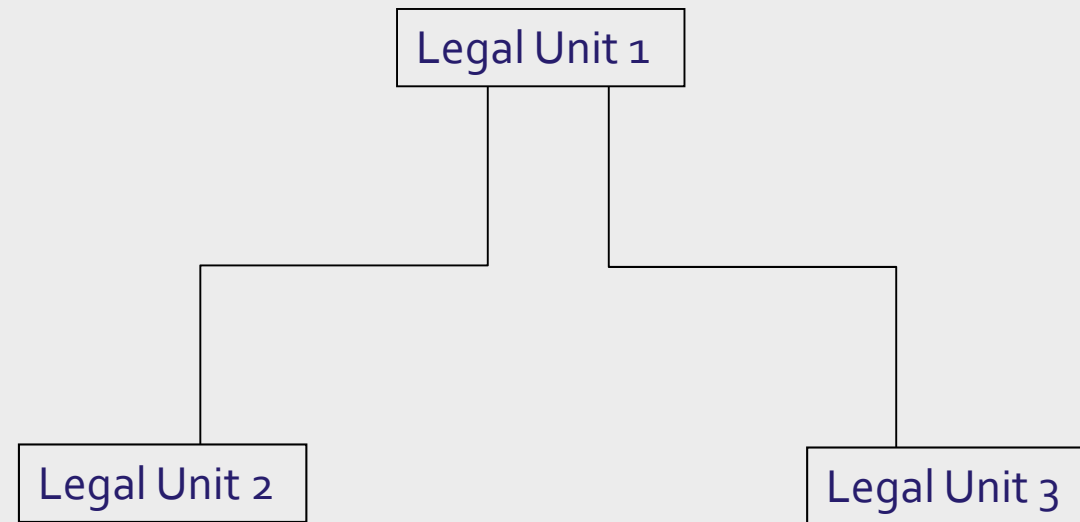
Sampling theory:

- frame errors
 - ✓ overcoverage
 - ✓ undercoverage
- sampling errors
- non-response bias
- classification errors
- measurement errors
- etc...

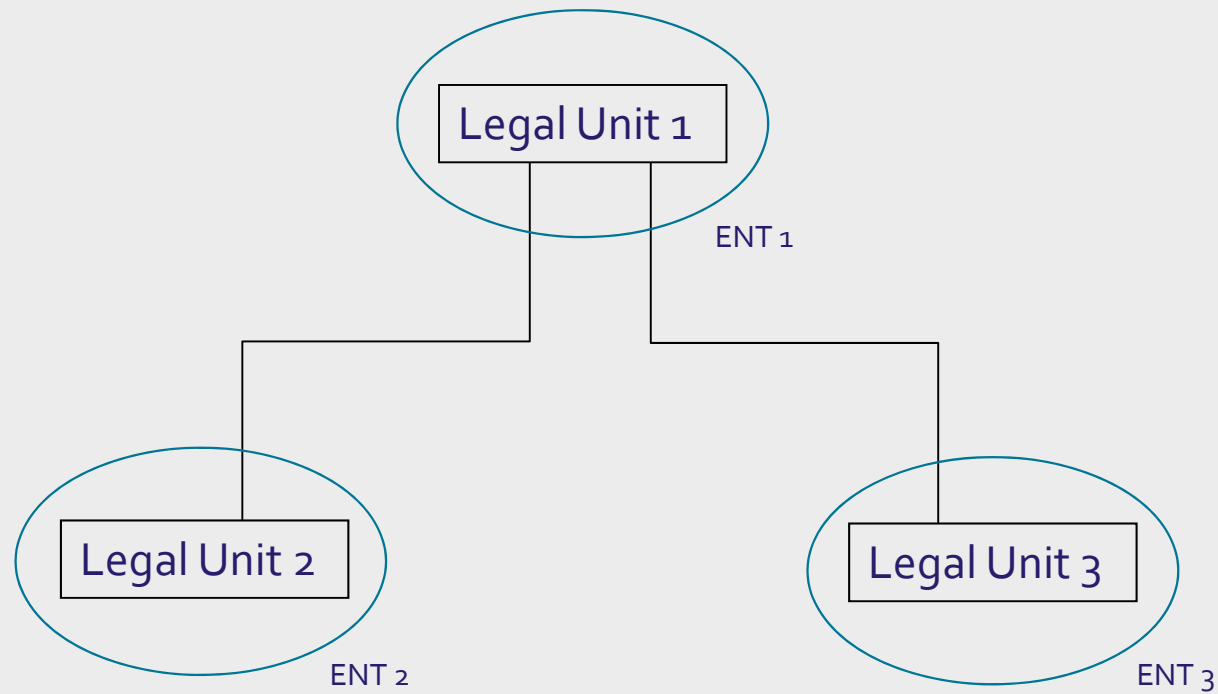


But: The “business” is often taken for granted

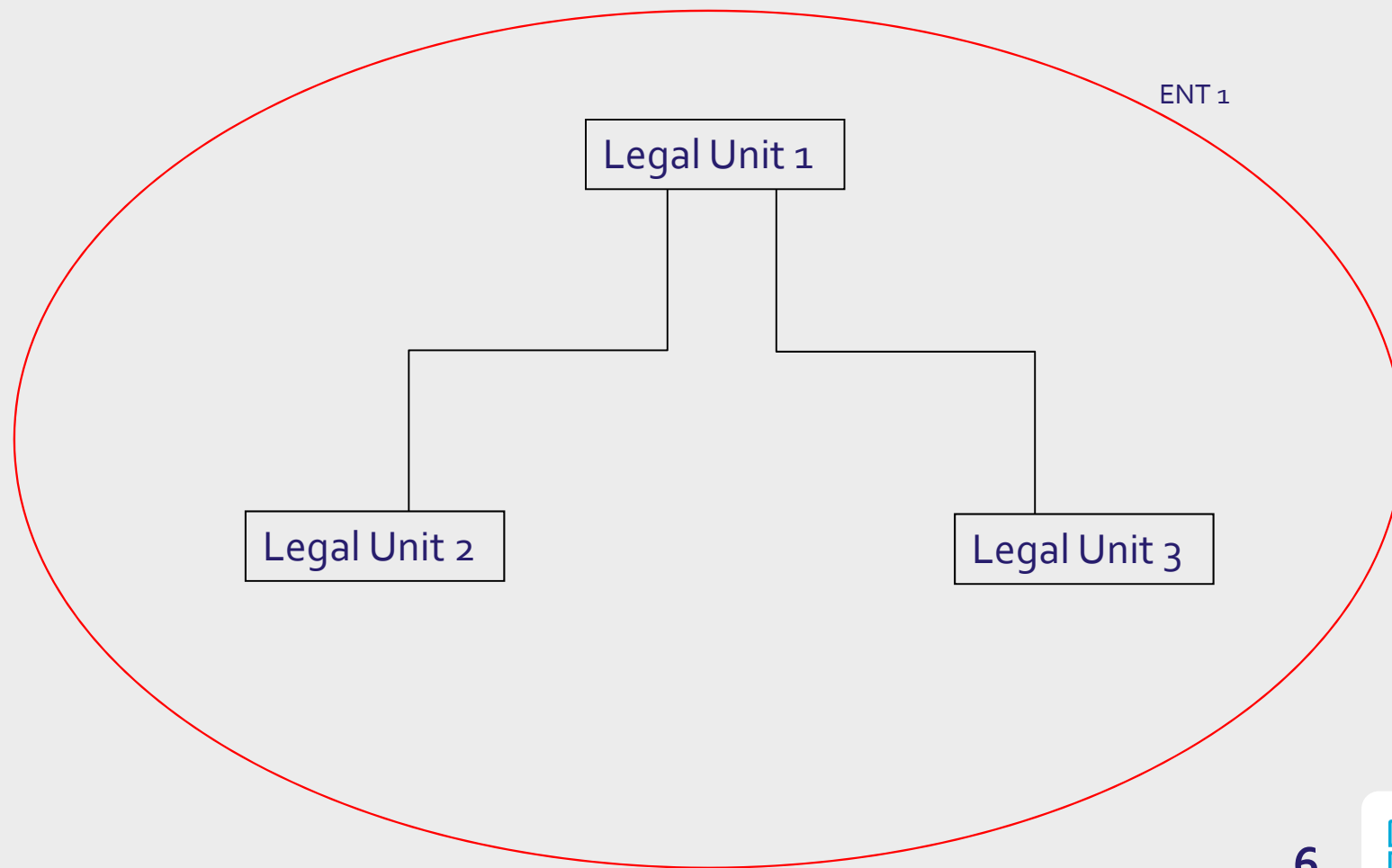
Unit delineation: The problem



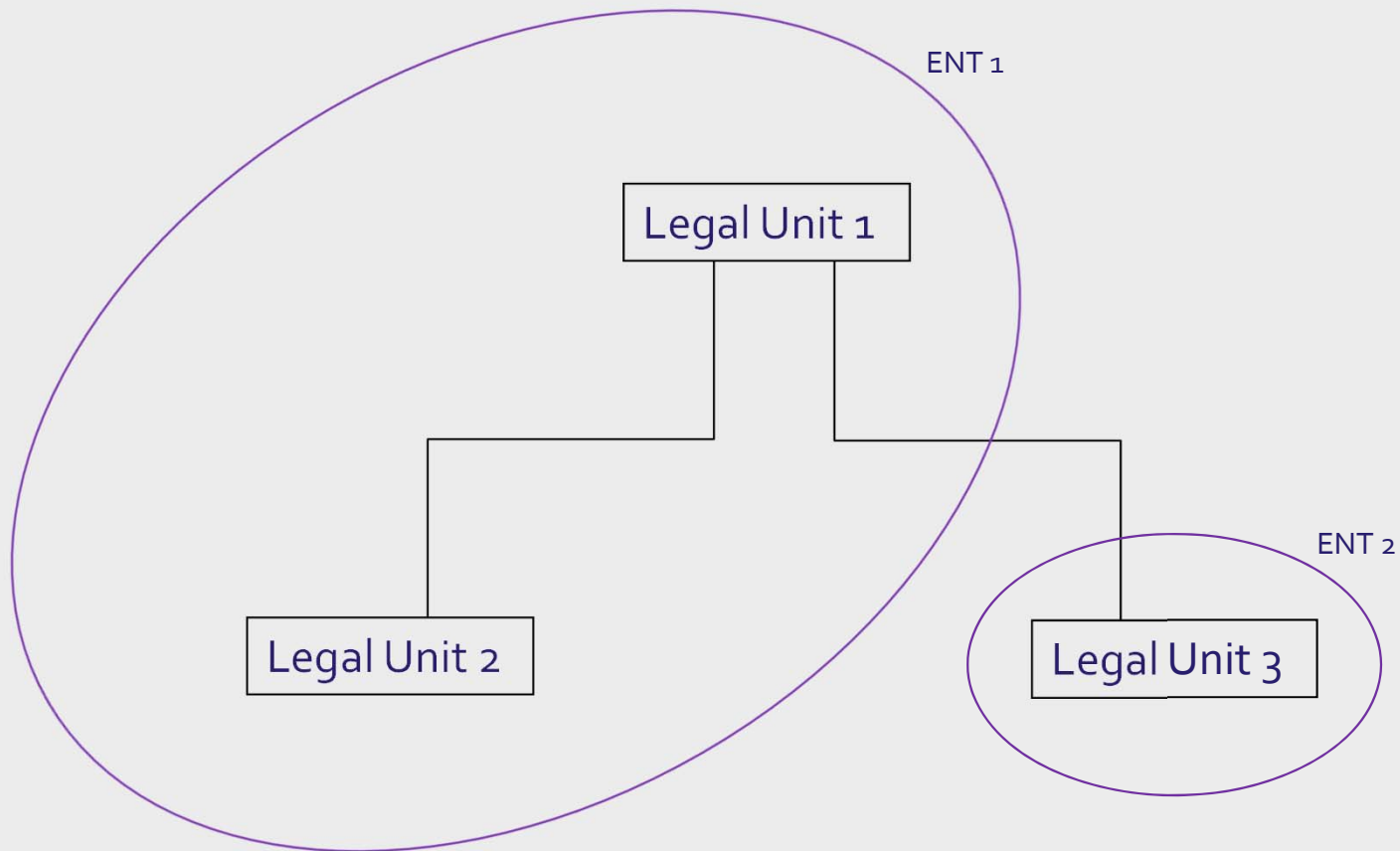
Unit delineation: Solution 1



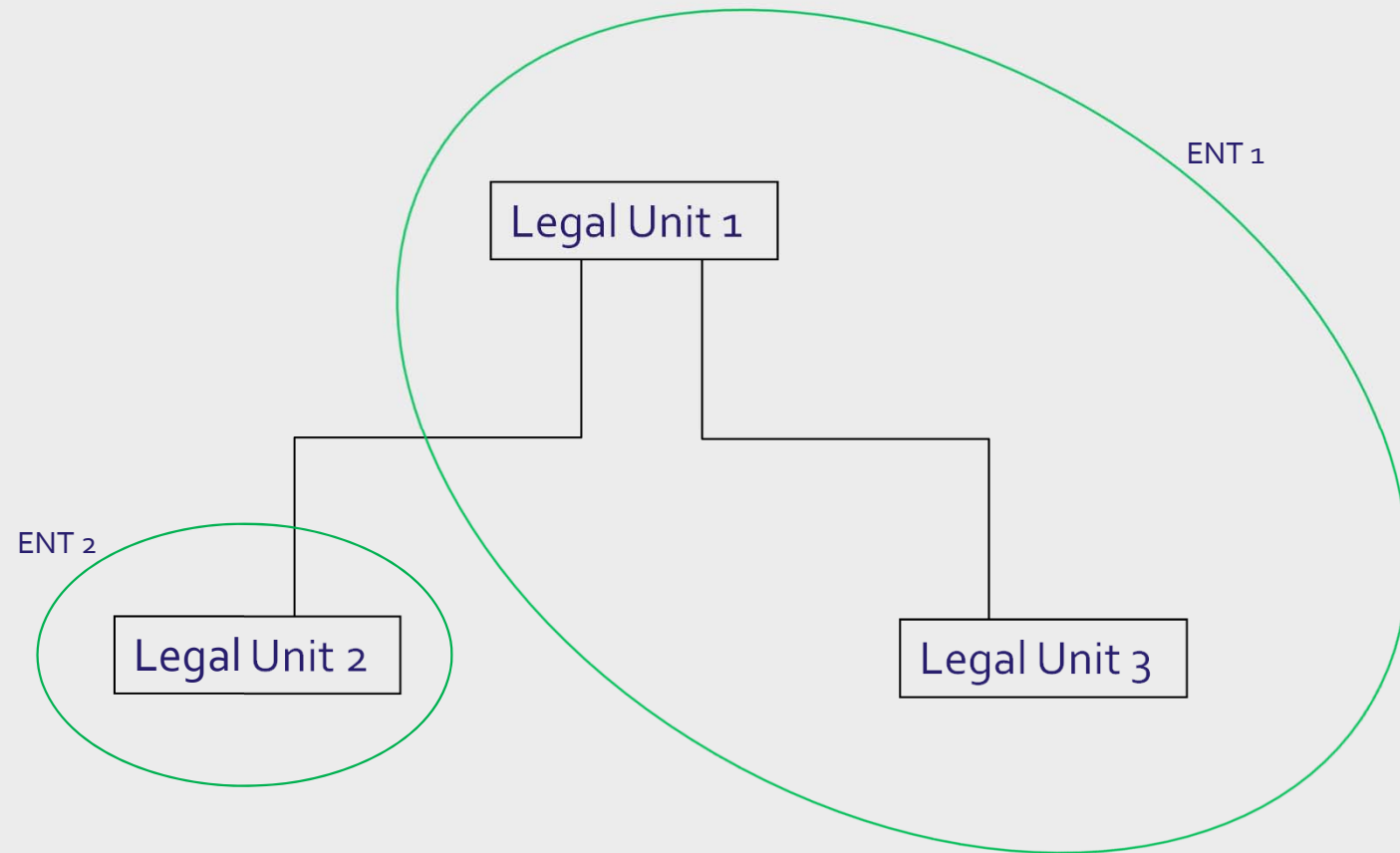
Unit delineation: Solution 2



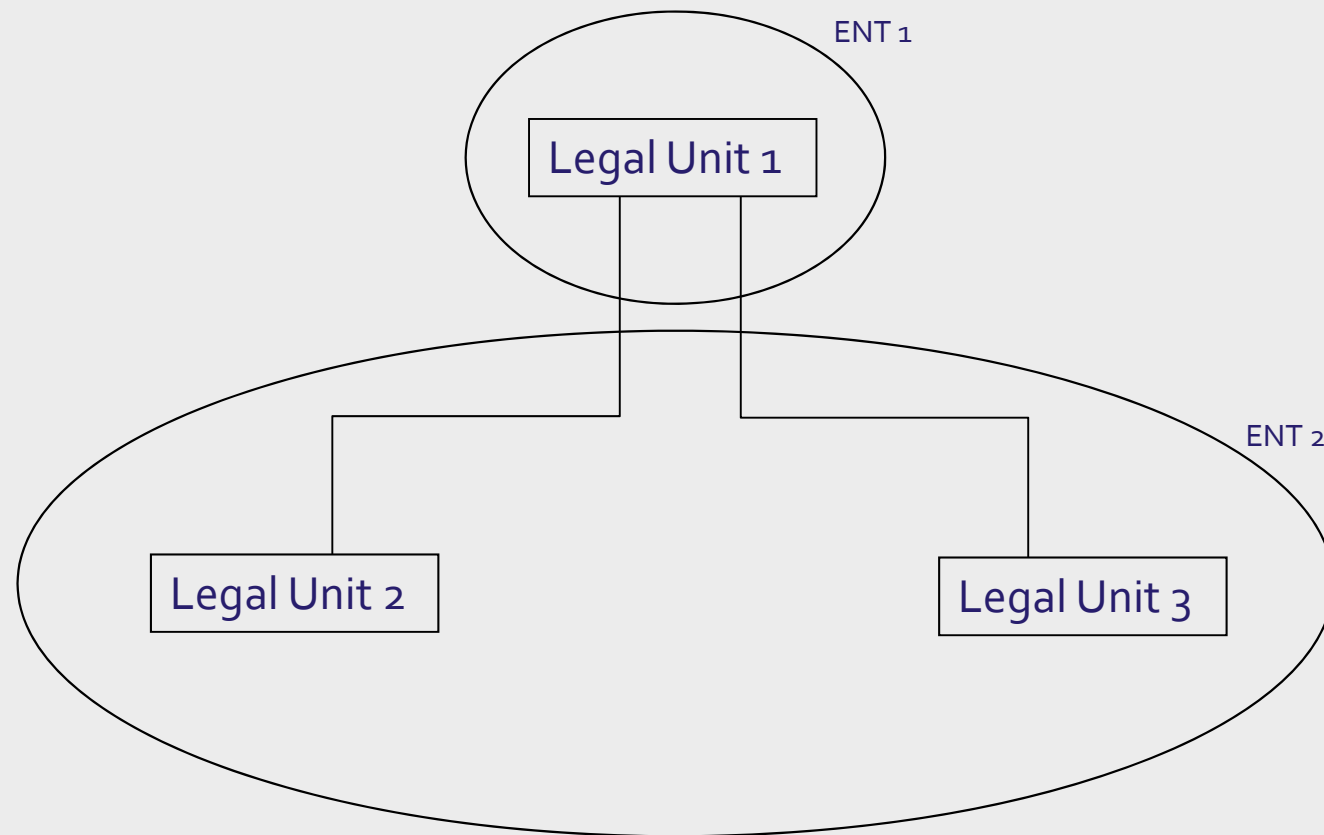
Unit delineation: Solution 3



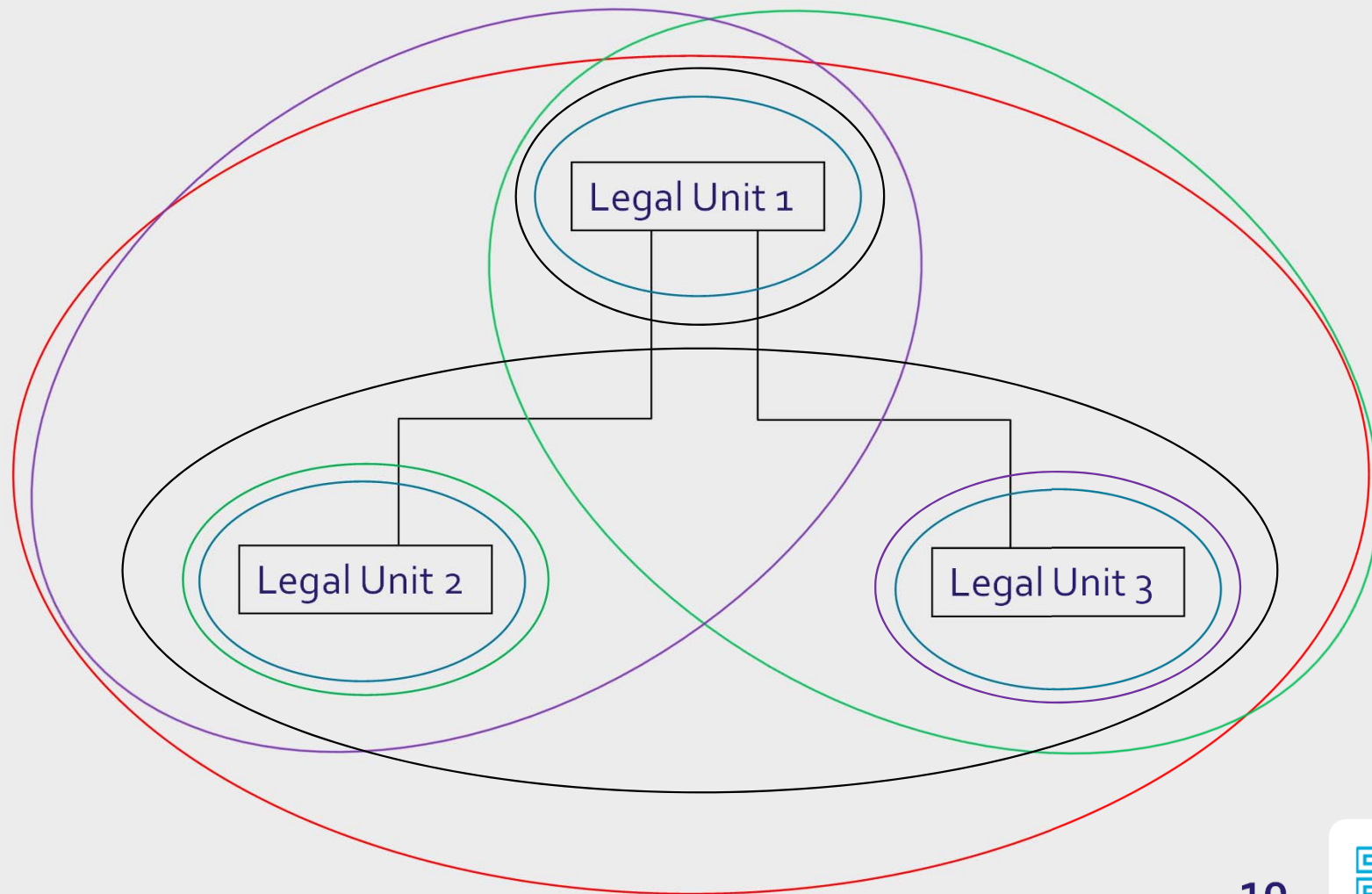
Unit delineation: Solution 4



Unit delineation: Solution 5



Unit delineation: Possibilities



Errors in unit delineation

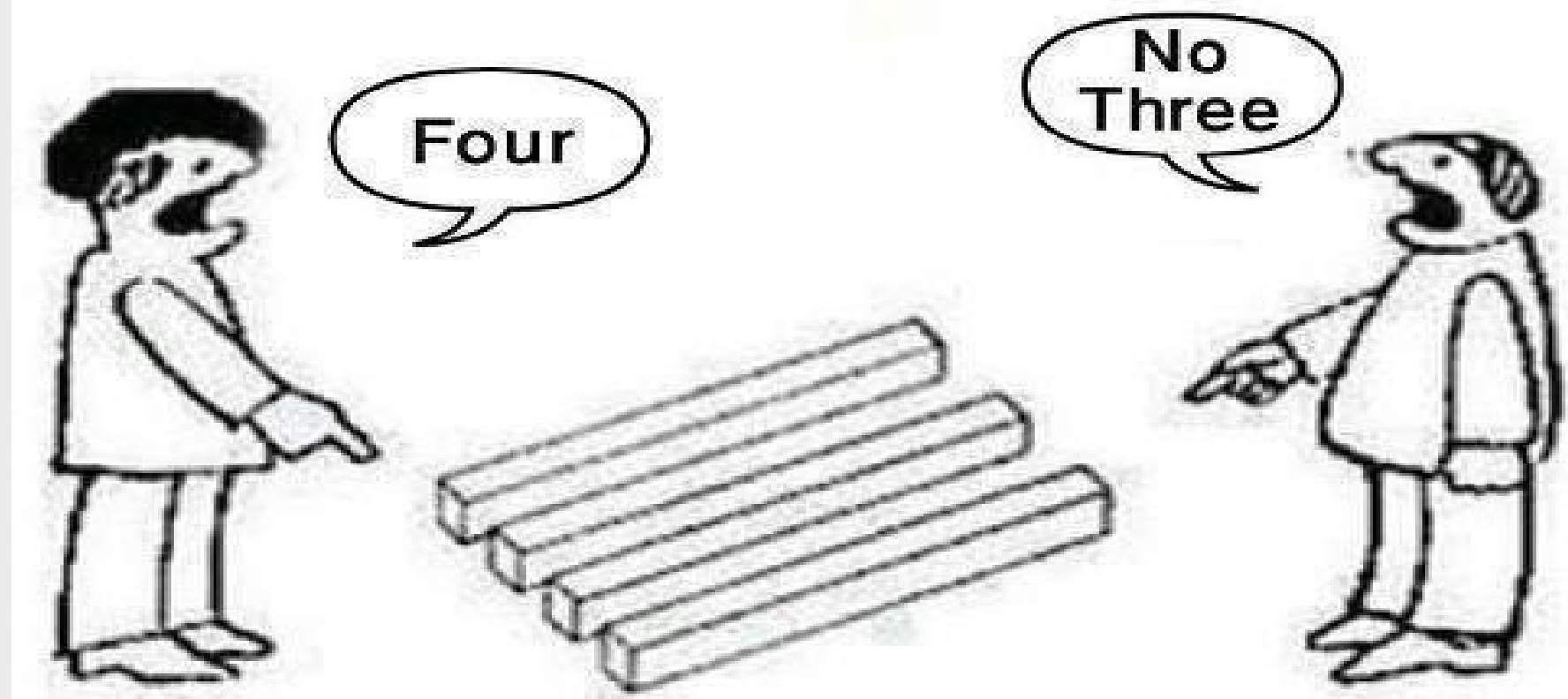
unit delineation error

=

incorrect inclusion or exclusion of administrative unit(s)
or parts thereof

- unit delineation is very costly, errors cannot be avoided
- definitions of statistical units need interpretation
- changes need to be detected and need to get a time-stamp
- similarities with the industrial classification of units

It is really confusing!!!



Errors due to wrong unit delineation (1)

At the level of the statistical unit:

- wrong coverage of administrative units
- possible errors in classification variables:
 - size
 - activity
 - etc.
- possible errors in count variables

Errors due to wrong unit delineation (2)

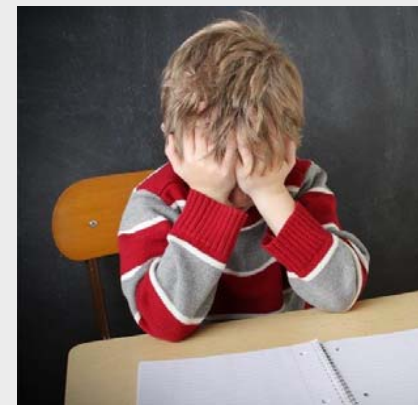
At the level of the population of statistical units (1):

- possible under/overcoverage of administrative units
- possible error in the number of statistical units
- possible errors in the distribution of the population:
 - size
 - industry
 - etc.

Errors due to wrong unit delineation (3)

At the level of the population of statistical units (2):

- possible errors in count variables:
 - consolidation sensitive (e.g. turnover)
 - not consolidation sensitive (e.g. volume of employment)
- possible errors in derived variables (e.g. turnover per employee, average size)
- possible errors in aggregate change





The way forward



- Incorporate unit delineation in quality management:
 - set quality norms
 - try to measure errors
 - reduce the room for interpretation
- Discuss unit delineation errors in quality reports
- Coordinate unit delineation across countries

Time for discussion...

