Statistical benchmark for - France

Sample Comparable Companies Analysis

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Executive summary

- This report presents the results of a benchmarking study for [redacted] in France
- This study was performed by TPqube in October 2018 using data from the Bureau van Dijk Orbis database. TPqube used a statistical model, relying on observations for more than [redacted] independent companies
- This search produced the following arm's length intervals:

	Return on total costs 2015-2017
1st quartile	[redacted]
Median	[redacted]
3rd quartile	[redacted]

- The quality of this estimation was estimated to be 4 out of 5

Main database used

- This study relies on data provided by an external database of company financial data, ORBIS, which is published by Bureau van Dijk and provides financial and market data on over 165 million companies. It is the most comprehensive database available for company information. The information contained in the ORBIS database is sourced from more than 40 different information providers. For each company, ORBIS provides financial information (profit and loss account, balance sheet, etc.) and other descriptive information (activity codes, directors, ownership and subsidiaries, etc.). It is to be noted that company specific information available in the database is dependent on filing requirements in the different countries. The results presented in this report are obtained using the October 2018 version of the Orbis Database.
- The model is run on all companies fulfilling the following criteria:
  - Companies must have a BvD independence rating of A+, A or A- (to ensure that the set contains only independent companies)
  - Companies must have EBIT and Sales information available at least one year in the 2015-2017 period (to ensure that we can compute the profit level indicators)
  - Companies must have a trade description (to ensure that their functional profile is correctly specified)

Statistical model
Overview of the model

- TP qube statistical model aims at estimating (predicting in statistical parlance) what would be the profitability of an independent company with **exactly** the same characteristics as the tested party
- The model designed by TPqube intends at explaining the profitability of independent companies in function of their characteristics. Formally, this model intends at estimating a function of the form:

$$\Pi = f(X_1, X_2, X_3, \ldots)$$

With: Π the profitability

X_1, X_2, X_3, … the parameters which affect the profitability of the company such as its size, maturity, geography…

- This estimation is based on the largest possible set of independent companies
- Once the model is estimated, the estimate for the counterfactual profitability is determined by:

$$\Pi' = \hat{f}(X'_1, X'_2, X'_3, \ldots)$$

With: Π' the counterfactual profitability

X'_1, X'_2, X'_3, … the parameters of the tested party

$\hat{f}$ the estimated functional form

- The lower and upper range are constructing by computing the 50% confidence interval for the prediction

Full details on this model and on the functional form chosen will be provided to tax administrations as per their request

Statistical model
Evaluation of the results quality

- The quality of the estimation is determined through a combination of factors, such as:
  - Statistics for the estimate (such as its standard error)
  - Statistics for points near the estimate (such as their “error”)
  - Comparison with alternative functional forms
  - Comparison with alternative models (e.g. robust linear regressions)
  - The analyst’s judgement
- The quality of the estimation is reported in a scale from 1 to 5

Tested party

- The tested party has the following characteristics:

Item	Tested party characteristics
Sales for year 2017	[illegible]
Total assets for year 2017	[illegible]
R&D expenses for year 2017	[illegible]
Country	[illegible]
Creation date	[illegible]
Staff number for year 2017	[illegible]
Activity description	[illegible]

- These characteristics were fed into our model to estimate the counterfactual profitability for this tested party

Note: These data were provided by *company CCC* and have not been independently checked by TPqube.

Results
Arm's length intervals

- For this search, TPqube computed estimations for the RoTC, defined as follows:

$$Return\ on\ Total\ Costs\ (RoTC) = \frac{EBIT}{Sales\ - EBIT}$$

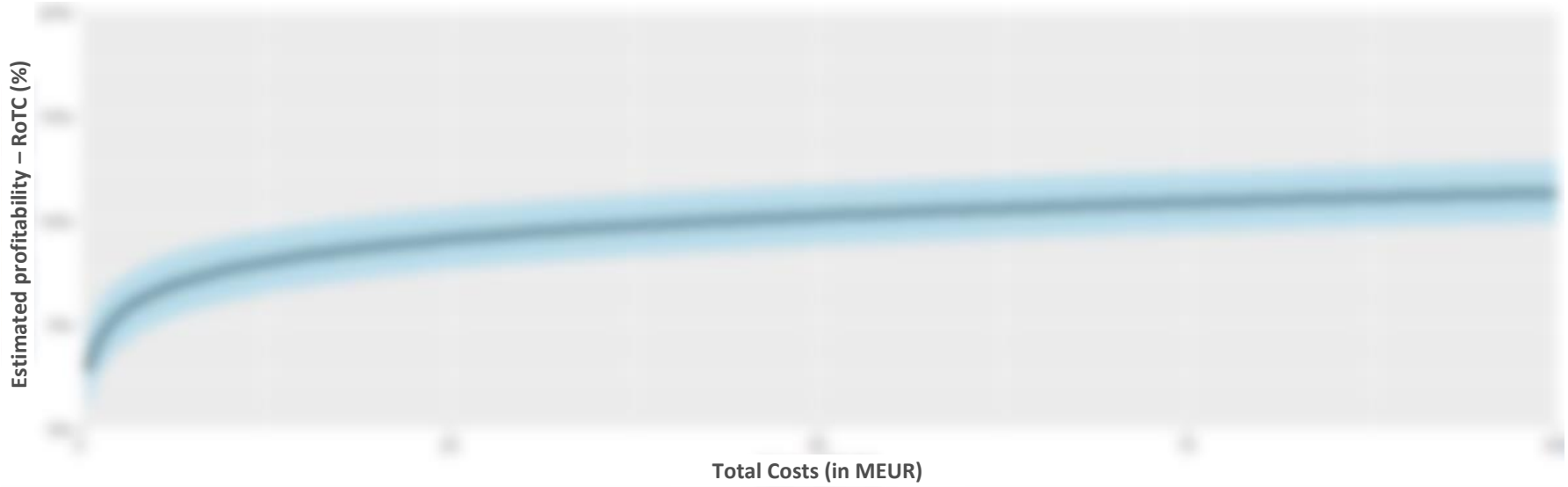
- Based on the approach detailed above, the range of arm's length estimates is presented in the table below:

	Return on total costs 2015-2017
1st quartile	[illegible]
Median	[illegible]
3rd quartile	[illegible]

Results
Quality of the results and sensitivity analysis

- The quality of this estimation was estimated to be 4 out of 5

- As can be seen from the graph below, this estimation is not affected by short deviations in the amount of sales:



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