

Module10 Benchmarking Practice

1. Benchmarking Practice

1.1 Session 4.3:



Notes:




1.2 Content



Content

1. Introduction to benchmark techniques
2. Denton Methods
3. Use of XLPBM or BENCH
4. Summary and practical exercise

1.3 Introduction






Introduction

General objective of benchmarking is:

- To preserve as much as possible the period to period movements subject to the constraints of the annual benchmark
- To ensure, for the forward series, that the sum of the four quarters for the current year is as close as possible to the unknown future annual data
- Note that the short-term movements in the series are the central interest of QNA, about which the indicator provides the only available explicit information

Notes:

1.4 The Proportional Denton Method



The Proportional Denton Method (Basic version)




$\text{Min } \sum_{t=2}^T (X_t / I_t - X_{t-1} / I_{t-1})^2 \quad \text{for } t=1 \dots 4y \dots T$

Under the restriction that, for flow series,
 $\sum_{t=4y-3}^{4y} X_t = A_y, \quad \text{for } y = 1 \dots Y$

Where

- t is time;
- X_t is the derived QNA estimate for quarter t;
- I_t is the level of the indicator for quarter t;
- A_y is the annual data for year y;
- Y is the last year for which an annual benchmark is available; and
- T is the last quarter for which quarterly source data are available.




1.5 The Proportional Denton Method



The Proportional Denton Method (Basic version)

- Implicitly, the Proportional Denton Method (PDM) constructs from the annual observed BI ratios a time series of quarterly BI ratios that is as smooth as possible.
- For the forward series, the BI ratios are kept constant and equal to the ratio for the last quarter of the last benchmark year (an implicit forecast of BI ratio)




1.6 The Enhanced PDM



The Enhanced PDM

- Need to improve the estimates for the most recent quarters (the forward series)
 - to reduce the size of later revisions
 - the later quarter estimates are typically of the keenest interest to users
- Can be achieved by incorporating information on past systematic movements in the annual BI ratio.

1.7 The Enhanced PDM



The Enhanced PDM

- In the basic PDM:
 - Use of BI ratio from the last quarter of the last year is an implicit forecast of the annual BI ratio
- Denton technique can be enhanced by adding a forecast of the next annual BI ratio

1.8 The Enhanced PDM

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The Enhanced PDM, *Constructing BI ratios*

- To produce a series of estimated quarterly BI ratios taking into account the forecast,
- The same principles of least-square minimization used in the Denton formula can also be used with a series of annual BI ratios that include the forecast
- Once a series of quarterly BI ratios is derived, the QNA estimate can be obtained by multiplying the indicator by the estimated BI ratio ($X = QBI * I$)

1.9 Use of XLPBM or BENCH

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Use of XLPBM or BENCH

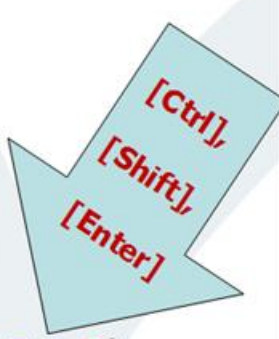
The command syntax of **XLPBM** (or **BENCH**) is:

= **XLPBM** (*Quarterly series,*
Annual series,
Bench Method (optional),
Extrapolation (optional))




Bench Method :
1 for Denton; 2 for Cholette-Dagum

Extrapolation :
B/I ratio

=Bench(G5:G48,B5:B15,1,0)




1.10 Summary and practical exercise



Summary and practical exercise

- While national accountants are usually reluctant to make forecasts, all possible methods are based on either explicit or implicit forecasts,
- Implicit forecasts are more likely to be wrong because they are not scrutinised.



1.11 Thank you



Thank you!

Integrated Economic Statistics to Support 2008 SNA Implementation