Production in Construction Denmark

Construction Statistics

Activity 1.3.4

21.-25. of Januar 2013

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Agenda

1. Introduction

- Presentation of contents

- Different methods (Guidelines for compiling…)

- EU-demands (with proposals)

2. Calculation of IPC

- Basis: National Account

- "New" Index of Produktion in Construction (IPC) (volatility and revisions!)

3. Conclusion/Questions

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Different Methods!

Report: Guidelines for compiling the monthly Index of Production in Construction, Eurostat 2011-edition

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EU-demands 1

Scope: Divisions by NACE, F, 2 dig.
(-CC) - compulsory for S and L:

1. <u>Total construction</u> (var. 110)
    /except.: Under 1% of value added
    i EU -> only total construction (=F)

2. <u>Building construction</u> (var. 115)

3. <u>Civil engineering</u> (var. 116)

EU-demands 2

Form:

- As index and in working-day adjusted form (Demetra, Calendar effects, Tramo-Seats)

- Unadjusted – now compulsory

- Seasonally adjusted – to use national data ("spin-off" from WDA)

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EU-demands 3

Referenceperiod:

- Monthly/except.: Under 1% of value added i EU -> only quarterly

Deadlines for data transmission:

- One month and 15 calendar days after the end of the reference period /minus the15 days more for S + L

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EU-demands 4

6 July 2005: change of Regulation

- Referenceperiod: Monthly for S and L

- First reference period: January 2005

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Basis: National Account

- IPC is based on the quarterly publication of National Account (NA), gross value added in Construction

- Construction = Nace F: Defined by function -> delimited on basis of the final product (ISIC, rev. 4)

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The generel method:

- The gross value added in Construc-tion is calculated (at constant pri-ces) as the difference between the output (value of production) and intermediate consumption (value of input)

- Measures the volume trend in value added at factor cost

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The value of production (output)

The production value are calculated for:

1. Other production (0,25% in 2005)

2. OIAM-system (4,49%)

3. Classic norm-based construction (26,62%)

4. Repair of buildings (41,89%)

5. Moonlight, repair and maintenance (2,06%)

6. Repair of civil engineering (7,20%)

7. IM-system (17,50%)

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Classic norm-based construction/1

= all new construction of dwellings and private non-residential buildings for production, admini-stration, etc.

Method: Floor space square meters (from construction statistics) multiplied by esti-mated square metre prices (surveys)

(for public new construction: Account data)

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Classic norm-based construction/2

Floor space square meters:

- Dates for started and completed for all individual buildings (period)

- Dispersed on all days/period formed (quarter)

Estimated square metre prices

- The price pr. square meter for different types of buildings (= norm-price)

- Adjusted by Construction Cost Index, corrected for a yearly development in productivity (estimated to 1%)

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Repair and maintenance of buildings/1

= Capital repair (investment) + ordinary, regular maintenance (intermediate con-sumption)

Method:

1. Established 2 estimates: *supply* (em-ployment) and *use* (accountinf.)

2. By different calculations and estimates established a total value for R+M

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Repair and maintenance of buildings/2

Supply: (total, consist of 4 elements)

1. Purchased maintenance: *Cost for crafts-man: number of employed craftsman x an average output pr. employed (benchmark + adj. by Construction Cost Index)*

2. Do-it-yourself capital repair of dwellings: *Estimated on basis of Household budget survey. Contain values for purchase of products used for capital repair.*

- *An imputed element for wages is added (EU requirement).*

Repair and maintenance of buildings/3

3. Purchase of products used for in-house made ordinary repair of non-residential buildings: *Estimated as share of the business-sectors total cost for ordinary repair (combined in-house made and purchased).*

4. Purchase of products used for in-house made ordinary repair of dwellings: *Estimated as share of total cost for ordinary repair (combined in-house made and purchased).*

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Repair and maintenance of buildings/4

Use-side grouped in:

- Renting of residential dwellings
  - *Source: accounts from Non-profit building societies.*

- Owner-occupied dwellings
  - *Source: Household budget survey.*

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Repair and maintenance of buildings/5

- ## Non-residential buildings:
  - *Source: Structural Business Statistics (information on total value of inter-mediate consumption) combined with special surveys on decomposition of intermediate con-sumption (share of ordinary maintenance). Split between type (buildings or other structures) of ordinary maintenance are based on size of capital stock of buildings and other structures.*

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Moonlight, repair and maintenance

= the value is indicated by the "wage" paid for the work

Method:

- Calculations are made by a benchmark for 2004 which is adjusted

- Source: detailed interviews by telephone (also used to adjustments)

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Repair of civil engineering

= a part of the total cost for R + M

Method:

- The total cost is determined from the supplyside

  - *Sources: Structural Business Statistics (information on total value of intermediate consumption) combined with special surveys on decomposition of intermediate consumption*

- Split between type (buildings or other structures) of ordinary maintenance are based on size of capital stock of buildings and other structures.

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IM-system

= investments by general goverment or units owned by general goverment in building for business and civil engineering

Method:

- Sources: Account statistics private firms and the public sector
- The statistics are split up into types of investments

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Gross value added/1

= The value of production minus the value of input (materials for own use, etc.)

The total gross value added for the con-struction sector is to be find in the account statistics (need to be supplied with the value of do-it-yourself-work)

The problem is to split up the total!

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Gross value added/2

The gross value added are calculated for (to match the estimates of the Production value):

1. New construction of buildings

2. Repair and maintance

3. Civil engineering works

4. Raw material consumption in the construction industry

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Gross value added (GVA)/3

Dividing up in branches:

- Source: A benchmark which is up-dated by the total development in GVA and production values for the indivial branches in the construction sector

- Raw material consumption in the construction industry

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Gross value added/4

Structure of input:

- The total value of input = a residual (GVA and PV are knowned)

- Source: Several ad-hoc analyses of cost structur (primary yearly surveys/pur- chases of commodities and services)

- Important: Because different deflators and product compositions influenced the calculation i fixed prices

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Gross value added/5

- Send to me, <u>quarterly</u>!!
- Converted to <u>indices</u> (- WDA)
- <u>Split up</u> in total, construction and civil engineering
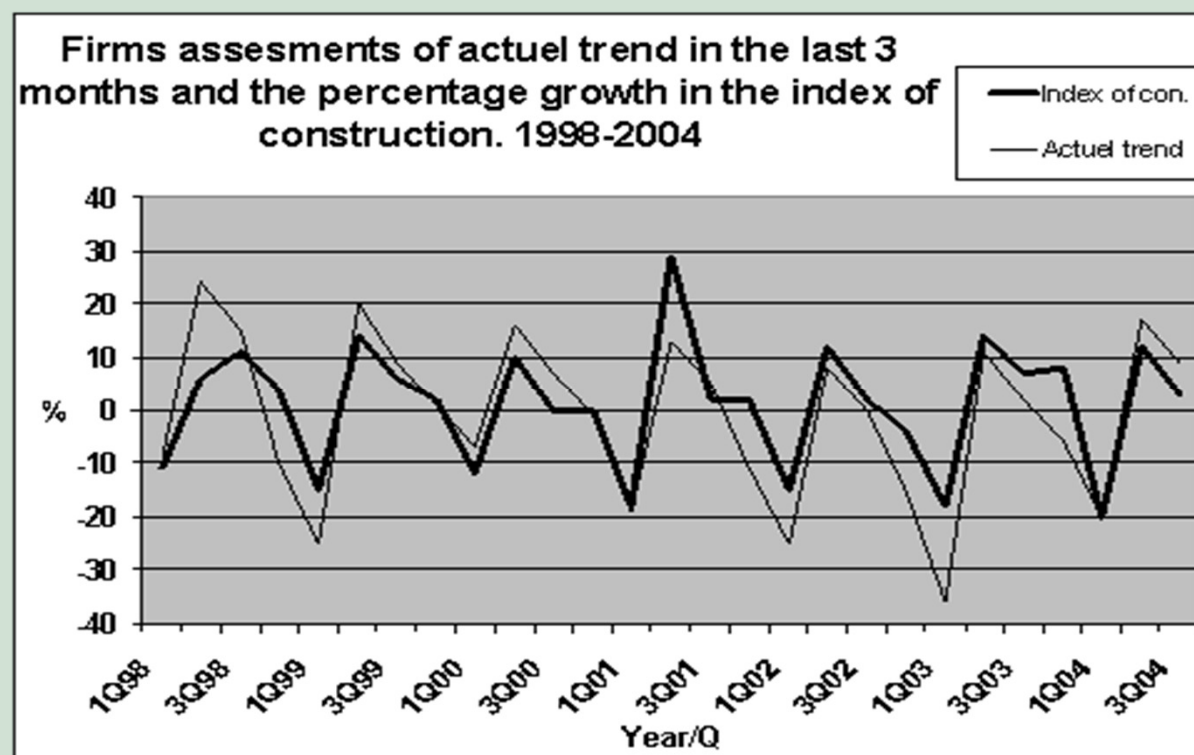- <u>Revisions</u>: the quarters in the most recent 2 years
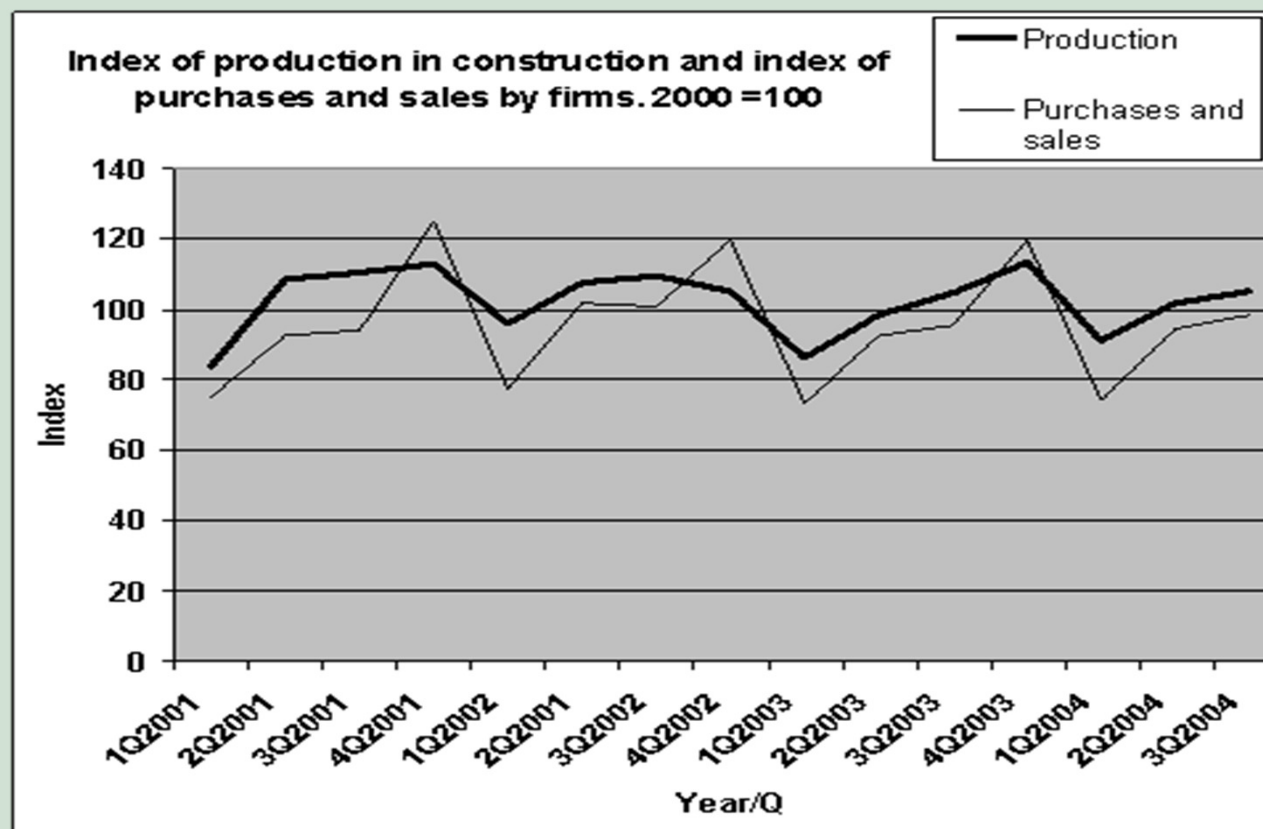
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IPC 1

Considerations and analyses:

- The starting point: The quarterly value added from NA is a reasonably good indicator – quarterly!

- Need a supplementary source to estimate a monthly level (intra- and extrapolating)

- Analyses: Building activity, Construction employment and Purchases and sales by firms (= best method/R^2 = 0,83)

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IPC 2

Firms assesments of actuel trend in the last 3 months and the percentage growth in the index of construction. 1998-2004

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IPC 3

IPC 4

Purchases and sales from firms (FIKS):

- Based on monthly payment of VAT
- Enriched with informations from the Danish Business Register (informations on the firm + legal firm?)
- Missing values: make estimates/last report
- Use: Domestic sales in Construction industry, current prices and seasonally adjusted

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IPC 5

Challenges:

1. Differences in the populations (only main industries in FIKS)

   -> **presumed common trends**

2. Current prices (FIKS) vs. constant prices

   -> deflate with Net price index

3. Considerable seasonal impact in FIKS

   -> **seasonally adjusted domestic sale**

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IPC 6

The model:

- Based on the existing quarterly index of production from National Accounts

- The most recently quarterly index for Gross Value Added from NA determined both the level/total and the distribution on subindex for the estimating ahead

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IPC 6 – cont.

- FIKS: The relative distribution of the monthly figures form the basis of the distribution for the subsequent months

- Basically: The preliminary figures are estimated as a simpel projection of the quarterly index of production by means of the percentage changes in FIKS

IPC 6 – cont., again

- Revisions: The most recently quarterly index for Gross Value Added from NA adjust the last quarter to the correct figure (for the moment!) and FIKS adjust the months in the quarter.

- Revisions are made back for the total serie (Jan. 2001) – also with updated distribution keys

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EUROSTAT

Complain of large volatility and revisions in IPC (all member states!):

- Task Force, 2010-11 (Roberto)

- Intension: Finding a best practice

- Result: A wide variety of methods/not able to identify a single best method -> rank the various methods (A = best, B = acceptable and C = should be avoided)

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Danish's experience

Main reasons for volatility and revisions in the danish IPC:

1. NA made revision to all quarters in the most recent 2 years every time

2. Using seasonally adjusted domestic sale => influences the total timeseries

3. Presumed common trends in all activities in the estimations => reality may be different!

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IPC 7

Dissemination:

- Not published in Denmark

- Send to Eurostat – approximately 60 days after the end of the reference month

- Both unadjusted and WDA-adjusted index

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