E GDP in volume terms

National Accounts Workshop

Trinidad and Tobago

11 – 17 June 2016

E GDP in volume terms

- If GDP at current prices rises by 20% - is that a good thing?

- Volume measures enable "real" growth to be measured – it strips out the price effect from values

- Why do we want volume measures?

- To measure how the economy is "really" doing

E GDP in volume terms

- National accounts is not just GDP

- There are other important measures such as

- Disposable income of households

- Especially "real" disposable income of households !

E GDP in volume terms

- Changes in the structure of the economy are best measured in volume terms (at constant prices)

- If estimation methods depend on ratios, then ratios at constant prices are more dependable than ratios at current prices

- For example, the ratio of intermediate consumption to output is likely to be more stable at constant prices

E GDP in volume terms

- Volume measures are particularly important for quarterly estimates in the national accounts

- Analysing the movement of Household consumption over time is best carried out in volume terms

- Changes in Household consumption are used to measure "changes in living conditions" private consumption.

E GDP in volume terms

- Analysing the components of volume change in Household consumption is important

- The growth and relative change in items such as housing, education, food, general expenses are taken as indicators in welfare analysis

E GDP in volume terms – the theory

- Changes in the value of goods and services can be factored into two parts

- Change in price

- Change in volume

E GDP in volume terms – the theory

- Example

- Householders ate 3 thousand dollars last year

- This year we ate 5 thousand dollars worth

- If price last year was a dollar an orange, we ate 3 thousand oranges

E GDP in volume terms – the theory

- If the price in the second year rose to 2 dollars an orange, then the number of oranges eaten fell to 2 thousand 5 hundred

- We are using the relation for an item that

- Value = price x quantity

- v = p x q

E GDP in volume terms – the theory

- So if we can identify appropriate prices, we can strip out the inflation effect by "deflating"

- This uses aggregate prices to deflate aggregate values

- The estimates derived are not strictly quantities – they are volume estimates

E GDP in volume terms – the theory

- [Item 8.2.1 Measuring GDP E in volume terms.docx](Item%208.2.1%20Measuring%20GDP%20E%20in%20volume%20terms.docx)

- Paragraph 10 onwards

E GDP in volume terms – the theory

- Principles
- Work at the most detailed level possible

- Price indices are usually an approximation to the ideal form (Paasche)

- In practice, they are usually a chain-linked annual Laspeyres

- Experience suggests that this is sufficiently close to the Paasche form to allow deflation at an aggregate level (volume = value / price)

E GDP in volume terms – the theory

- Three methods to estimate volume change in national accounts

- 1. Quantity revaluation – homogeneous products can be simply valued at base year prices
- Volume(t) = Q (t) * base year price

- 2. Deflation – see next slide

- 3. Volume extrapolation – base year value is updated using a volume index (based on indicators of real output or input)

E GDP in volume terms – the theory

- Deflation
- Divide the current price value by an appropriate price index to obtain a volume measure (constant price measure)

- Each value is deflated by a price index relevant to the chosen reference year (usually the base year)

- Deflation should be carried out at the most detailed level possible

E GDP in volume terms – the theory

- Prices used to deflate

- Producer prices (factory-gate prices)

- PPIs for services are difficult to construct – often model contracts must be used (e.g. charge for cleaning set number of windows), or wage rates change as a proxy

E GDP in volume terms – the theory

- Consumer prices - Measured through the Consumer Price Index (CPI), and full use should be made of all component detail underlying the aggregate CPI

- Construction price index – either measures of price change in inputs or outputs of construction activity. Required to deflate capital formation estimates of construction output, given the difficulty in establishing prices for contruction final products

E GDP in volume terms – practice

- Imports and exports prices

These are difficult to measure directly and usually we must resort to

Unit Value Indices (UVIs)

UVI – for a ship-load of cars = Total value / number of cars

Subject to product mix changes, so watch out for sudden change – real price or product mix effect?

E GDP in volume terms – practice

- Final Consumption Expenditure of Households

- Use the CPI

- Rent of owner-occupied dwellings – use an index of rents for similar dwellings

E GDP in volume terms – practice

- Government and NPISHs

- Deflate the value of costs by appropriate components of the CPI

E GDP in volume terms – practice

- Inventories

- Only do areas where large change is possible

- Use PPIs

E GDP in volume terms – practice

- GFCF

- Use supply-side prices (PPIs, UVIs)

- Treat construction as a special case (deflate inputs, including labour)

- Do it by detailed type of GFCF

E GDP in volume terms – practice

- Imports and exports

- Prices if you have them, otherwise UVIs at detailed level

E GDP in volume terms – practice

- Other ways

- Use the prices of the exporting country

- Global markets mean that prices move the same across the world – e.g. computers, mobile phones etc.

GDP E volume terms

- Good luck