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Unbundling and asset base valuation issues

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Part I – Accounting unbundling

Accounting unbundling in the European Union

- The Gas Directive 2009/73/EC provides the basic rules for administrative unbundling and transparency of the internal market in gas
- General goals of accounting unbundling:
 - to guarantee transparency in the economic results of every gas activity
 - to avoiding cross subsidization between business lines (regulated, non regulated, monitored, non gas) undertaken by the same company or group of companies
 - open market to competition and achieve transparency, preventing abuse of monopolistic or dominant position

Specific goals of accounting unbundling in the EU

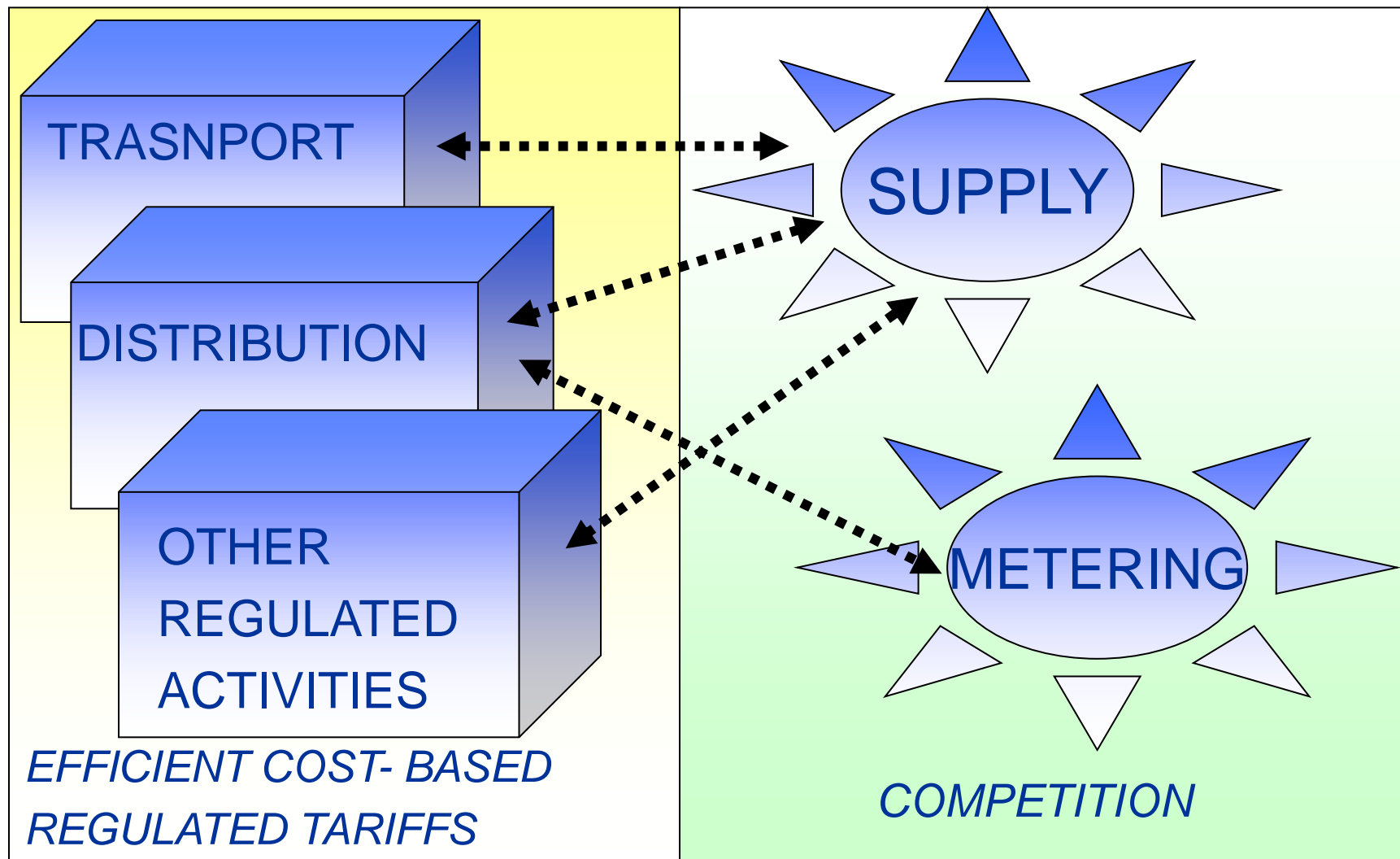
- To avoid cross subsidies between regulated and competitive activities
 - integrated suppliers are interested in charging as many costs as possible on the regulated part, so that infrastructure tariffs are larger and their competing branch is lighter
- To monitor profitability in each activity, with a view to setting new tariffs or productivity improvement factors
- To set regulated end customer supply prices, if any
- To benchmark company performances, with a view to foster efficiency

Accounting unbundling in the EU – Main rules

- Article 31 of Directive 2009/73/EC establishes that all gas companies must:
 - publish and audit the balance sheet, pursuant to EU accounting standards and forms (directive 78/66/EC);
 - keep separate accounting for their gas activities, as if each activity were undertaken by a separate company
 - but, only in their internal accounting (not to be published) - *critical issue, US more transparent*
- Companies listed in the stock exchange must use the International Financial Reporting Standards (IFRS)

Which gas activities are subject to the rules of accounting unbundling ?

- Monopolistic or essential activities :
 - Transport, Distribution, Storage, LNG terminals
- For each of these, companies must prepare separate balance sheet and a profit and loss summary, *as if* separate companies
- Any remaining gas activities must be jointly unbundled from the monopolistic activities, and reported in consolidated accounts:
 - Production, Import, Trading, Supply

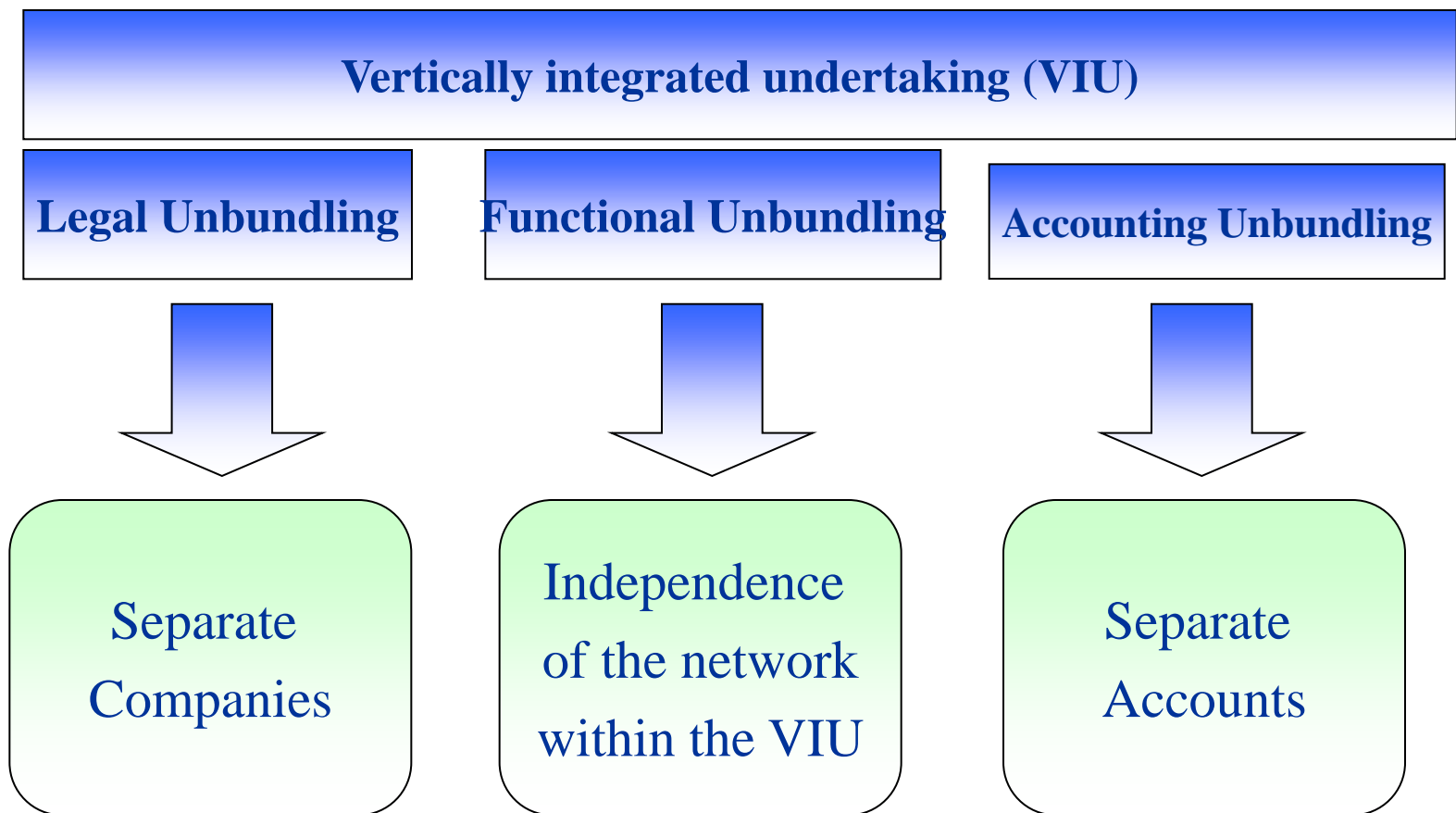


What accounting unbundling cannot

- does not ensure non-discriminatory conditions in network access to all operators, in particular to the new entrants
- does not guarantee effective transparency of technical information and data concerning the transport and distribution network (capacity, balancing, etc.)
- does not remove barriers to customer switching between gas suppliers (e.g. metering problems , etc.)
- Stronger unbundling needed to achieve level playing field



Unbundling Regime



Unbundling levels

- Accounting
- Management (Chinese walls)
 - Compliance officer
 - Independent Transmission Operator, a recent, yet untested EU concept of a company under strengthened regulatory control
- Arms' length operations (U.S.)
- Independent System Operator – Legally independent but without assets
- Legal separation with assets
- Ownership
- Control

Basic technical rules of accounting unbundling - 1

- Direct operating costs (and revenues) must be allocated directly to each activity
- Services and transfers from the central structure and staff of the company to the different activities must be recorded in the internal accounts and allocated to the activities through the “cost driver system”
- Cost drivers used by the companies must be chosen from a pre-determined standard list

Example of drivers for central & indirect cost allocation

Central and indirect charges	Cost drivers applicable to activities
General management and legal services	Direct operating costs of the business line
Accounting and financial services	Number of transactions
Human resources management	Hours of work
Computing services	Cost of technical assistance
Telecommunications	Registered traffic in minutes
Engineering services	Hours of engineering input
Materials purchases and management	Number of warehouse operations (loading and unloading)
Transport logistics	Hours of vehicle utilization by type of vehicle
Facility services and other	Number of employees assigned

Example of cost categories allocated to activities

Cost items	Operating activities					
	Plant operation (including telecontrol)	Network maintenance and repairs	Connections/ disconnections	Customer safety	Other	Total
Natural gas	0	0	0	0	0	0
Labour	260	515	150	180	20	1,125
Materials	120	490	80	140	32	862
Transmission and distribution fees	0	0	0	0	0	0
External and internal services	330	60	35	274	0	699
Technical depreciation	530	0	0	0	0	530
Leasing and rental of assets	90	0	0	0	0	90
Other operating costs	80	20	15	35	90	240

Basic technical rules of accounting unbundling - 2

- Internal services and transfers between the activities to be recorded in the internal accounts and valued at their market or regulated price (to avoid cross subsidies)
- Services to a gas activity provided by a non-gas company or activity belonging to the same group, must be regulated and valued by a specific internal contract
 - Market tendering of services is the preferred approach
- Unbundled balance sheets and accompanying reports (containing information on investments, etc.) must be audited by an independent chartered accountant and sent to the regulator

Basic technical rules of accounting unbundling - 3

- The regulator should have full access to minor forms of affiliation and to economic interests between the network company and competitive business, to seek any form of influence on daily or major investment decisions is possible
- If companies buy or sell services under different competitive conditions, cross subsidies are likely
- Calculation of *stand alone costs* may help understanding if any subsidies occur
- ERGEG (former EU energy regulators' & EC coordination group) issued *Guidelines of Good Practice on Accounting Unbundling*

Part II – Asset base valuation

Asset base valuation methods

- Please refer to Presentation by Dr. Rajnish Barua, “Regulatory asset base” and Prof. J. M. Mwenechanya, “Rate of return regulation”, Accra Seminar, April 26-28, 2011
- EU experience fully consistent with their approach
- In addition, this presentation will provide:
 - Short summary of theoretical issues
 - A caveat on new investment in gas transportation
 - Comments on actual application in Europe
 - Information about benchmarking approaches

Regulatory Asset Base: valuation methods and their drawbacks - 1

- Careful evaluation of relevant assets by regulator is needed to exclude irrelevant assets → unbundling
- Ad-hoc appraisal:
 - commissioned to auditors
 - may be biased if requested & paid by companies
 - cumbersome & costly if done by regulator

Regulatory Asset Base: valuation methods and their drawbacks - 2

• Official balance sheet (book value):

- may not reflect actual value, as “legal” values may not reflect economical value
 - special re-evaluation criteria may be required
- if original cost, likely below current economic value, due to inflation
- but it may reflect cost actually paid by investor, notably in “transition” economies
- in gas & power most EU industries have been under State control (B, F, I, UK), may have benefited from large investment grants

Regulatory Asset Base: valuation methods and their drawbacks - 3

- Re-evaluated balance sheets (current cost method):
 - need long investment series – if not available turn to MEA
 - affected by price index, to be carefully chosen – general index is better but...
 - neglects technical progress, leading to “too high” values
- Modern equivalent asset (MEA): uncertain impact of technical progress, costs (deflated by CPI) normally diminish over time
- Stock market value: logical circularity with tariff setting process (except if evaluated before regulation)

Regulatory Asset Base: EU experience

- Strong pressure on regulators in case of privatisations!
- Current cost method is the most common approach
 - safest for regulators and companies alike, as it is normally based on objective data
 - estimates are on the high side, but this is often offset in EU by relatively low rates of return (compared to U.S.)
- Modern equivalent asset (MEA): preferred where long investment data series not available or plant & equipment quality poor, e.g. in former centrally planned economies
- Book value rarely used except as a transitional estimate, or if representative of costs actually borne by companies

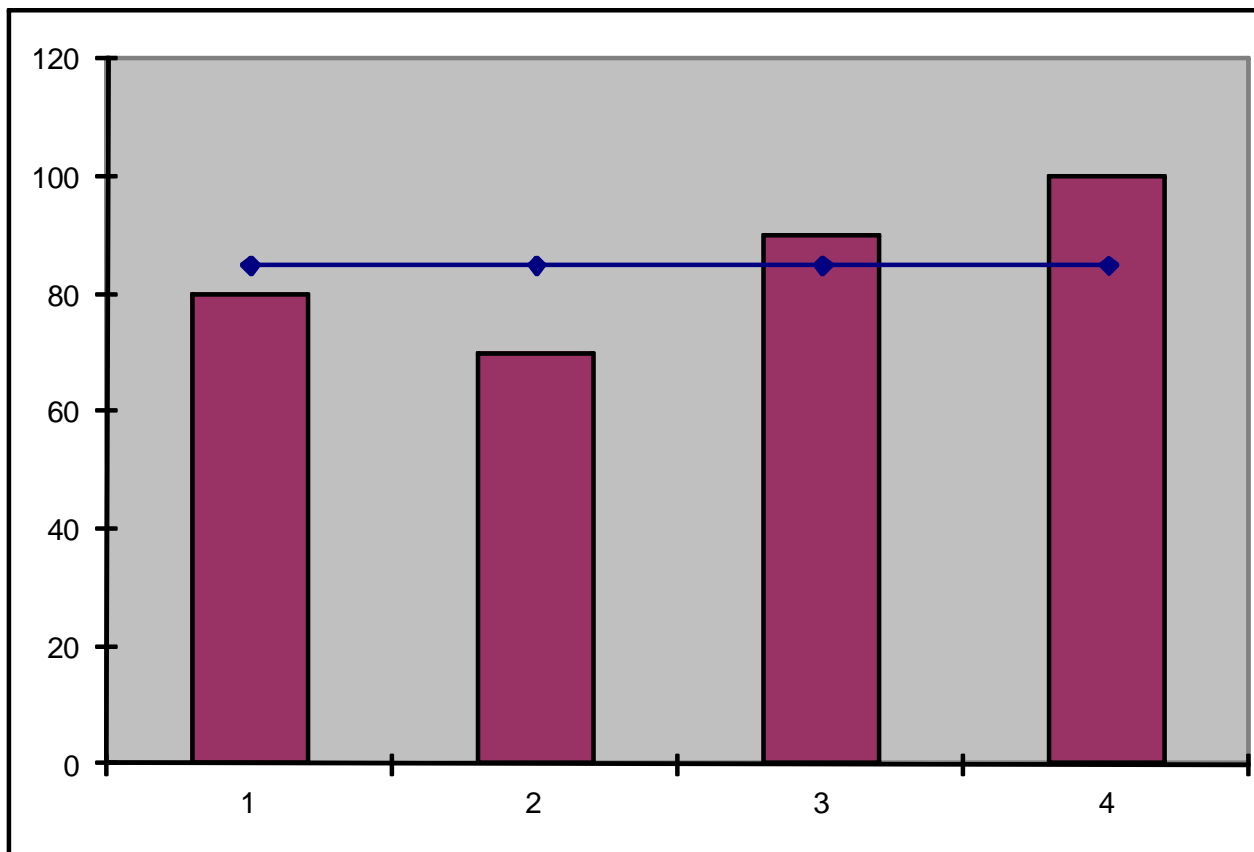
Benchmarking approaches: Yardstick competition

- Used to create indirect competition between local or regional monopolies by comparing their performances.
- With identical operating conditions, assuming Average Cost Pricing, regulator may set:

$$\textit{Price} = \textit{Average (All Benchmarked Firms)}$$

- Price would be independent of individual cost
- Higher cost firms would be fostered to cut their costs, with very limited impact on price
- More efficient firms would earn higher profits

Yardstick competition as incentive regulation



Difficulties of benchmarking: “sticky” assets

- By economic theory incentives should apply to

$$\text{TOTAL COST} = \text{OPEX} + \text{CAPEX}$$

so that companies may adjust use of production inputs

- However CAPEX cannot be quickly adjusted as capital cost of transmission & distribution lives 20 ~ 40 years, only a small part can be modified in the short term
- In Italy, Netherlands yardstick was applied to total cost (TOTEX), leading to problems – firms can argue that inefficiency as inherited in the capital stock is not their fault

Difficulties of benchmarking: cost normalisation - 1

- Yardstick Competition requires identical operating conditions for all firms
- But “there are no identical twins” - Each badly affected company will say that their operational conditions are worse and not adequately considered by the model
- What can we compare: Cost/KWh? Cost/KW? Cost/end user?
- Can correct for the heterogeneity. How?
 - Streamline accounting criteria
 - Analyse cost determinants by regression analysis
 - Define efficiency frontier

Difficulties of benchmarking: cost normalisation - 2

- Different cost accounting criteria by several firms, notably if not subject to private sector cost accounting rules, may hamper benchmarking (e.g. some maintenance costs may fall under OPEX in a firm and CAPEX in another one)
- In Italy, regulator issued a special questionnaire, asked a sample of firms to fill it, with homogeneous criteria
- In the Netherlands, yardstick process became easier after regulatory accounting rules were issued
- In the UK, limited benchmarking of electricity distributors requested substantial accounting re-allocation work

Benchmarking: regression methods

- Technically hard, good specialists needed (statisticians)
- Should preferably use panel data (pooled time series of firms)
- Must identify main likely cost factors (drivers)
- Determinants should include input prices by economic theory but hard to see their effect if no time series available
- It is possible to distinguish inefficiency from statistical errors if good data sets are available (stochastic frontier approach)

Benchmarking: data envelopment analysis

- Advantage: non parametric technique (does not assume normal distribution of errors and shape of cost function)
- Must identify main likely cost factors (drivers) or multiple outputs (e.g. users, peak, energy)
- Find efficiency frontier
- Measure distance of companies from the frontier
- Warning: Often used as software available but properties are uncertain

Benchmarking: conclusions

- Due to technical difficulties, it is normally used to set required productivity improvement rather than actual tariff or revenue level
- Legal framework often requires regulators to use individual data
- Use is often limited to operation costs only
- More common use in distribution. For transmission, international benchmarking involves more difficulties, country specific adjustments likely to be needed
- It may be a source of information for the regulator, but it should be used very carefully

Alternative approach: network reference model

- Strong and experienced engineering expertise needed
- Based on a technical description of utility operations
- Define how an optimal network should be built and operated for a given territory
- Define how its inputs should be priced, by means of standard costs, benchmarks of limited cost components
- Optimization techniques may be used, e.g. optimal investment level towards quality
- Valid check for other benchmarking results

Thank you for your attention!