Bundesnetzagentur

Section 5: Price Regulation

Instruments of Price Regulation

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Agenda

Regulatory Framework

Instruments of Price Regulation

Choice of the Appropriate Price Control Methodology

Regulatory Framework

The framework for National Regulation Authorities‘ regulatory accounting approaches.

§ Framework Directive: 2002/21/EC

Common regulatory framework for electronic communications infrastructure and associated services:

- appropriate cost-accounting methods and consistent pricing of access products
- consistent application of cost model principles
- modern efficient network -> set access prices

§ Access Directive 2002/19/EC

Regulatory framework for the relationships between suppliers of networks and services promoting:

- sustainable competition
- interoperability of electronic communication services
- consumer benefits

§ Access Directive Obligations

Article	Obligation
Art. 9	Transparency
Art. 10	Non-discrimination
Art. 11	Accounting Separation
Art. 12	Access to and use of specific network facilities
Art. 13	Price control and cost accounting

§ 30 Rates Approval

- Rates must not exceed the costs of efficient service provision (CoESP)
- CoESP are derived from long-run incremental costs incl. appropriate mark-up for volume-neutral costs and incl. a reasonable rate of ROCE

§§ 32, 33, 35 Price control instruments

- Cost orientation (more specifically: CoESP)
- Price cap
- Benchmarking
- Cost modelling

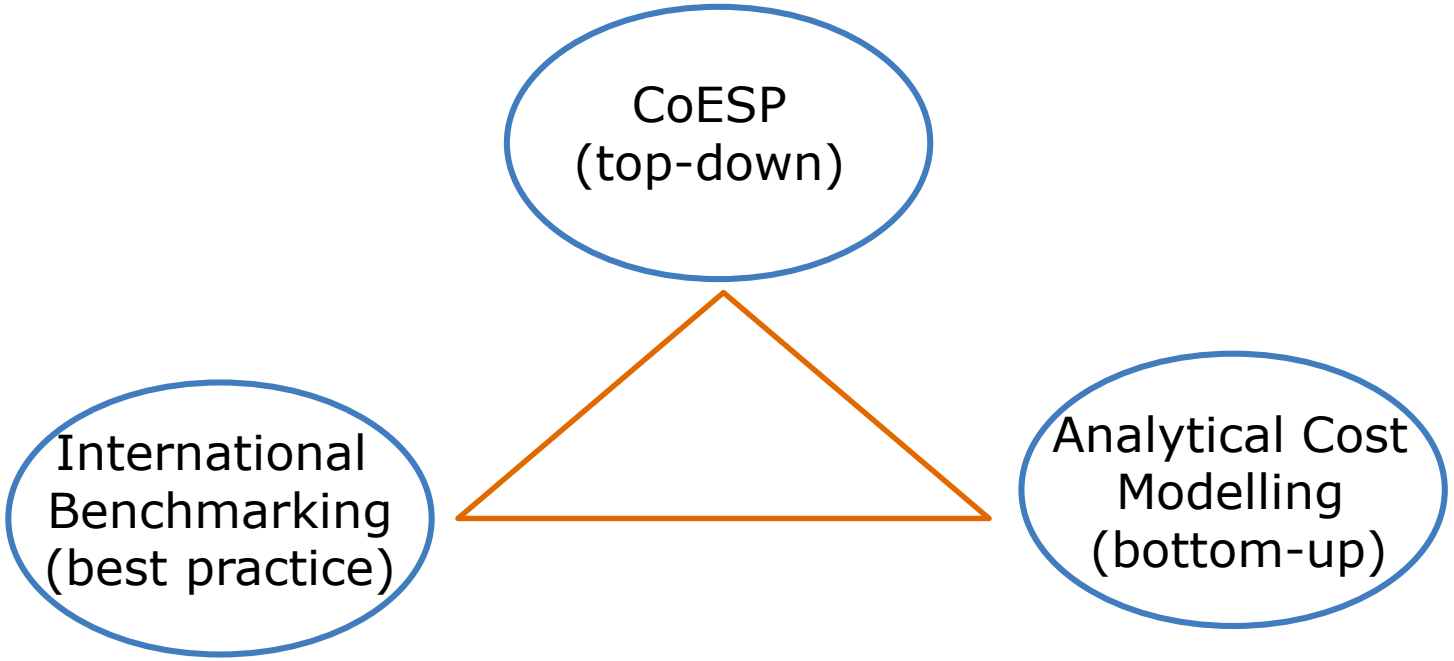
Instruments of price regulation

Instruments of price regulation applied by BNetzA

BNetzA Price Regulation

- The main purpose is the simulation of competitive prices.
- It concerns primarily access and to a lesser extent end user products and services.
- It is effected mostly via ex-ante but also ex-post price control.
- Consistent and transparent methods and standards are applied to ensure predictability and reliability.

Three price control instruments are applied



Signal to market: produce goods/services more efficiently (incumbent); provide goods/services with same or higher degree of efficiency (competitors)

Cost of Efficient Service Provision:

- reflects the long run costs of a service-unit that is produced by an efficient network-operator
- includes the appropriate cost of capital,
- has an appropriate mark-up for common costs
- includes a reasonable return on investment
- estimates a virtual competitive price

Cost of Efficient Service Provision

- relies on regulated cost documentation, derived via a reconciliation statement from the accounting data of audited financial statements (IFRS)
- SMP documentation naturally reflects fully allocated historical costs FCA/HCA
- to implement current cost accounting (CCA), all major assets are revalued with replacement values
- inefficient costs (i.e. over-capacity, over-staffing, excessive wages, wrong allocation of common costs) are eliminated.

Analytical Cost Modelling

- Calculates the structure of an efficient network using future demand estimates
- What are the costs incurred by an efficient operator if the network was rolled out today?

Advantages	Disadvantages
allow for latest technology consideration	requires high degree of expert knowledge
compatible with forward-looking and current cost accounting approaches	highly technical input-parameters
may be consolidated in hybrid models	„reality checks" required

International Benchmarking

- a best practice approach comparing national or international operators
- is typically used as supplementary information (“reality check”)
- serves as a final measure in cases where the applicant’s cost documentation is insufficient and / or cost models are not available / feasible.

Price control methodologies currently not applied

- Price-cap: the regulator sets a cap on the price that the SMP operator may charge for a given service or basket of services (basic formula is CPI – expected efficiency savings). Reviewed every 3 years.
- Retail-minus: the wholesale price charged for a given service is set by the regulator in a certain relation to the price of the underlying retail service.

Supplementary tools:

- Margin squeeze test (ex-ante or ex-post): does the incumbent‘s tariff allow an equally efficient downstream operator to earn a normal profit?
- Reasonable efficient operator test: does the incumbent‘s tariff allow a reasonably efficient downstream competitor to earn a normal profit?
- ERT: does the margin between the price of the relevant retail product and the price of the relevant NGA-based regulated wholesale access input cover the incremental downstream costs and a reasonable percentage of downstream common costs?

Choice of Price Control Method

Considerations for a regulator when chosing price control methodologies

The regulator‘s choice of price control method is driven by their regulatory strategy, which is dependent on the legal framework and the competitive situation in the national market.

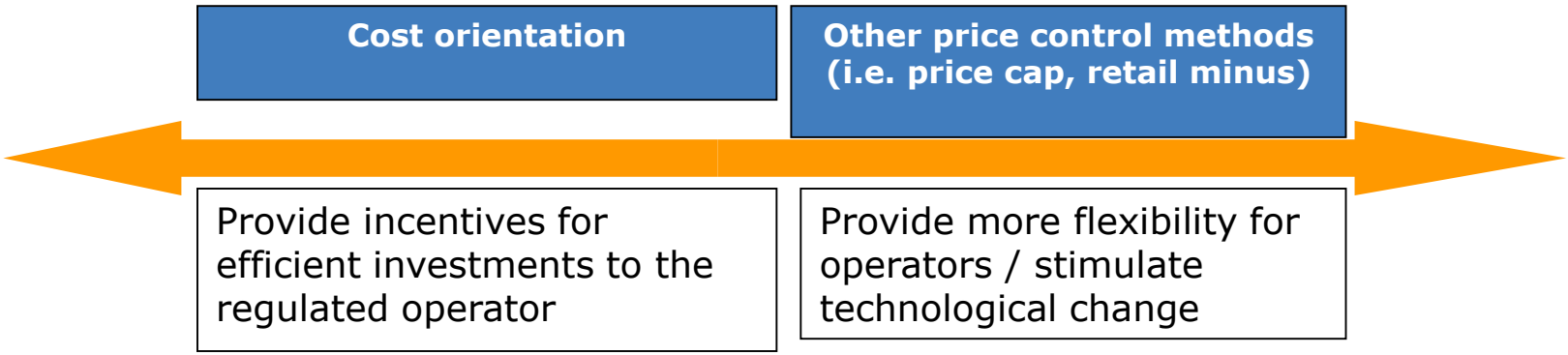
The choice of variants of the following factors influence the level of regulated prices:

- Price control method
- Asset base/asset valuation
- Cost allocation
- Cost annualisation

Price Control Method

Regulators have to assess the relevant price control method in order to set regulated prices:

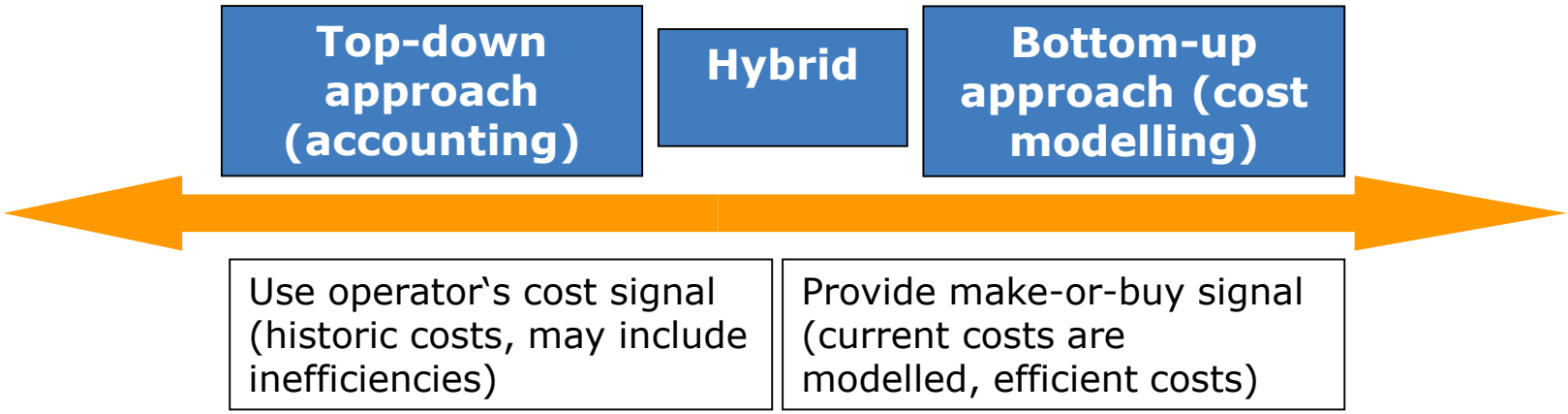
- strict cost orientation means equality of costs and wholesale prices
- less strict cost orientation provides more flexibility to operators



Asset Base/Asset Valuation

The choice of the asset base to determine asset costs can be assumed:

- top-down (TD): historical costs derived from the regulated operator‘s accounts
- bottom-up (BU): the current costs an efficient operator would incur to provide the same wholesale service



Assets are revalued using:

- recent or daily values of replacement goods of the same quality
- recent or daily values of replacement goods of different quality (e. g. modern equivalent assets - MEA)
- index-pricing if replacement value is not observable (e. g. National Bureau of Statistics indices)
- possibly benchmarking prices of various national market-players

Cost Annualisation

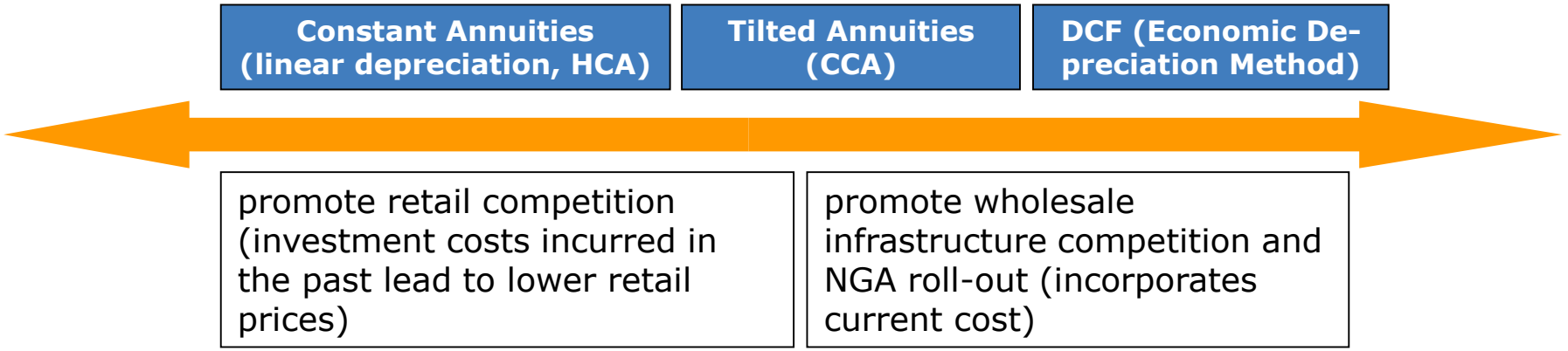
Investment costs (capital expenditure) are recorded for a given year, whereas corresponding assets are employed over time.

Capital expenditure must therefore be annualised in the operator‘s accounts.

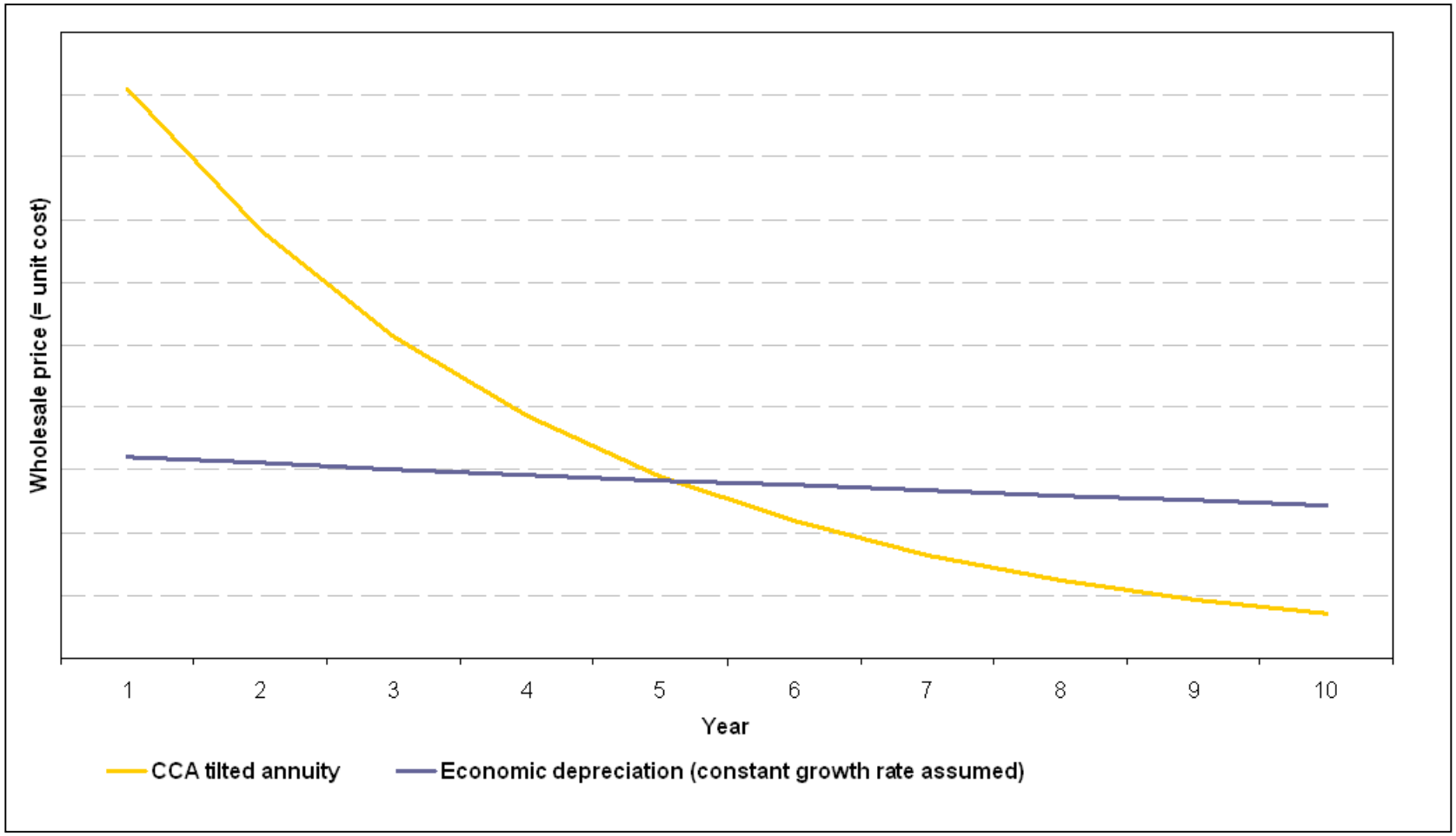
Annualisation spreads investment costs over time based on the asset life, resulting in a series of annualised costs (annuities) for each asset, which correspond to the portion of the investment cost allocated to the year.

Cost Annualisation

- constant annuities: depreciation is not readjusted for price evolution (depreciation increases, cost of capital share decreases proportionally)
- tilted annuities: depreciation is adjusted for price evolution (annuity value changes at the same rate as the price of the asset is expected to vary)
- Economic methods adjust annuities based on the business plan and the expected revenues of the operator = discounted cash flows (DCF)



Effect of different annualisation methods on unit costs



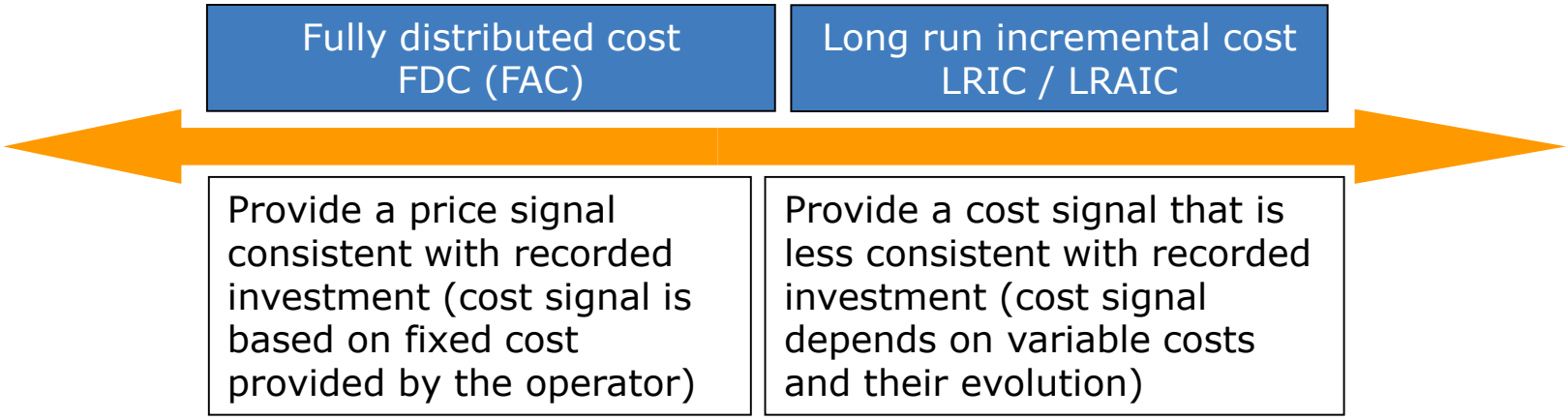
Cost Allocation

This is a major concern for regulators, since Telecommunication operators may provide a number of services, not all of which are regulated, i. e.

- network infrastructure and business units may be shared between different regulated and non-regulated services,
- network (element) dimensioning is partly driven by traffic (first point of traffic concentration), partly by the number of subscribers (dedicated access lines).

Cost Allocation

- FDC/FAC, where a whole set of costs incurred by the operator is allocated to regulated products.
- LRIC/LRAIC, where only costs that would not be incurred if the incremental service was no longer produced by the operator



BEREC Decision Matrix

Intensity of competition / market circumstances	Regulatory objectives: **Push** supply-side, (wholesale market) **promote** network roll-out, efficient investment	Regulatory objectives: **Push** demand-side, (retail market), **promote** broadband take-up
Presence of access competition / alternative infrastructure (cable, mobile etc.)	3 Neutral make-or-buy decision CCA / LRIC, DCF	4 Retail price control Retail minus / price cap
Low access competition / no alternative infrastructure (copper only)	2 Efficient make-or-buy decision CCA / LRIC	1 Low retail prices HCA / FDC

Dynamic Regulatory Path

Intensity of competition /market circumstances	Regulatory objectives: **Push** supply-side, (wholesale market) **promote** network roll-out, efficient investment	Regulatory objectives: **Push** demand-side (retail market), **promote** broadband take-up
Presence of access competition / alternative infrastructure (cable, mobile etc.)	3	4
low access competition / no alternative infrastructure (copper only)	2	1

Excursion: European Experience

How European Member States apply instruments of price regulation (excerpt from 2018 BEREC Regulatory Accounting Report)

Price Control Methods

- Cost orientation is the most commonly used method, applied mainly to legacy products (ULL)
- Retail minus is applied by few regulators, mainly for bitstream and to some extent for VULA products and in one member state for WLR
- Benchmarking is applied by 10 regulators in the termination markets and in one case for duct access and dark fibre
- Price cap is applied infrequently and only in fixed and mobile termination markets.

Supplementary: Replicability Tests

- Retail margin squeeze test is less frequently imposed on legacy products and on access to infrastructure
- ERT is mainly applied to specific access products (VULA and NGA products)

Cost base, annualisation and allocation methods

- CCA is by far the most commonly applied methodology for all markets (exception: HCA is commonly applied to WLR)
- The most frequently used annualisation is the tilted annuity, followed by straight line/standard annuities
- Economic depreciation is applied mainly in termination markets
- Most frequent cost allocation approaches are LRIC (termination)/LRAIC (termination and access), for almost all products/markets
- FDC is the preferred method for the backhaul section and WLR

Cost base, annualisation and allocation methods

- CCA is by far the most commonly applied methodology for all markets (exception: HCA is commonly applied to WLR)
- The most frequently used annualisation is the tilted annuity, followed by straight line/standard annuities
- Economic depreciation is applied mainly in termination markets
- LRIC is – not surprisingly – predominantly applied in termination markets
- Both LRAIC and FDC are applied in access markets
- FDC is preferred for Leased Lines and WLR

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Thank you for your attention ☺

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