BREITBANDINFRASTRUKTURAUSBAU DEUTSCHLAND - EINE KAPITALMARKTPERSPEKTIVE

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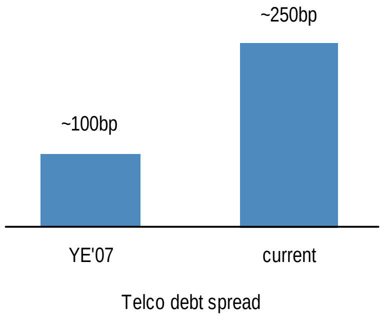
Fibre investments - capital market perspective

- Capital markets have responded positively to past fibre announcements (French operators, KPN, Telefonica)
- While there are good reasons for operators to invest in fibre (mobile broadband, cable, broadband slowdown), opportunity costs have gone up and alternative carriers are funding-constrained
- Governments and regulators can promote fibre investments through
  - Reducing deployment costs
  - Increasing prospective returns
  - Promoting wireless competition
  - Overcoming the funding bottleneck
  - Providing a competitive and reliable framework

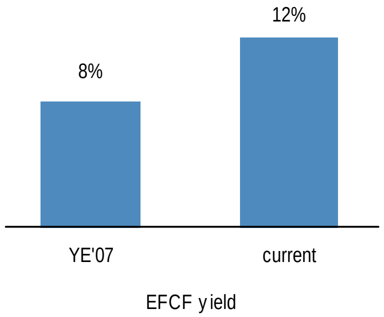
CHALLENGES FOR FIBRE FUNDING

Cost of capital are going up, limiting appetite for fibre

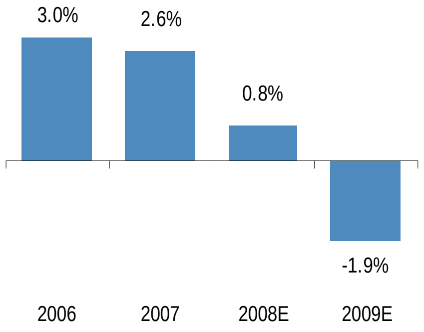
Telco debt spread (bp)



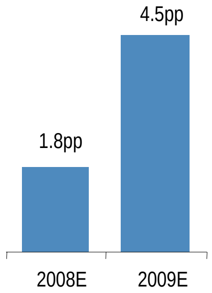
Telco incumbent FCF yield (%)



JPMe Euro Area GDP growth



Growth gap vs. 2007 (pp)



- German infrastructure-based players are well funded for their existing business plans
- However cost of debt has gone up, there is significant economic uncertainty, and recent liquidity crisis urges caution
- Incumbent players (DT, VOD, Telefonica, TI) have to trade off German fibre investment against debt reduction, buybacks (12% free cash flow yield!) , other investments, or acquisitions
- Vodafone and Telefonica operate in multiple other markets
- Independent smaller players likely to struggle to fund fibre; those privately owned may not

Operators build fibre mainly in response to competitive pressure

Fibre - development by country / **Government initiatives**

Country	Incumbent fibre	Incumbent VDSL	Competitor fibre	Cable	Government initiatives
Netherlands	◔	◕	◔	●	Open access fibre projects
Switzerland	◑	◕	◔	◕	
Belgium	○	◕	○	◕	
Spain	◑	◑	○	◕	
Sweden	○	○	◕	◕	Utilities must deploy fibre
Germany	○	◑	◔	◕	
UK	○	◔	○	◕	Duct survey; digital dividend
Portugal	○	○	◔	◑	€800m subsidised credit from government
Austria	○	○	○	◑	
France	○	○	◔	◔	Open access local fibre; duct survey; digital dividend
Italy	○	○	◑	○	
Greece	○	○	○	○	Government with ambitious fibre plans

Potential steps for regulators and politicians

	Relevant fact	Recommendation
Reduce deployment costs	■ Civil works account for 70% of costs ■ Duplication of civil works makes no sense	■ Promote/legislate duct access/infrastructure sharing ■ Don't restrict to incumbents - municipalities and utilities own and/or deploy critical infrastructure
Increase prospective returns	■ Incumbent 'cannibalises' its own copper ■ Competitors primarily motivated by LLU/TAL substitution	■ Maintain investment incentives through suitable LLU charges ■ Allow for risk premium to calculate wholesale prices
Promote wireless competition	■ Wireless broadband substitution motivates fixed fibre investments ■ Wireless broadband can mitigate digital divide ■ 'Personal broadband'	■ Allocate 'Digital dividend' spectrum to telecoms operators
Overcome funding bottleneck	■ Funding is limited	■ Provide access to cheap credit
Provide competitive regulatory framework	■ New EC framework leaves scope for national discretion (e.g. Spain) ■ Regulation has a time-consistency problem	■ Ensure that German investment context is 'attractive in relative terms' ■ Provide a reliable medium/longer term (>2 year) framework