

USO Net Cost in the postal sector Where do we stand?

Economic theory and practical implementation

Bernard Roy



1. The economics of USO and net costs calculations

- The economic justifications of USO
- What is the net cost of USO?
- Why does the need to estimate the net cost of USO appear now?
- Literature
- From theory to implementation

2. Practical estimations of postal USO net cost

- Profitability cost applications in UK, Norway, Denmark and USA
- Alternative methods based on unprofitable flows: the Italian and Belgium cases

3. Cross-country comparisons of the net cost of some constraints

- Cross-comparison of the net cost of delivery frequency
- Cross-comparison of the net cost of the accessibility to outlets constraint



The economic justifications of the existence of USO

- USO = provision of services at a given quality level, to all users, at “affordable” prices throughout the territory, permanently.
- Cremer et al. (2008) justify the implementation of USO by examining its social costs and benefits.
- According to these authors, USO is
 - A mean to internalize externalities (postal sector is a platform between firms and customers = two sided markets)
 - A form of redistributive pricing policy (towards high-cost customers or addressees)
 - A channel to supply a public good (postal network as a mean to “bind the nation together”)
 - An instrument of regional policy (uniform pricing can be a way to subsidize rural customers, in order to encourage households and firms to locate in rural areas)



The USO generates social and private costs

- From a social point of view, USO have a cost:
 - Distortions in prices and competition
 - Distortion in quality (overprovision)
- From a private point of view, the USP entails a net cost if in the absence of USO, the USP would have operated differently and gained a higher profit:
 - Not cover all the country
 - Provide a different level of quality
 - Provide the same level of quality but at a higher price
 - ...
- Those social and private costs are balanced with benefits of USO.



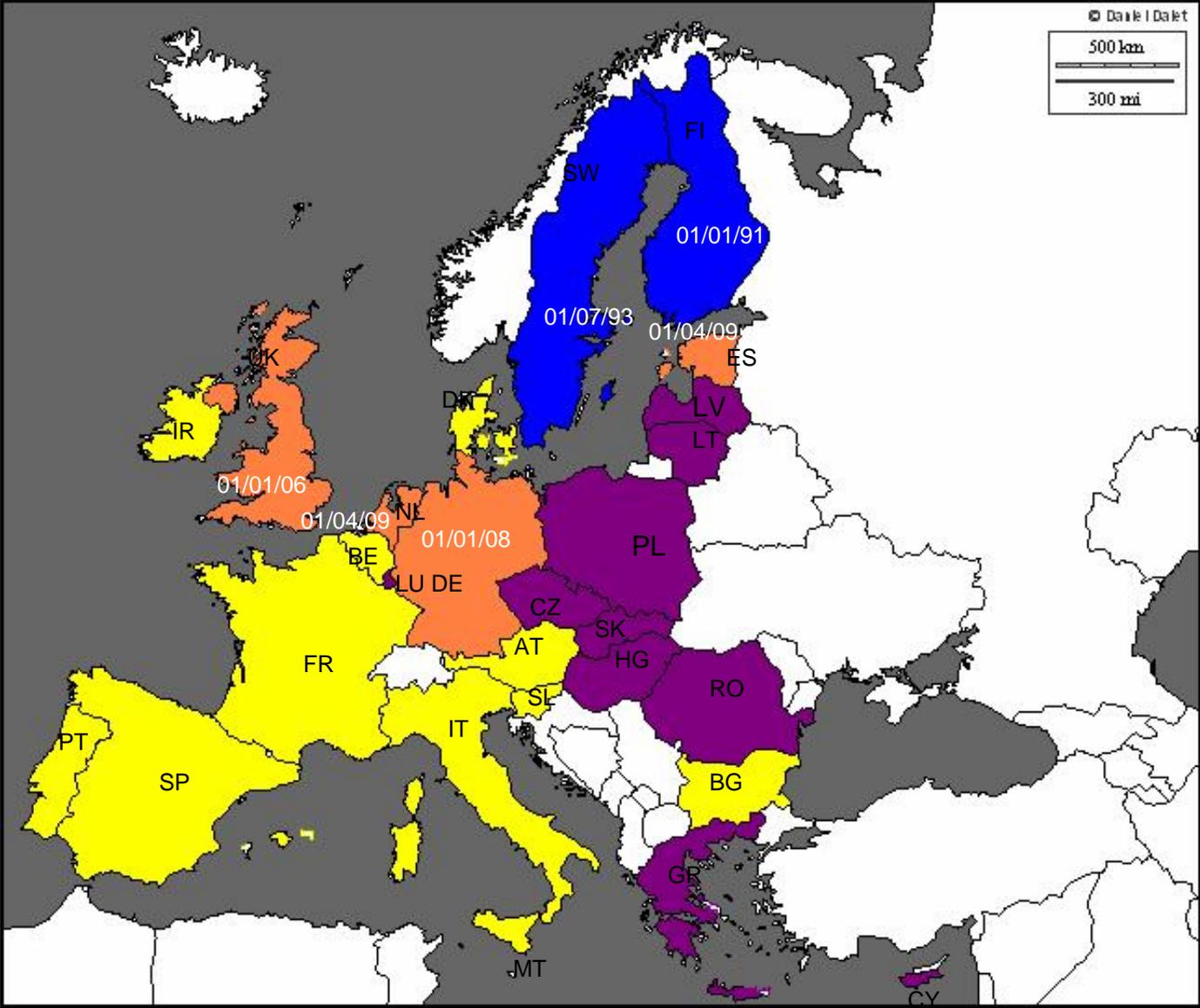
Why does the need to estimate the net cost of USO appear now?

- The calculation of USO net cost is linked to the need of compensation: it must be calculated when the USP seeks to be compensated.
- From 1st January 2011, the postal market will be fully liberalized → raises level playing field issue.
- Net cost of USO is not necessarily an unfair burden.



Liberalisation of national mail markets

-  Markets fully liberalised in the 90's
-  Markets recently fully liberalised
-  Full market opening on January 1, 2011
-  Full market opening on January 1, 2013



Key references in postal literature (non exhaustive list)

- Method of calculation:
 - Net avoided cost: NERA (1997),
 - Entry Pricing: Rodriguez and Storer (1999)
 - Unprofitable flows in FDC : Gallet et al. (2001)
 - Profitability cost: Panzar (2000), Cremer et al. (2000, 2001), Boldron et al. (2009), Crew and Kleindorfer (1998, 2000), Jaag and al. (2009)
- Estimation of net cost of universal service constraints:
 - Bergum (2008)
 - Ambrosini et al. (2005)
 - Boldron et al. (2006, 2010)
 - Bradley et al. (2008)
 - Buser et al. (2008)
 - Cohen et al. (2010)
 - Copenhagen Economics (2008)
 - Frontier Economics (2008)
 - Jaag and Trinkner (2010)



The implementation of Profitability Cost approach

- 3rd Directive recommends profitability cost approach + costing by elements (see annex1 & recital 29)
- Define a counterfactual scenario in a competitive environment where there is no USO, i.e.
 - USP's behavior in terms of process (collection/delivery frequency, coverage of the territory, accessibility...) and commercial strategy (price, quality, product range...)
 - Contestable markets and competitors' behavior
 - Reaction of demand: impact on total demand and distribution of market shares
- In theory, the counterfactual approach includes all intangible benefits (via effects on demand function – price elasticity of demand).



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Synthesis

	Methodology to calculate the net cost of USO	Estimation (% USP's turnover)
Norway	Profitability cost (definition of a counterfactual scenario)	1.5% (2006)
UK	Profitability cost	Frontier Economics (2008): Costing of some elements (QoS, frequency of delivery and collection, ...) to 3.7% of Royal Mail's turnover.
Denmark	Profitability cost + separate analysis of intangible benefits	Copenhagen Economics (2008): Expect no net cost of USO (intangible benefits higher than net cost)
USA	Profitability cost	PRC (2008): cost of USO between 6% to 10% of USPS's turnover
Italy	Deficit approach	Extra-cost of USO (deficit) = €611 million (2006)
Belgium	Fully distributed cost approach	No public estimate



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Cross-country comparisons of the optimal delivery frequency and the net cost of the constraint

- Paper presented at the 17th Rutgers conference (2009): Borsenberger, Joram, Magre and Roy, "Cross-country comparisons of optimal mail delivery frequency".
- The goal of the paper is to compare the net cost of the delivery frequency constraint in 13 countries (12 European countries plus the USA) by determining the optimal delivery frequency.
- Definition of a "reasonable" counterfactual:
 - Without USO, the USP would adjust its delivery process in order to maximize its profit;
 - The USP can differentiate the delivery frequency between regions or areas;
 - Reduction in delivery frequency is perceived by customers as a decrease in quality which negatively affect their demand.
- Estimations based on public data:
 - Geographic (surface) and demographic data by NUTS 3 regions in Europe/States in USA (Eurostat)
 - Mail volume (Ecorys) assumed proportional to the population living in this area



Number of deliveries per week



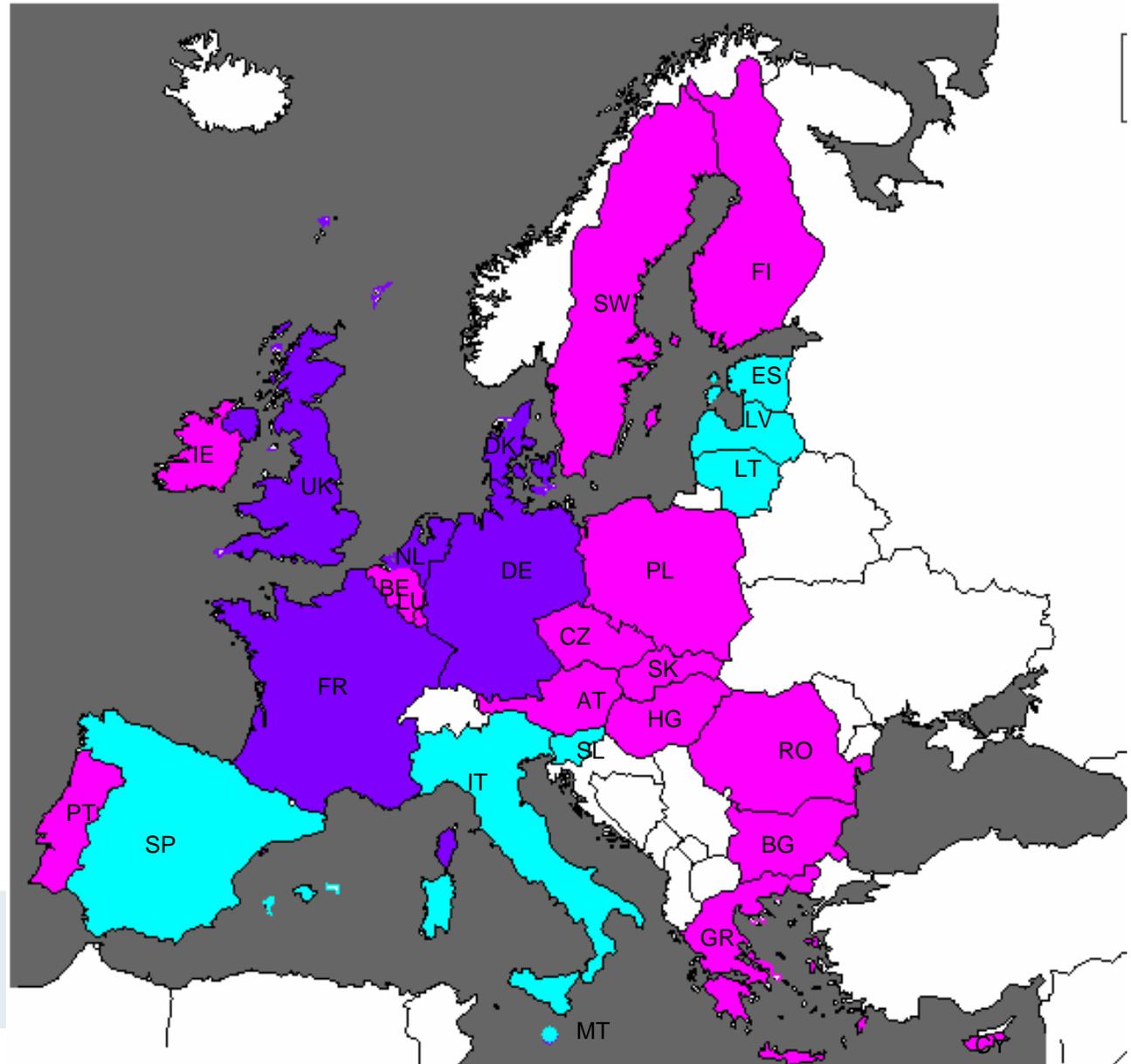
5 deliveries a week



6 deliveries a week (legal obligation)



6 deliveries a week (legal obligation is 5)



Sensitivity of demand to quality/Revenue loss scenarios

Low variability scenario

Reduction in delivery frequency	6 to 5	6/5 to 4	6/5 to 3
Revenue loss with initially ...6 deliveries per week	0%	-1%	-2%
...5 deliveries per week		-1%	-2%

Medium variability scenario

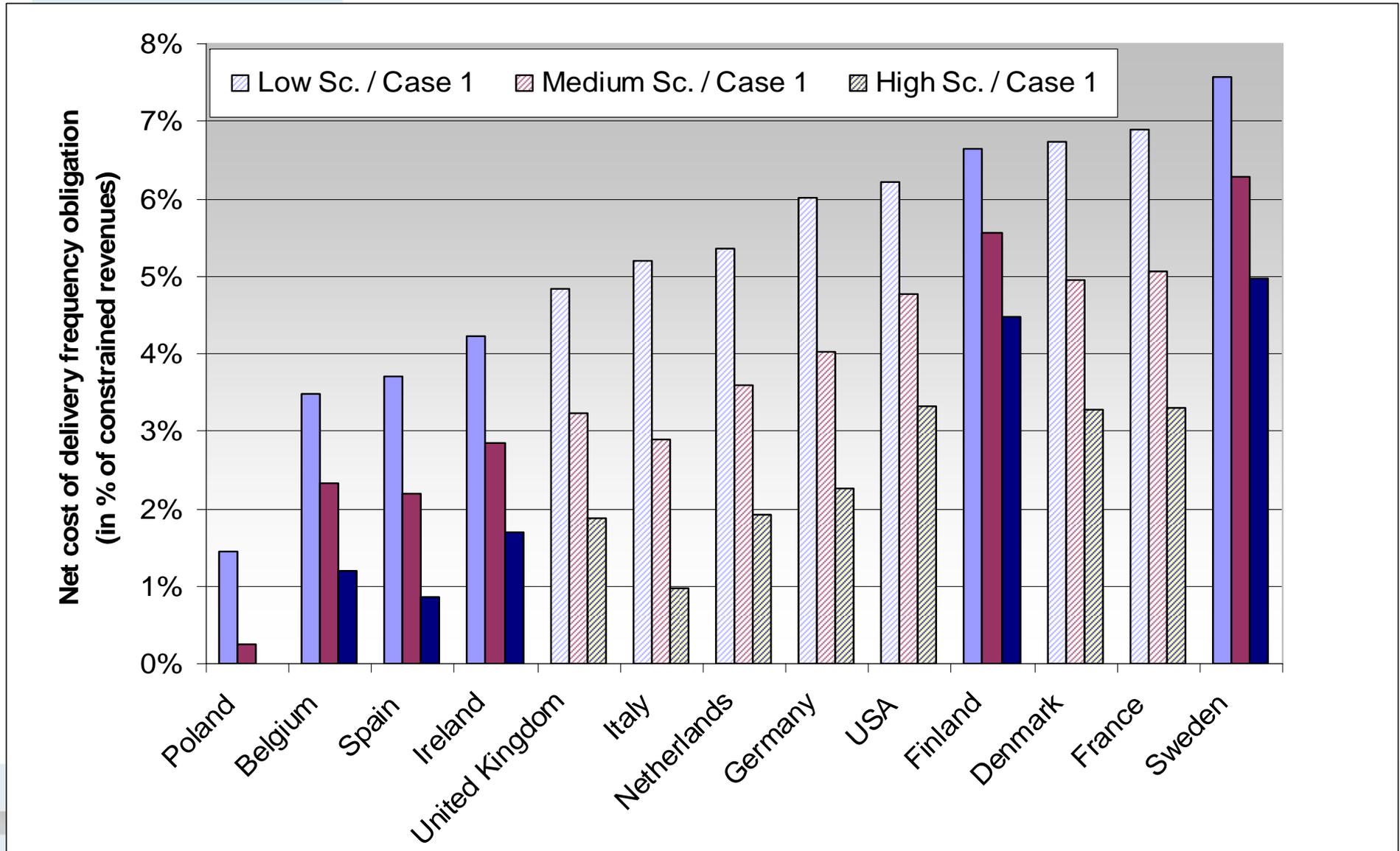
Reduction in delivery frequency	6 to 5	6/5 to 4	6/5 to 3
Revenue loss with initially ...6 deliveries per week	-1%	-2.5%	-5%
...5 deliveries per week		-1.5%	-4%

High variability scenario

Reduction in delivery frequency	6 to 5	6/5 to 4	6/5 to 3
Revenue loss with initially ...6 deliveries per week	-2%	-5%	-8%
...5 deliveries per week		-3%	-6%



Net cost of the delivery frequency obligation



Conclusions of the cross-country comparison

- Delivery frequency constraint (5 or 6 times per week) on the whole territory generates systematically a net cost (\neq need for financing).
- The net cost depends on demand assumptions and on the proportion of fixed versus variable cost in the delivery process.

Net cost of delivery frequency constraint

	Very low density	Medium density	Very high density
Very low traffic per capita	0	+	++
Medium traffic per capita	+	++	+
Very high traffic per capita	++	+	0



Cross-country comparison on the optimal size of a commercial network

Work in progress

- Contribution to the next Rutgers conference in June 2010.
- Objective: get a first idea of what would be the size of a “commercial” postal network in each country, i.e. the number of contact points that the USP would keep if there were no accessibility constraint.
- Derive from French optimization some criteria characterizing a “commercial” network in terms of population served by a point of contact or area covered by a point (by distinguishing rural and urban areas).
- Apply these criteria to geographic and demographic characteristics of studied countries: get the number of points of contact of a hypothetic “French standardized commercial network” for each country and compare it to the number of existing points of contact.

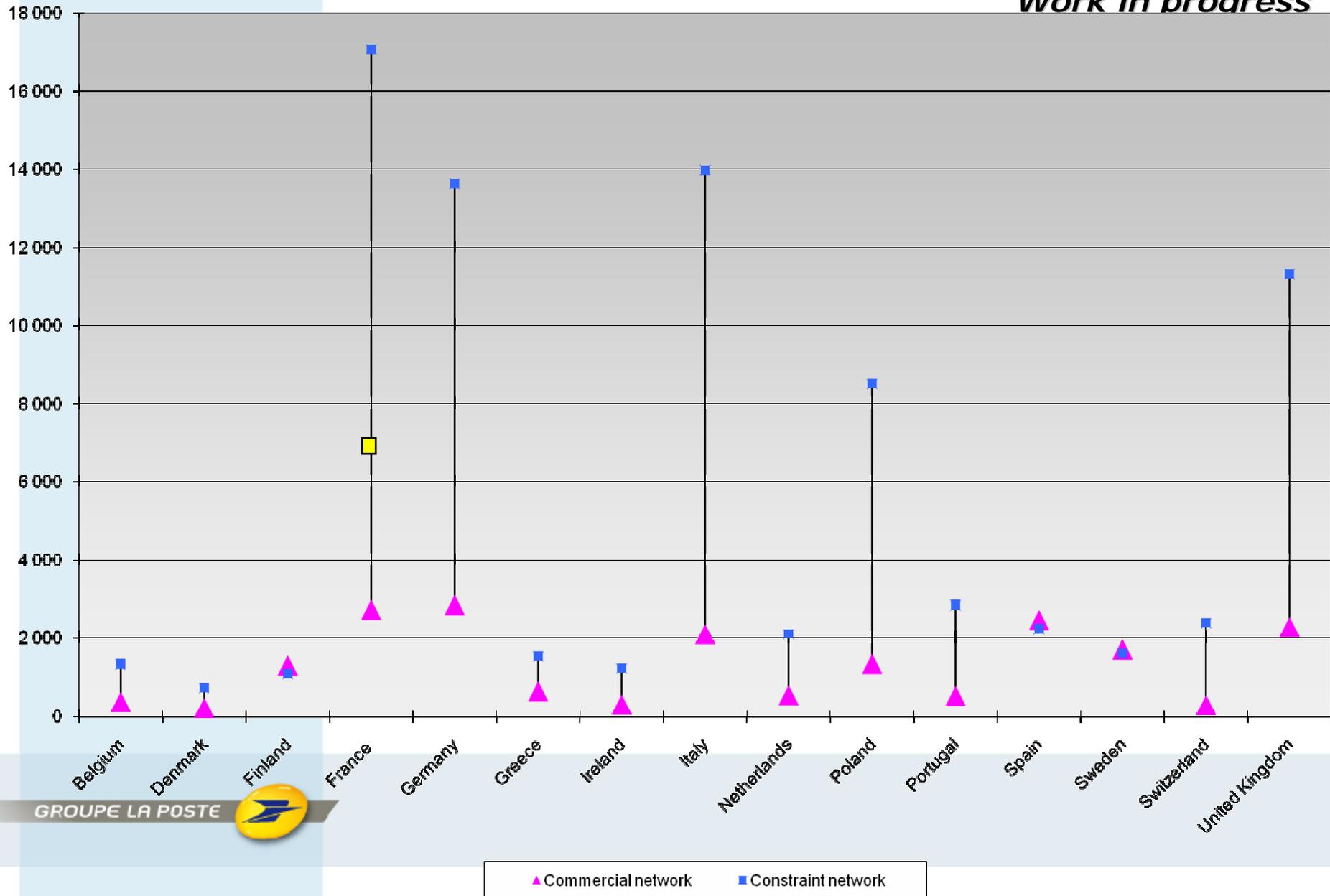


	No specific obligation (other than taking into account the needs of users)	Obligation of a minimum number of access points	Conditions on a maximum distance to an access point	Obligation to have access points in specific areas (e.g.: municipalities, counties...)
Austria			X	
Belgium				X
Bulgaria				X
Czech Republic		X	X	
Cyprus	X			
Denmark		X	X	
Estonia			X	
Finland				X
Germany		X	X	X
Greece	X			
France			X	X
Hungary			X	X
Ireland			X	
Italy			X	
Latvia		X		X
Lithuania			X	X
Luxembourg	X			
Malta	X			
Netherlands		X	X	
Poland		X		
Portugal		X		
Romania	X			
Slovenia		X		
Slovakia			X	X
Spain	X			
Sweden	X			
UK			X	



Cross-country comparison on the optimal size of a commercial network

Work in progress



Summary and conclusion

- The net cost of USO is calculated in order to establish the « fair » amount of compensation
- The USO net cost should be examined when there is a real competition in the market = not necessarily immediately after opening!
- Current reduction of postal flows may accelerate the need for compensation.
- Any costing must be contextualized: it depends on
 - US scope
 - Geography & demography
 - Traffic volumes
 - Competitive intensity



ANNEXES



Different levels of complexity for the counterfactual scenario

“Pure” profitability cost approach

Counterfactual scenario :

- Relaxing pricing constraints
- Relaxing quality constraints
- Relaxing « obligation of provision » constraints

John Panzar and
Cremer et al.
approach

Simplified profitability cost approach

Counterfactual scenario : calculate profits whilst:

- **Fixing** pricing constraints
- Relaxing quality constraints
- Relaxing « obligation of provision » constraints

Particular case of profitability cost approach

Counterfactual scenario : calculate profits whilst:

- **Fixing** pricing constraints
- **Fixing** quality constraints
- Relaxing « obligation of provision » constraints

Net avoided cost
approach



The Norwegian counterfactual scenario and USO net cost estimate

- Norway Post and the Norwegian State have defined a counterfactual scenario:
 - For 15% of households, the delivery frequency would be decrease to 5 times a week (instead of 6)
 - For 5% of households, the delivery frequency would be twice a week.
 - There would be no price uniformity for mails from and to Svalbard
 - No free services for blind persons
 - Registered items and insured items would not be available in all points of contact
- In 2006, the cost of universal service was estimated to €29,1 million (1.5% of Norway Post turnover) but not compensated (in theory, by a public subsidy).



The study of Frontier Economics on the net cost of some USO in UK

- Frontier Economics, "Net costs of elements of the universal service", May 2008. Study for Postcomm.
- Assess the cost of some universal service elements burden by Royal Mail using the profitability cost approach (define a counterfactual scenario for each element).
- The net cost of the post offices network is not estimated since the obligation to maintain a rural network is financed by an annual public subsidy of £150 million.

US element	Base case	Counterfactual scenario	Net cost
First class QoS	93%	85%	£76 million (0.8% of turnover)
Collections and deliveries per week	6 days	No collection or deliveries on Saturday	£271 million (2.9% of turnover)
Class of mail	First class (D+1) Second Class (D+3)	Single mail class	-£278 million (- €348 million)
		Single mail class without Saturday delivery	-£44 million (-€55 million)



The study of Copenhagen Economics on the net cost of USO in Denmark

- Copenhagen Economics, "What is the cost of Post Danmark's universal service obligation?", 2008. Study for the Danish Chamber of Commerce.
- Estimate the net cost of
 - National mail delivery constraint
 - Six-day delivery frequency
 - Price affordability
 - Accessibility to post offices and letter boxes
- Expect (but not really prove) that the intangible benefits are higher than DKK 150 million. In other words, expect that there is no USO cost.

USO	Counterfactual scenario	Net cost
Mail delivery six days a week	No Saturday delivery	DKK 133 million (1.1% of turnover)
Free delivery of material for blind	Tariffs cover costs	DKK 18 million (0.15% of turnover)
Mail delivery to the entire country	Discontinuing delivery to small islands	Negative (revenue losses exceed cost savings)
Uniform price for single letters		Not a real constraint
Letter boxes and post offices		Not a real constraint



The study of the PRC on the net cost of USO in USA

- Postal Regulatory Commission, *Report on Universal Postal Service and the Postal Monopoly*, December 2008 (for the Congress and the President – requirement for postal law).
- Calculates the amount of profit that USPS would *gain* if it were relieved of its USO burden, or the amount that it would *lose* if one or both of its monopoly protections (letter and mail box monopolies) were removed.
- Among all USO requirements, the most costly are the delivery frequency and the nonprofit mail discount.

Profit increase from eliminated selected USO mandates (2007 \$ billion)	
Reducing Delivery from 6 to 5 days	1.93
Reducing Delivery from 6 to 3 days	5.20
Nonprofit mail discounts (counterfactual = raise price of periodicals for non profit organizations and of packages for library to the standard rate)	1.15
Losses on market dominant products (counterfactual = raise price to break-even)	0.45
Maintaining small post offices	0.58
TOTAL	4.4 to 7.9 (6% to 10% of turnover)



The Italian case: Unprofitable universal service

- Poste Italiane incurs a deficit in the scope of universal service (with a fully distributed cost allocation method).
- This deficit is not the net cost of USO according to a profitability cost approach.
- The deficit is financed by
 - a public subsidy.
 - a compensation fund based on a tax on postal operators revenues (capped by 3% of revenues in the scope of universal service).
 - Banco Posta.

(million €)	2002	2003	2004	2005	2006
Extra-cost of USO	860	865	681	651	611
State compensation	429	415	336	359	370
Share of loss compensated by State	50%	48%	49%	55%	60%
Contribution to the fund (tax on revenues)	0.01	0.11	0.10	0.11	

Source : Poste Italiane.



The Belgian case: A deficit approach (with FDC)

The net cost of USO is equal to the sum of losses in the scope of universal service (reserved area + competitive area) minus the benefits realized in the reserved area.

