



Evolution of private weather services :
Country frameworks and economic results

Evolution of private weather services in different countries: frameworks and economic results

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Photography
encouraged



Overview

1. Methodology
2. Structure of national markets for weather services
3. Country differences and segmentation
4. System drivers and evaluation
5. Conclusions and recommendations

1. Methodology - Country selection

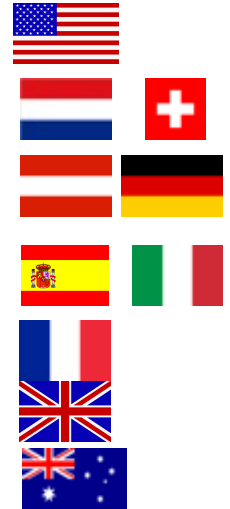
Selection criteria

1. By GDP = Top 100
2. By National Indices = Top 50
3. By Language = Top 20
4. Population = Top 15
5. Ability to retrieve pertinent info

Some gaps = Japan, China, India,
Indonesia, Brazil, Russia... next study 🧐

Countries included are:

- USA
- Netherlands Suisse
Austria Germany
- Italy Spain
France
United Kingdom
Australia



10 countries from 3 continents

1. Methodology – Key Performance Indicators (KPI)

KPI used for selection:

1. Countries:
Population, Gross domestic product, Surface
2. National Weather Services:
Employees, budget, commercial (Sales)
3. Private Weather Services: Companies, Employees,
Sales, Target industries, Export

Sources:

World Bank

WMO

Publications, Interviews, corporate communication, Market research

Not included: Equipment suppliers, corporate departments (Insurances), niche players

National Hydrometeorological Services (NHMS)
Private Meteorological Services (PSP)

Focus on services: value chain steps 2+3 (1= instruments)



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2. Structure of national markets for weather services

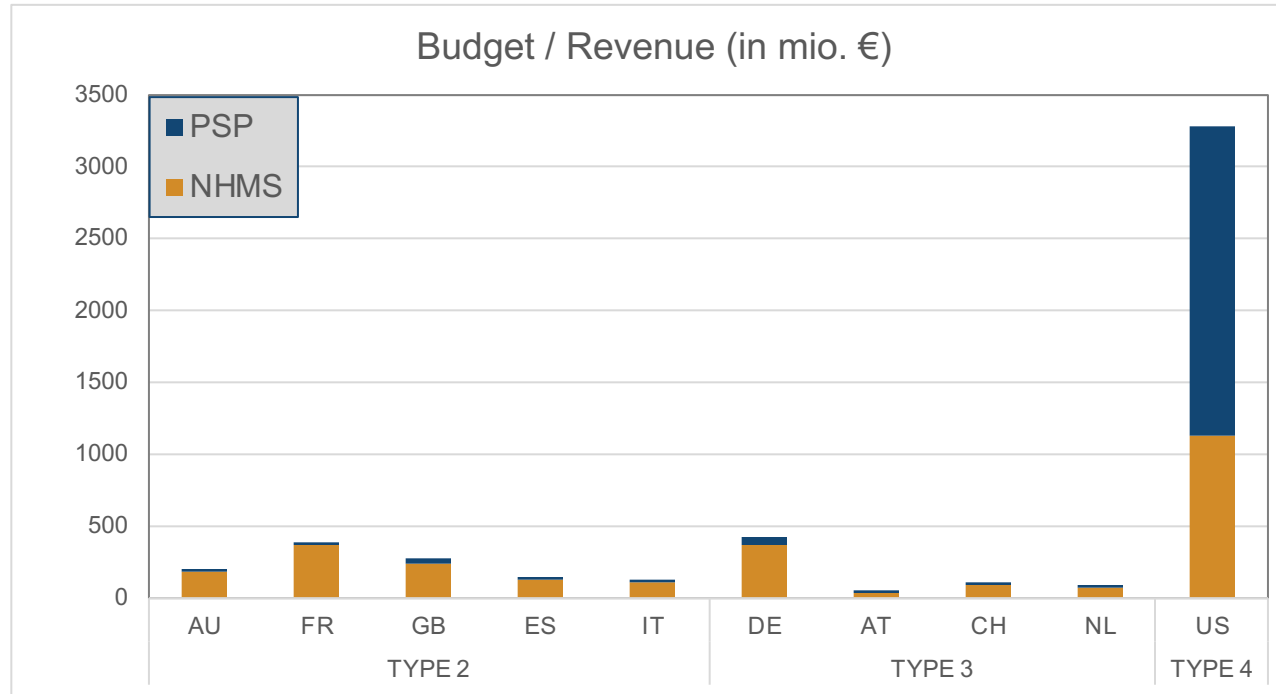
	Market type 1	Market type 2	Market type 3	Market type 4
Private Service providers (PSP)	No presence	Company number <10 Domestic companies with >10 employees <3 (No Global Player)	10-100 companies Domestic companies with >10 employees 3-10 (1-5 Global Players)	>100 companies Domestic companies with >10 employees >10 (>5 Global Players)
National Weather Service (NHMS)	Acts as sole supplier for Weather services (Monopoly)	Business activity, Market dominance = main supplier for Weather services, No open data (2016)	Business activity Large market share Some open data (2016)	No Business activity Full open data (2016, since >20 years)
Examples (countries)				



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3.1 Country differences and segmentation: revenue

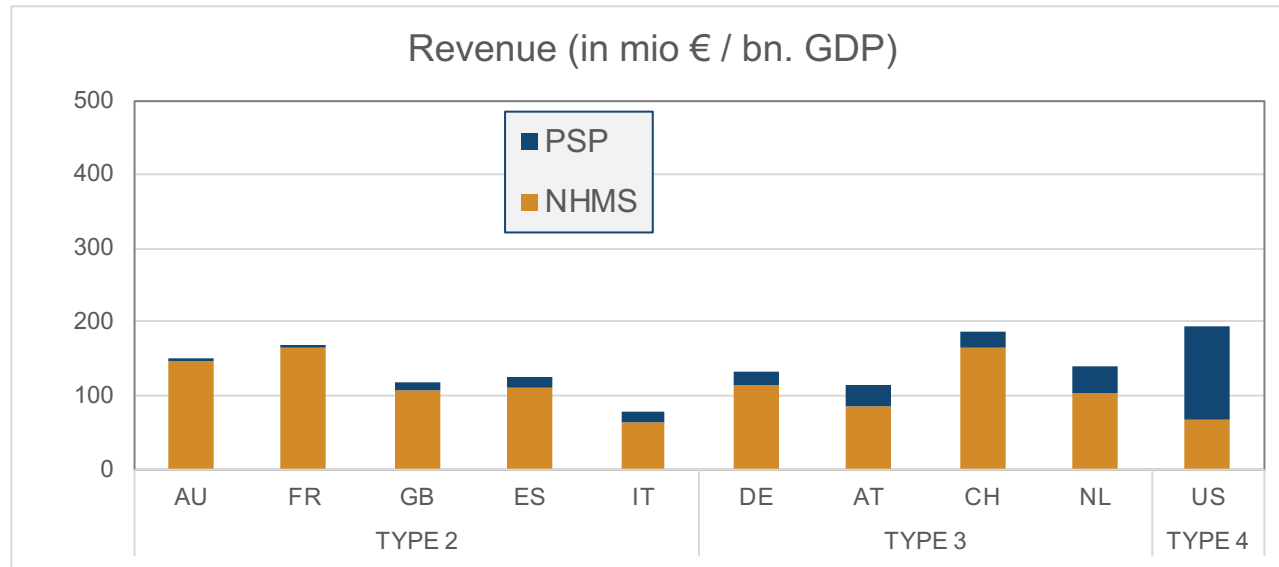


Some effects:

- Large countries (US) not comparable to small ones correlated to country size (AT, CH NL)
- Large countries (US, AU) have different populations
- Purchasing power may differ (CH, IT)

Need to normalise the data by surface, GDP, population,

3.3. Country differences and segmentation: revenue/GDP

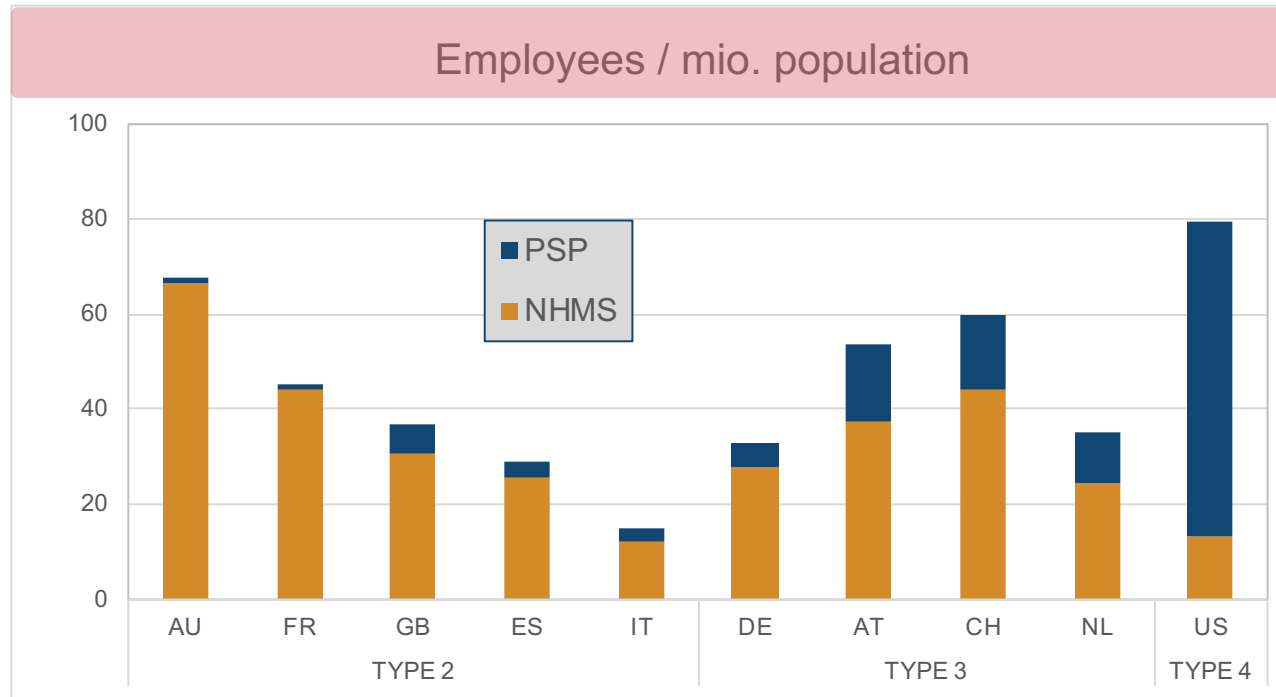


Some effects:

- Very similar levels in OECD countries.
- Topography or meteorological complexity is only 1 of drivers for investment
 - Top complexity: CH, AT, IT
 - Lower complexity: AU, GB
- Always strong NHMS basis
- Split NHMS/PSP varies more than expense per GDP

Expenses per GDP similar across segments: driven by policy

3.5. Country differences and segmentation: employ./pop.

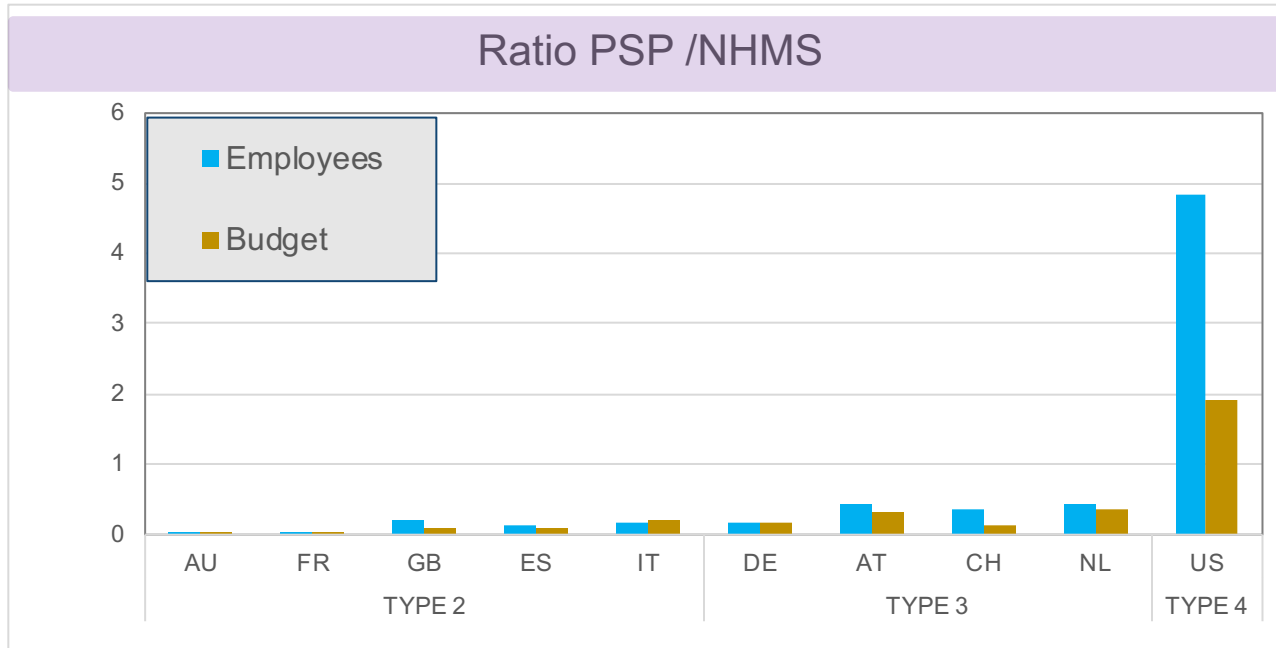


Effects different from revenue:

- Type 3 and 4 countries tend to employ more
- Exceptions (FR, AU, GB) explained by strategic interests – large area scope)
- Lower population density (AU, US) tends to employ more: scope
- CH on same level as others in type 3 : must be high wage effect

Employees per GDP is driven by geography and strategy

4. System drivers and evaluation: segmentation and employment



Effects on meteorological service employment:

- Different employment levels in OECD countries (factor 3)
- Explanations for differences
 - Competitiveness: US (highest level of PSP, global reach).
 - Level of export : not for FR, GB, ES, because most services are NHMS (which do not export)
- Countries have fundamentally different ratios PSP/NHMS

Country policy impact employment split



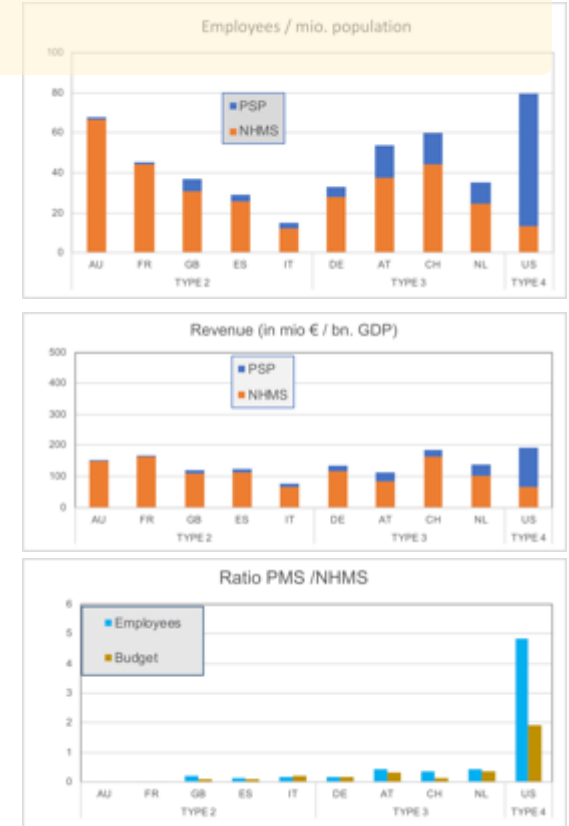
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4. System evaluation: Goals

Business assumption

- A. More employees better fulfil the needs
: measure = Employee /population
- B. More sales generate more value
: measure = Revenue /GDP
- C. There is an optimal financing model
: measure = Split PSP/NHMS

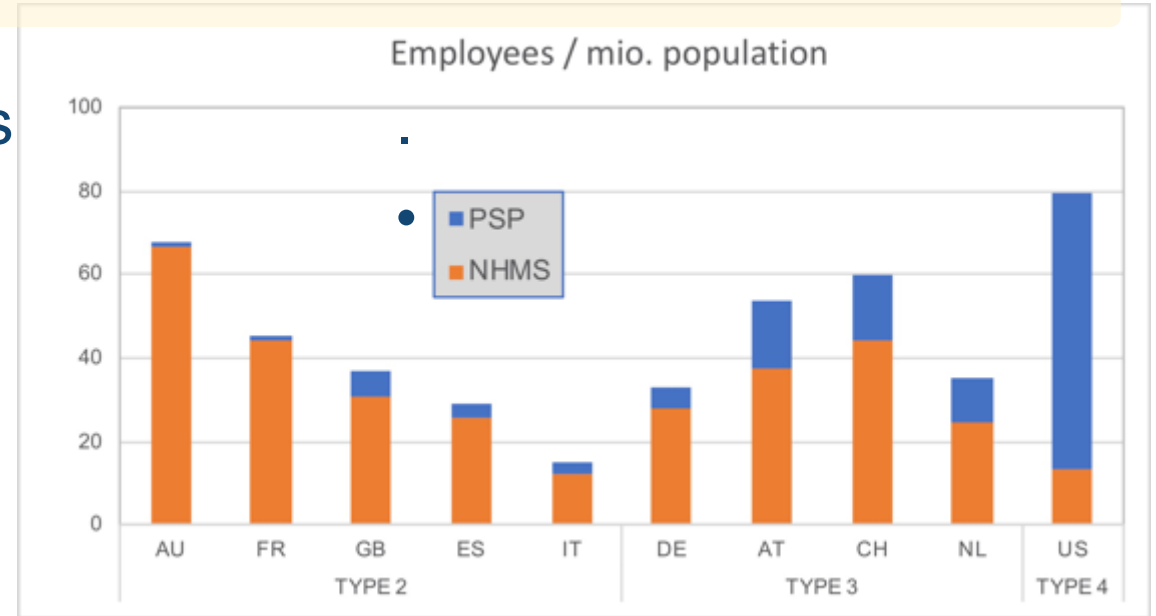


Valuation of market model depends on goal setting

4. System evaluation: Goal A = more employees

More employees better fulfil the needs
: measure = Employee /population

- Countries type 4 generates highest employment
- Countries type 3 generates good employment
- Countries type 2 generates variable employment: always driven by NHMS (policy), no significant private sector

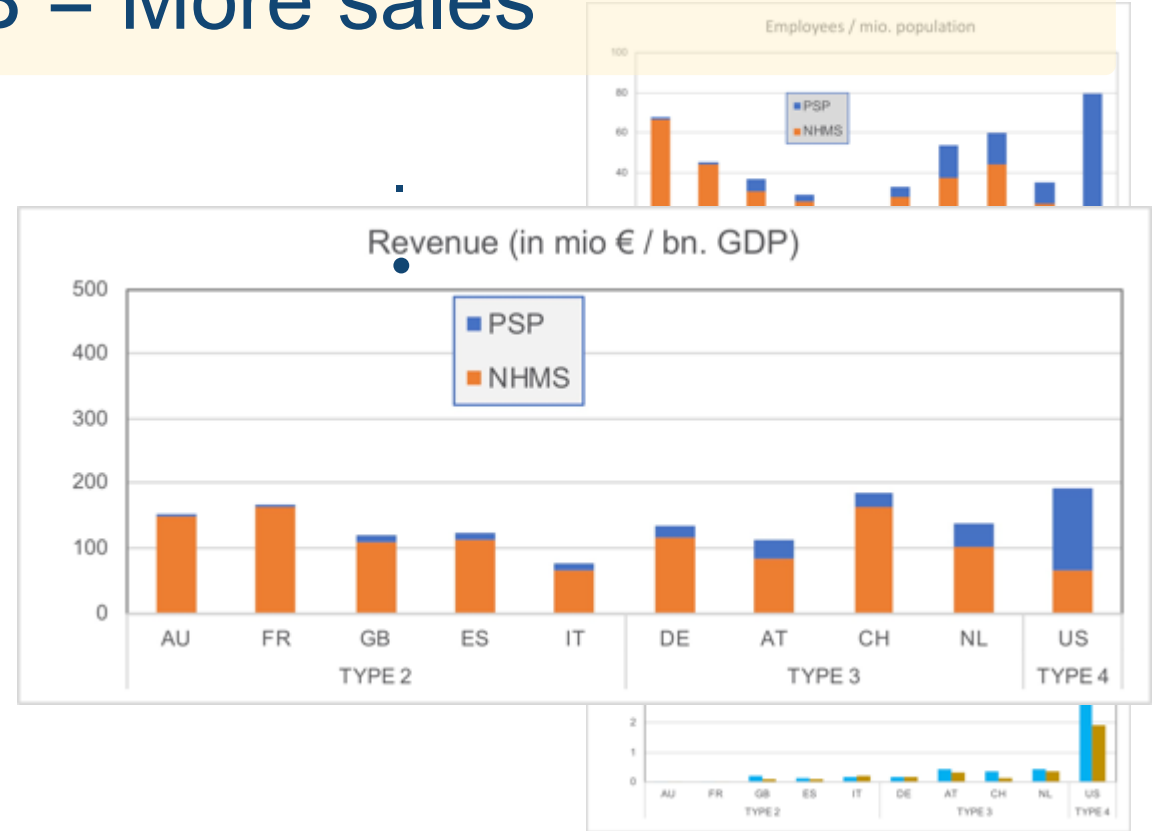


Employment drivers: Open market tends to be better

4. System evaluation: Goal B = More sales

More sales generate more value :
: measure = Revenue /GDP

- Countries type 4 and 3 generate highest revenue
- Countries type 2 generate variable revenue: always driven by NHMS (policy), no significant private sector

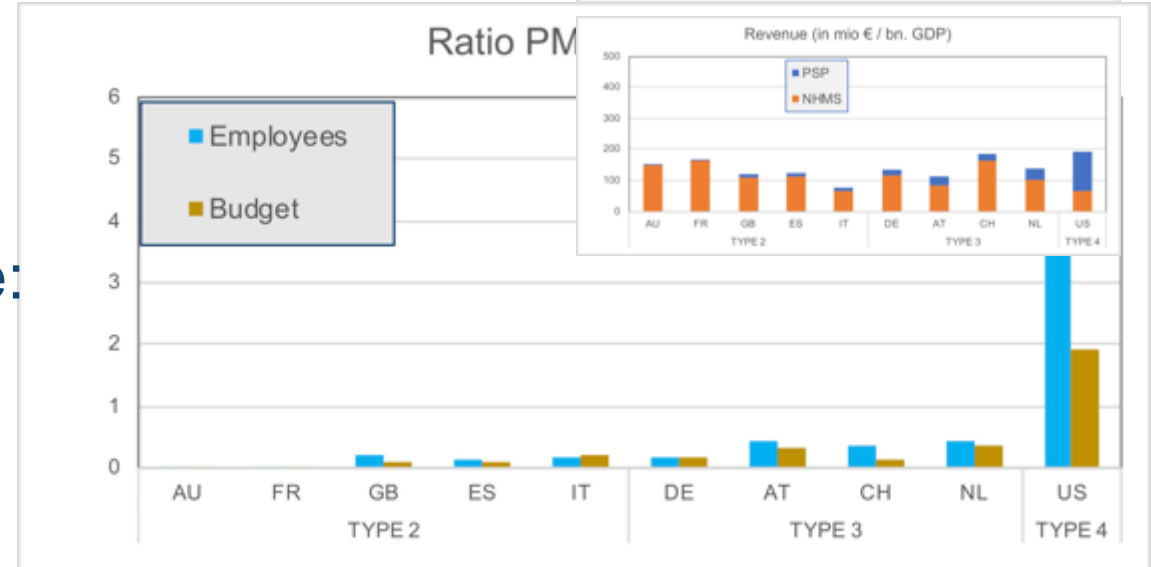
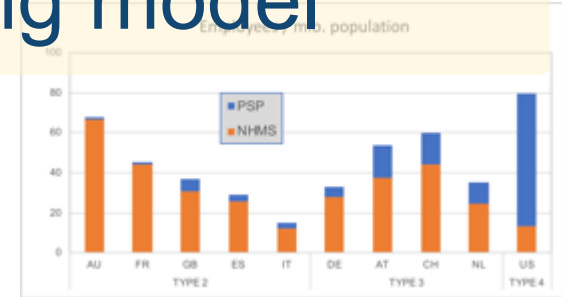


Revenue drivers: Open market tends to be better

4. System drivers: Goal C = optimal financing model

There is an optimal financing model
: measure = Split PSP/NHMS, Effect of Country type
on revenue and private funding

- Type 4: highest revenue and private
- Type 3: average revenue & private
- Type 2: variable revenue, low private:
 - exception GB (1 private multi-national)
 - exception ES (1 global specialist)



Business models: Open market creates more value

4. System drivers and evaluation: driving factors valuation

	FR	GB	ES	DE	CH	NL	US
Demand							
• Employment (Empl./Mill. Pop.)	46	36	29	33	60	36	80
• Revenue (Empl./Mill. Pop.)	169	120	125	134	187	140	195
Market conditions							
• Ratio PSP/NHMS ¹⁾	<0.05	.11 .20	.11 .13	.16 .17	.14 .36	.36 .45	4.9 1.9
• Export ratio (%)	<10%	<10%	<10%	<10%	<10%	>10%	>10%
Access to technology							
• Data from NHMS	High access cost	Medium access cost	Medium access cost	Medium access cost	Medium access cost	Low access cost	No access cost
• Equipment :	High	High	High	High	High	High	Very High
Other factors							
• Subsidy to PSP	Low	low	low	Little support	Some support government	active support government	Some support government
• Freedom of key PSP	High NHMS presence	High NHMS presence	No influence (Energy)	some presence (Ag Air Road)	Low presence (except Air)	Low presence (except Air)	No presence

¹⁾ Revenue|Employees

Key enablers: No data cost and NHMS market absence



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Conclusions

- NHMS always form strong basis (even in Type 4 market)
- Open market drives **employment** and **revenues**
- Semi-open markets (Country Type 3 and **2**) produce **very** variable results
- **Business models: Open market creates large private sector and more overall value**

Recommendations

- **NHMS are essential as basic enablers** (observation, alarms) = natural monopolies
- **Strengthen strategies towards open markets** but clear structure needed : strategy must consider needs and natural monopolies
- Consideration needed of some factors (surface area, currency, market in-transparency), and drivers (society need, export, technology leaps)
- **Strategies for more effective business models**

Meteo services improvement possible by economic strategy



References

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2019 WMO: The Power of Partnership: Public and Private Engagement in Hydromet Services (in preparation)

Many internet sources....

Please ask for a copy of this presentation by email to karl.gutbrod@meteoblue.com