

Providing Monthly estimates based on LFS quarterly data

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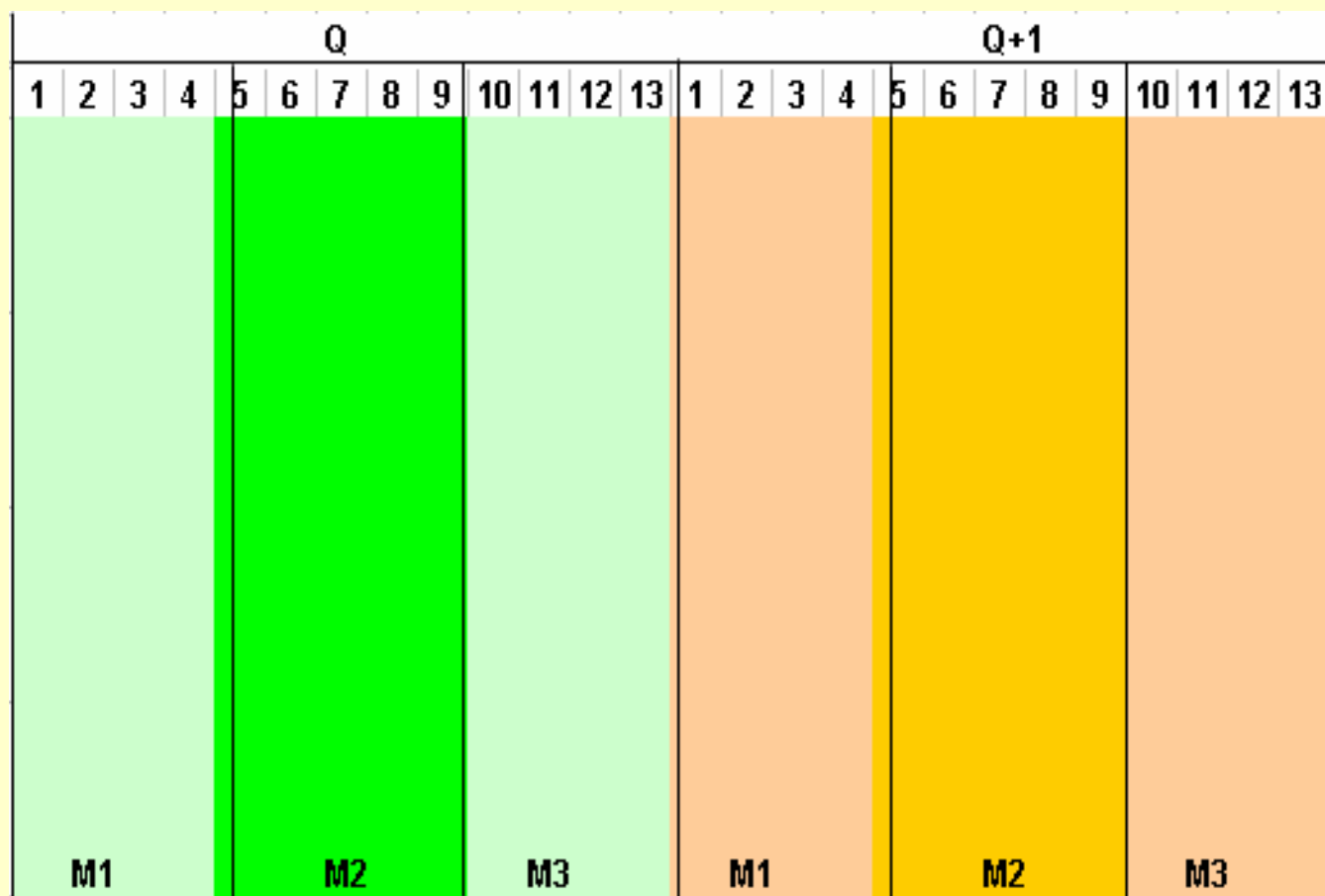
Starting points

- **LFS is a continuous survey**
- **There is a demand on ‘monthly figures’ on the Labour Market**
- **The production of monthly figures based on LFS depends on the survey design**

Understanding the request

- LFS as a continuous survey...
- Have a clear potential to develop 'monthly estimates':
 - ◆ All the 'weeks' have to be represented
 - ◆ Quarters are 13 consecutive weeks
 - ◆ Years are $13 \times 4 = 52$ consecutive weeks
 - ◆ As $52 \times 7 = 364$ days, from time to time it is needed to introduce a 14th week in a quarter and 53th week in a year
 - ◆ All these aspects are regulated at EU level
- But, what is the situation concerning the definition of 'months'?
 - ◆ No definition regulated in the LFS legal basis
 - ◆ The 'natural extension' of the current framework is not so stable because the months are composed from 4-5 weeks which means a frequent 20-25% of variation (minus-plus) on the sample between consecutive months

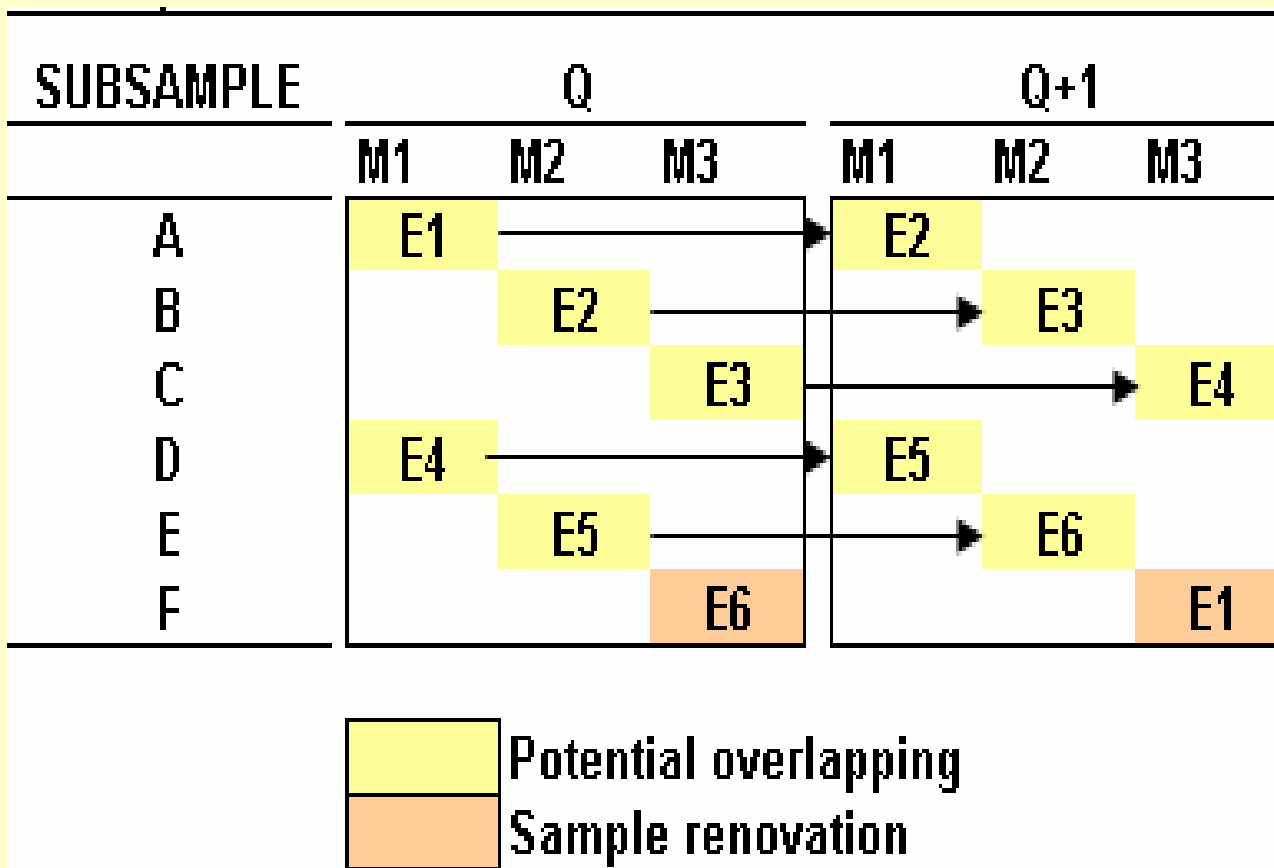
Weekly scheme in the LFS quarters



Understanding the request

- What do we call 'monthly estimate'?
- Is this a silly question?
- I'd say not...in fact I think it is a crucial one to answer before start working.
- The LFS survey is (typically) designed to produce quarterly estimates and monitor the change between consecutive quarters.
- To 'zoom' this approach at 'monthly' level is not straightforward
- The sample for the month is much less (around one third of the quarter)
- Usually the 'common sample' for consecutive months is not available.

Scheme of sample distribution in a small province in Spain



Understanding the request

- **The timeliness is crucial**
 - ◆ For a monthly estimate it is 'natural' to have results close to the end of the reference period (at least within the next month after the end of the reference month).
 - ◆ Combining the sample of three months is a possibility but...
 - ◆ The 'moving average' results usually 'refer' to the 'central month' because of the 'now-casts' used for weighting.
 - ◆ This means having the results of M-estimate after a minimum of two months later. This option is not considered timely enough

Outlining the output

- **What do we call monthly estimates based on the LFS?**
 - ◆ **A pre-defined / fixed set of indicators?**
 - ◆ **What is the degree of use of LFS data?**
 - ◆ **What's the role of modelling?**
 - ☞ **Seasonal adjustments**
 - ☞ **Combination of data of other sources?**
- **We already have answers to these questions (see harmonised unemployment figures)**
- **When we speak about enhancing the LFS information in order to provide monthly estimates (Recommendation R3), are we assuming the same answers for the future?...**
- **Or, would it be pertinent to introduce changes?**

Outlining the output

- **Currently, the EU harmonised monthly data based on LFS has the following features:**
 - ◆ **Limited to unemployment rates, by sex, and age-group (under 25, 25+) for each country**
 - ◆ **Several methods are applied to elaborate such estimates, depending on the information available for each country**
 - ◆ **Usually other sources (in particular registered unemployment data) are used**
 - ◆ **The more visible output figures are seasonal adjusted**
 - ◆ **The coherence between the monthly and quarterly data is 'forced' when necessary**

Outlining the output

- **What could be the future? I see two main approaches in the 'nature' of 'monthly estimates' based in LFS:**
 - ☞ The monthly estimate could be the 'average' estimate in the 'reference month' from the situation defined in the RWs composing the month.
 - ☞ Alternatively, they can be considered as early (monthly) estimates for the quarterly (final) LFS estimate
- **To have estimates on the 'reference month' means:**
 - ☞ To have a sample design to support efficiently such estimates
 - ☞ To ensure whole 'coherence' to quarterly and annual figures becomes 'natural'
 - ☞ Due to match the timeliness requirements, the use of alternative (more timely) sources of information is needed and consequently, the use of different models is compulsory
- **What If the 'monthly data' is conceived as 'advance estimate' of quarterly figures?**

A short reference to the estimate procedure tested in Spain

- The procedure was presented at the LFS-Workshop in Ljubljana (2009)
- Extension of 'small areas methodology' to time dimension.
- Composite estimator ('direct' and 'synthetic' component).
- Empirical Best Linear Unbiased Predictor (EBLUP) estimates.
- Main 'terms of reference':
 - ◆ Automation of the 'current' procedures in Spanish LFS
 - ◆ Total transparency in methods applied
 - ◆ Flexible output
 - ◆ Timely results (the third week after the end of reference month)

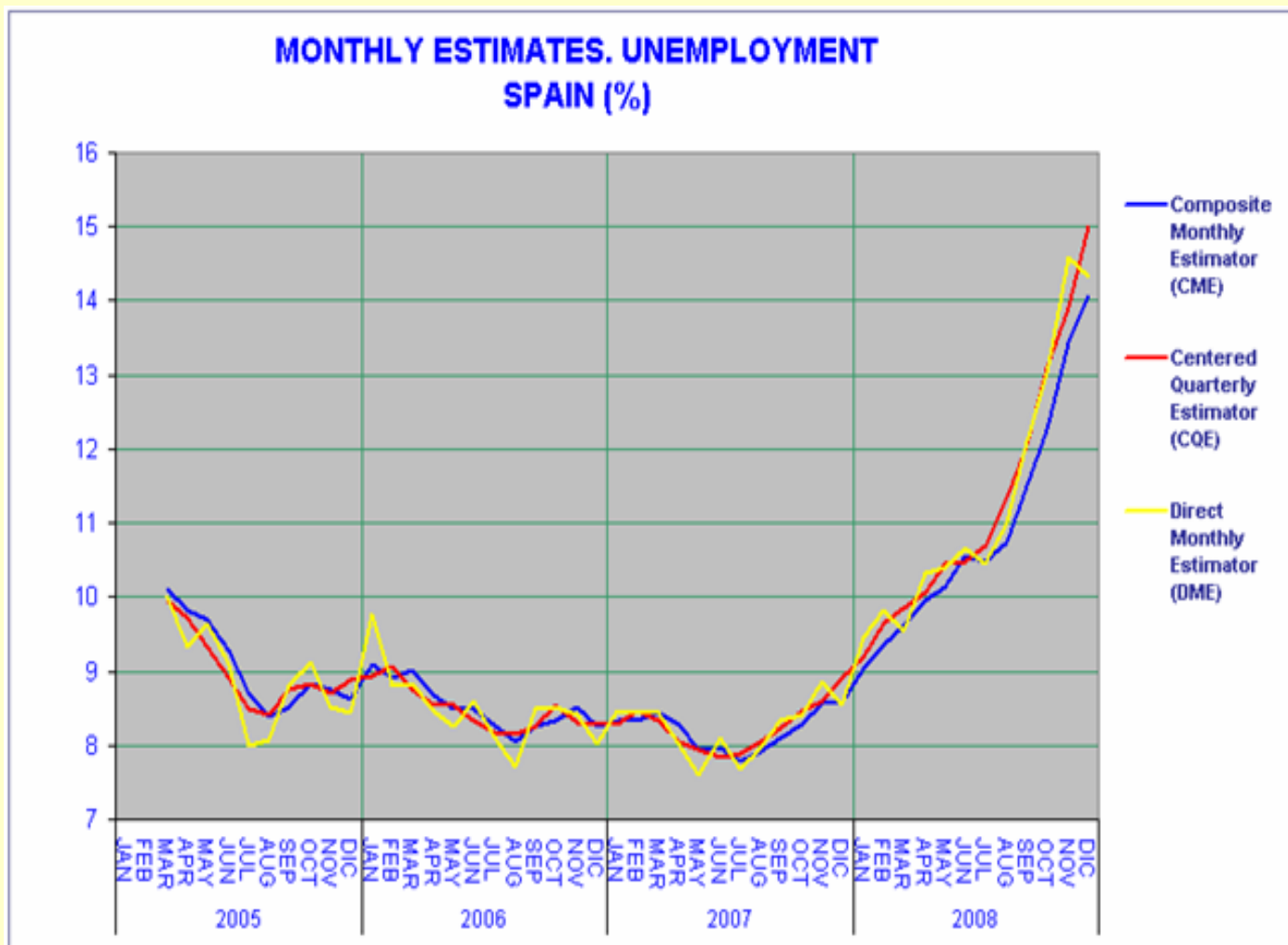
A short reference to the estimate procedure tested in Spain

$$\theta_{Q_{iM}} = \gamma_i \theta_{DMi} + (1 - \gamma_i) (\theta_{MQE}); \quad 0 \leq \gamma_i \leq 1$$

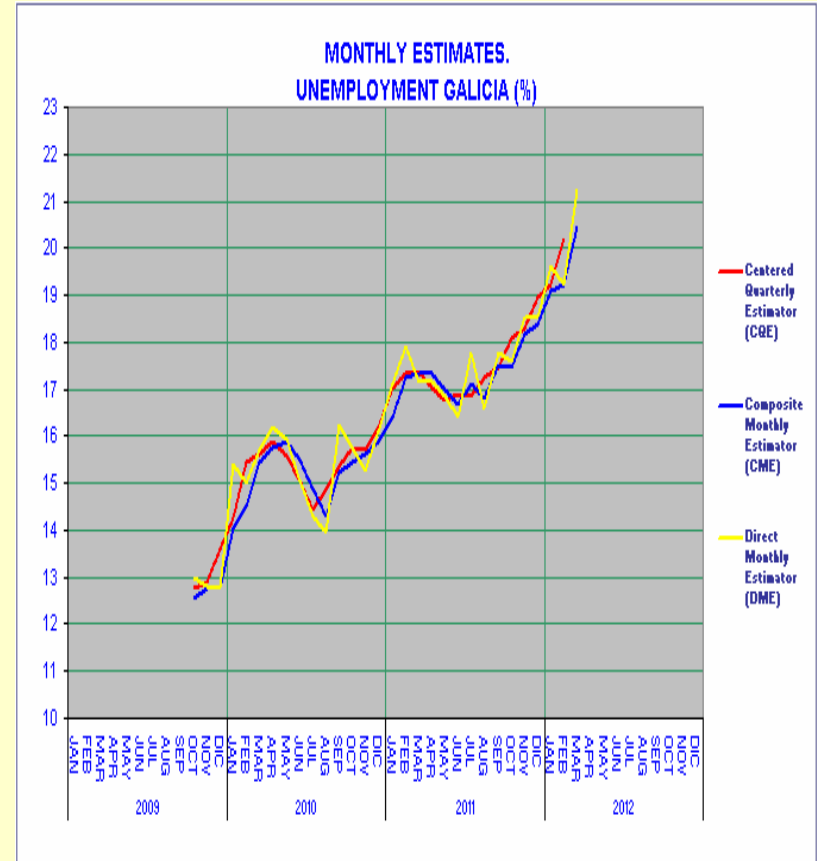
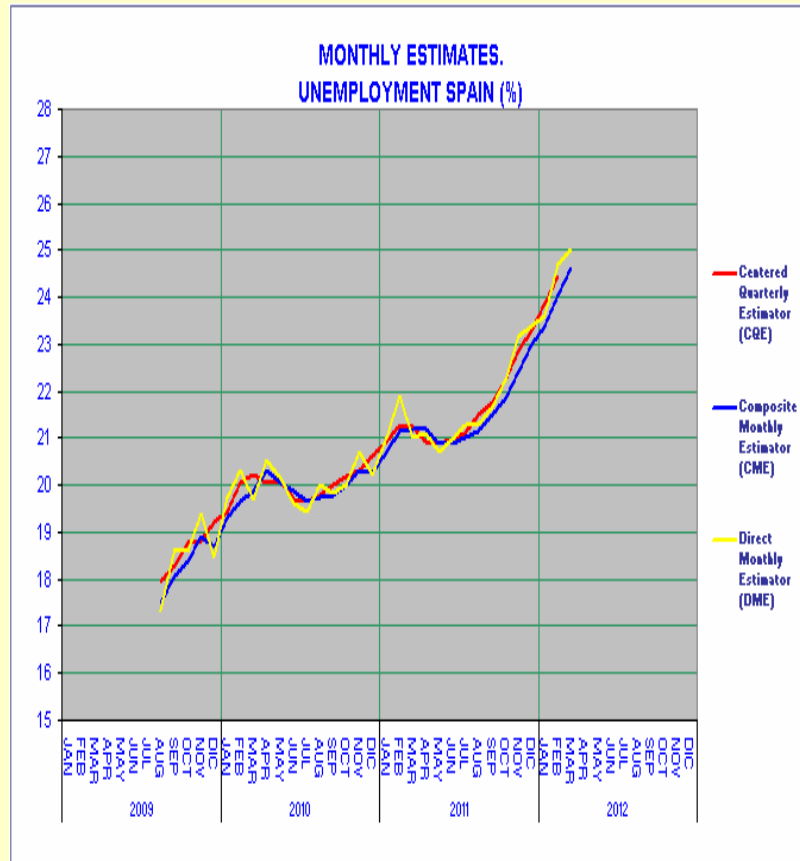
θ_{DMi} (Direct Monthly Estimator) is the preliminary estimator, playing here the role of 'direct' component', based on the available sub sample for the target month i .

θ_{MQE} (Moving Quarter Estimator) refers to the estimator based on the full available sample for the quarter that finalises in target month i ('synthetic' component).

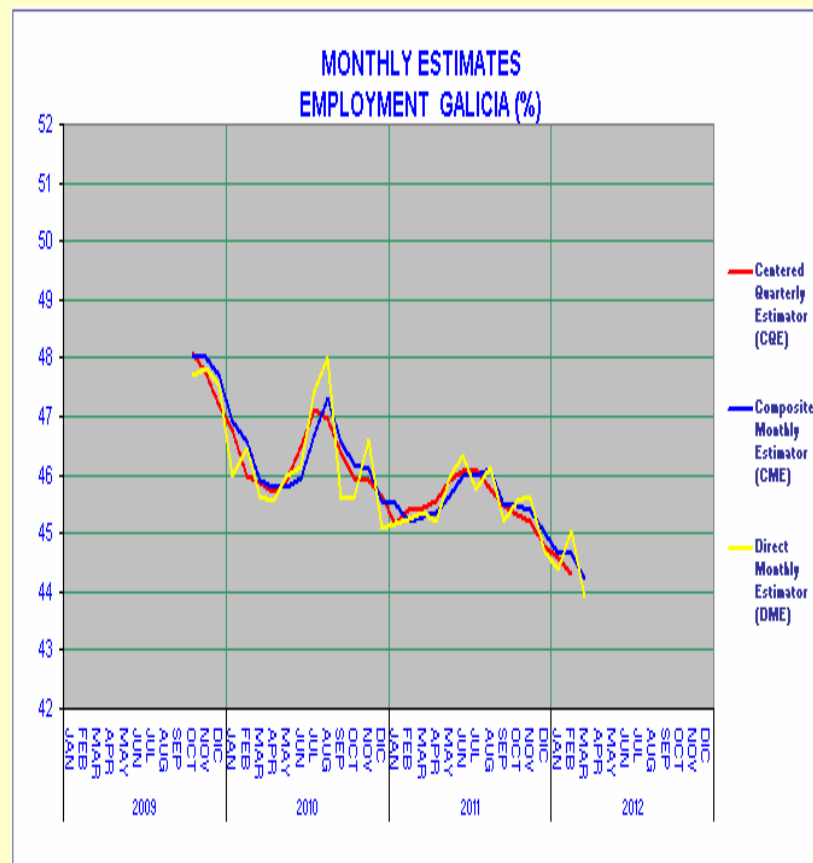
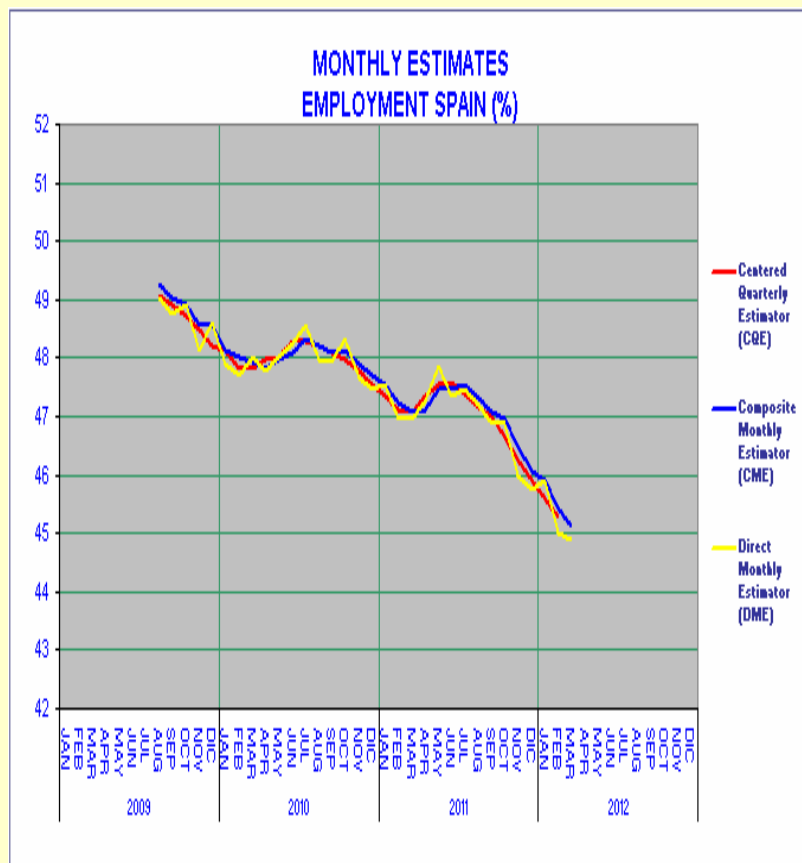
Some monthly data. Spain



Unemployment data Spain & Galicia



Employment data Spain & Galicia



Final remarks

- **The current monthly data requirements at EU level, are covered in a satisfactory way?**
- **If not, what are the problems...**
 - ◆ **Concerning methodology?**
 - ◆ **Set of indicators?**
- **What does it mean for the new legal basis?**

Thanks for your attention!

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