

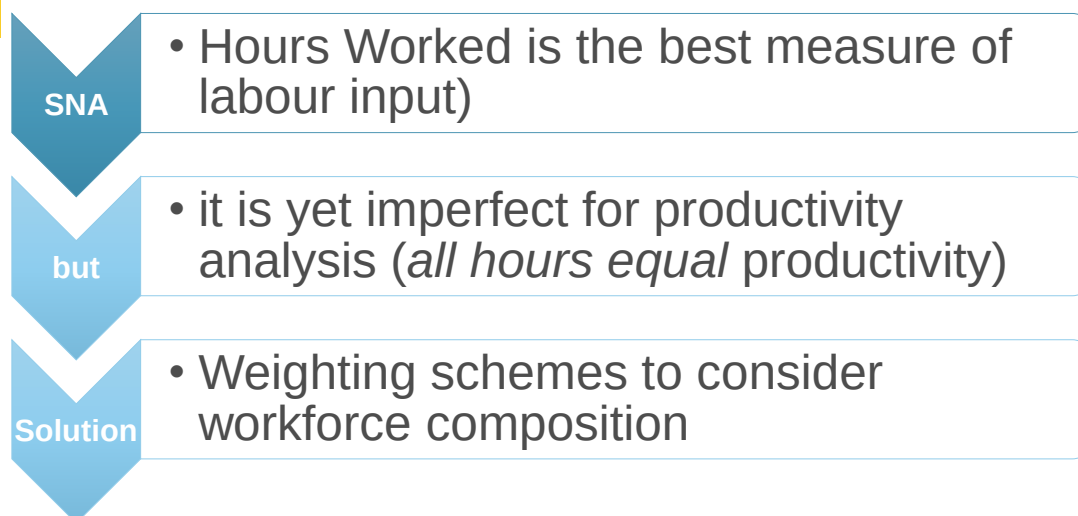


Productivity paths in the EU: the use Quality adjusted Labour Input for better understanding productivity developments

Antonio F. AMORES and Juan M. VALDERAS-JARAMILLO (JRC)
Nadia DI VEROLI and Veronique DENEUVILLE (Eurostat)
6 WorldKLEMS - 16 March 2021*

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- 2 Comparability issues
- 3 Makes any difference to consider the composition of the workforce?
- 4 Looking at the industry contributions to productivity growth
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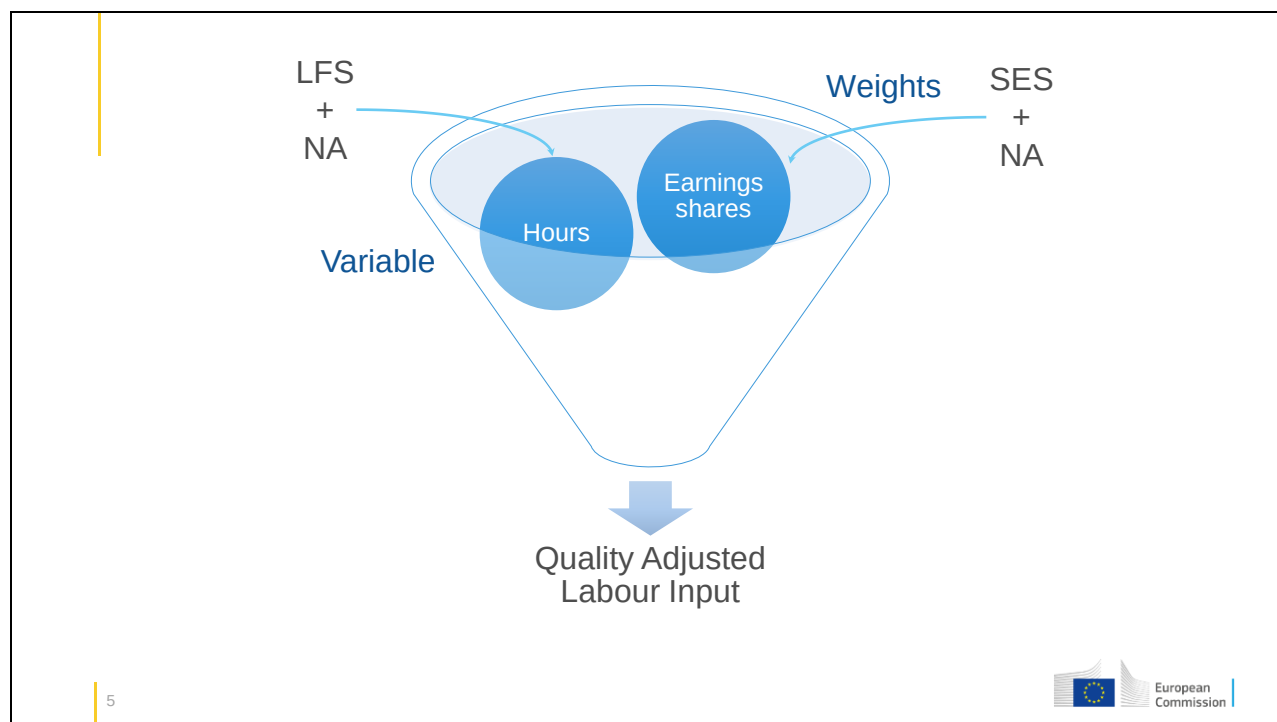


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1. Quality adjusted Labour Input





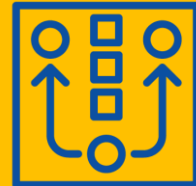
Eurostat's Quality-Adjusted Labour Input (experimental statistics)

Törnqvist Index

Age	Skill
15-29	High (ISCED97= 0-2)
30-49	Medium (ISCED97= 3-4)
50+	Low (ISCED97= 5-6)

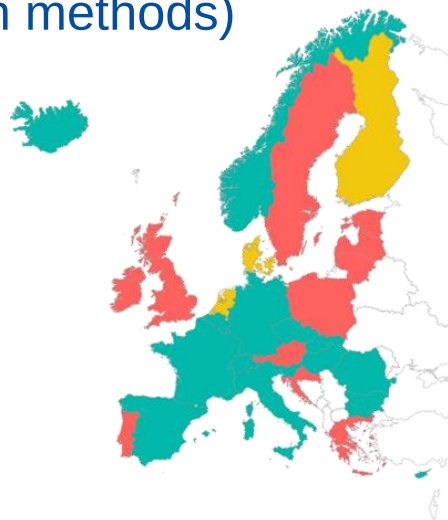
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2. Comparability issues



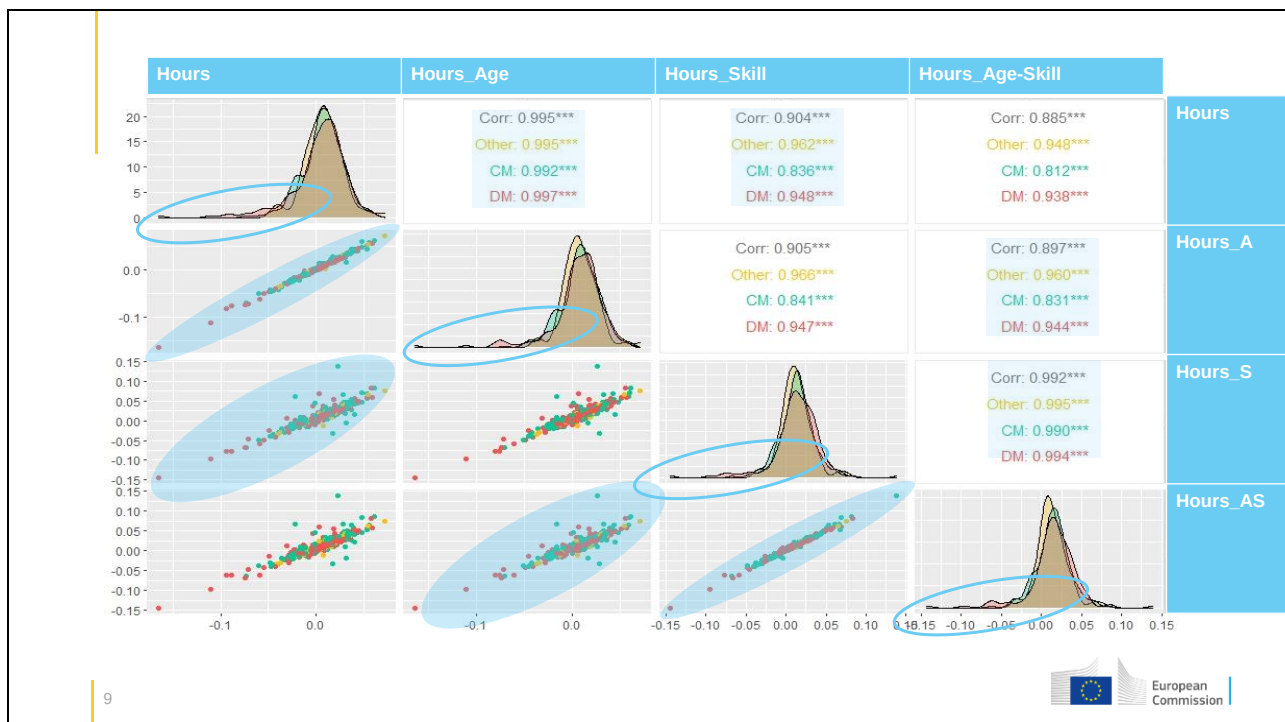
Hours Worked (main methods)

Method	Based on Hours	Absences	Adjustment needed
Direct Method	Actual	Self reported	Significant
Other Methods			
Component Method	Usual	Modelled	Modelled



DM: Annualizes Actual Hours adjusting it with self reported data on absences.

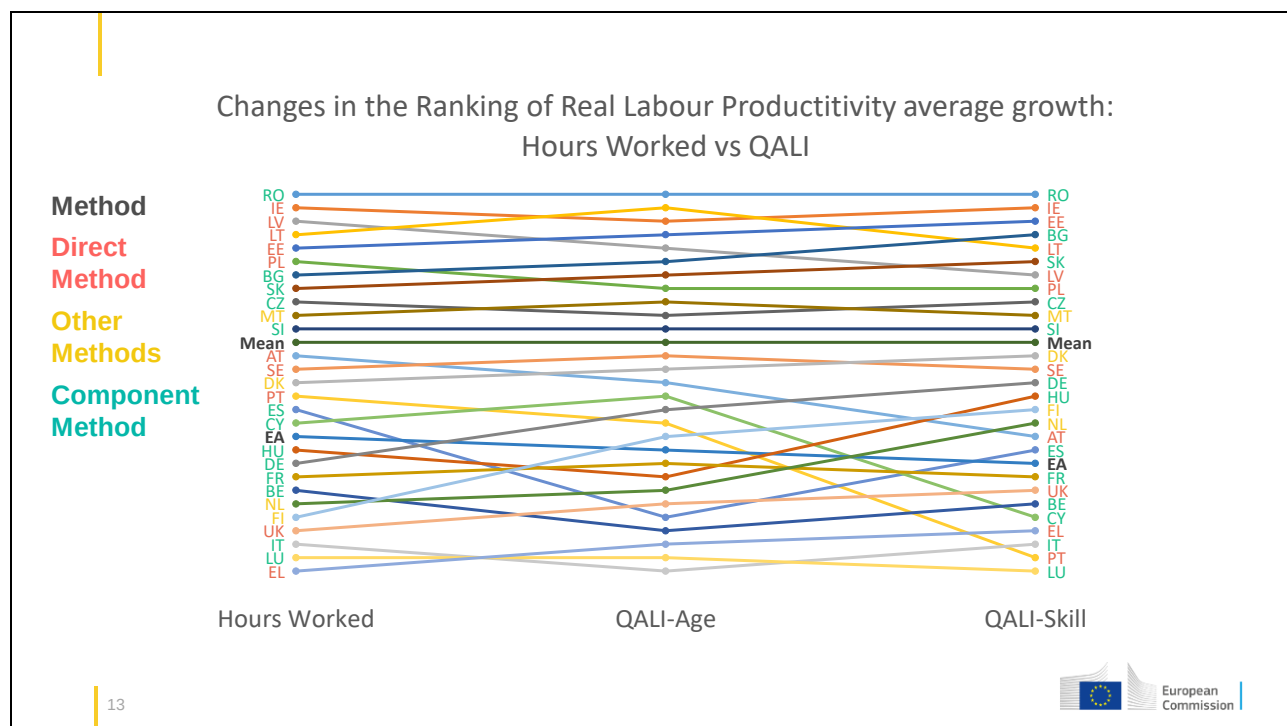
CM: Annualizes Usual Hours adjusting it with statutory data on absences.



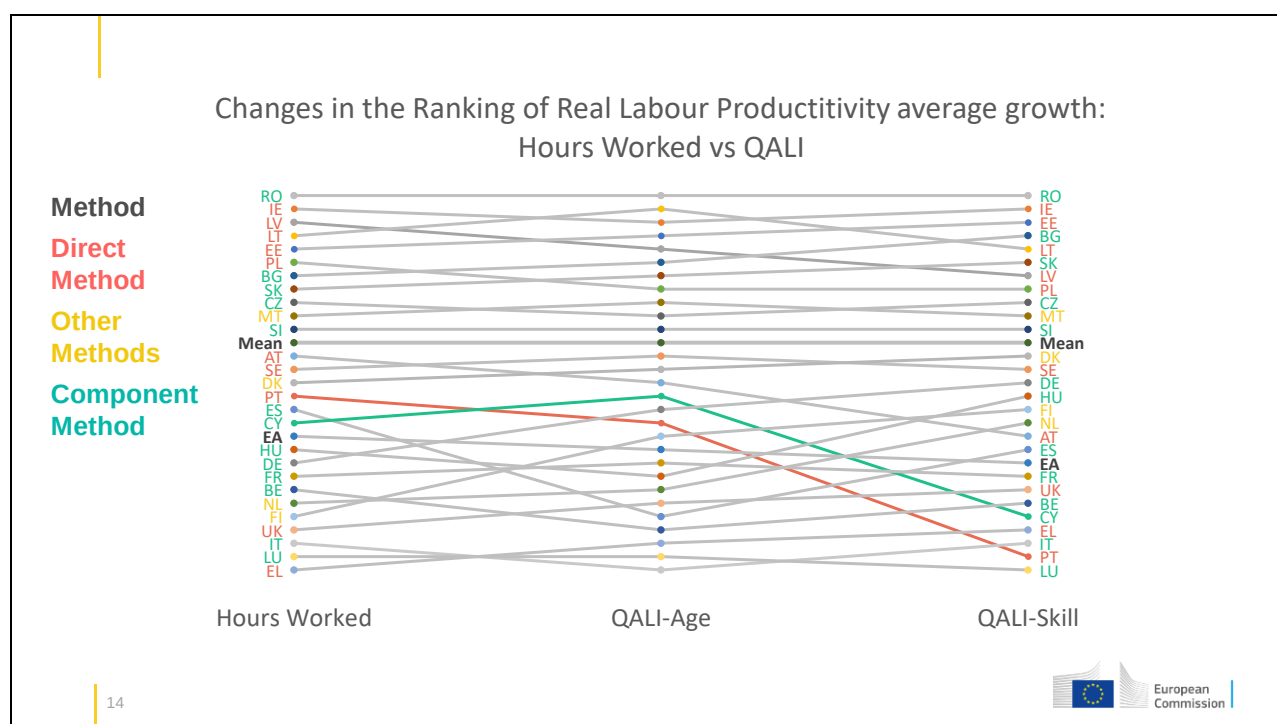
0. High correlation whatever the method for HW, but Correlation DM > Correlation CM
1. Hours more similar to Hours_Age than to Hours_Skill
2. Hours_Age-Skill more similar to Hours_Skill than to Hours_Age
3. Heavier tails in the distributions of DM countries: more volatility (related to usual hours)

3. Makes any difference to consider the composition of the workforce?

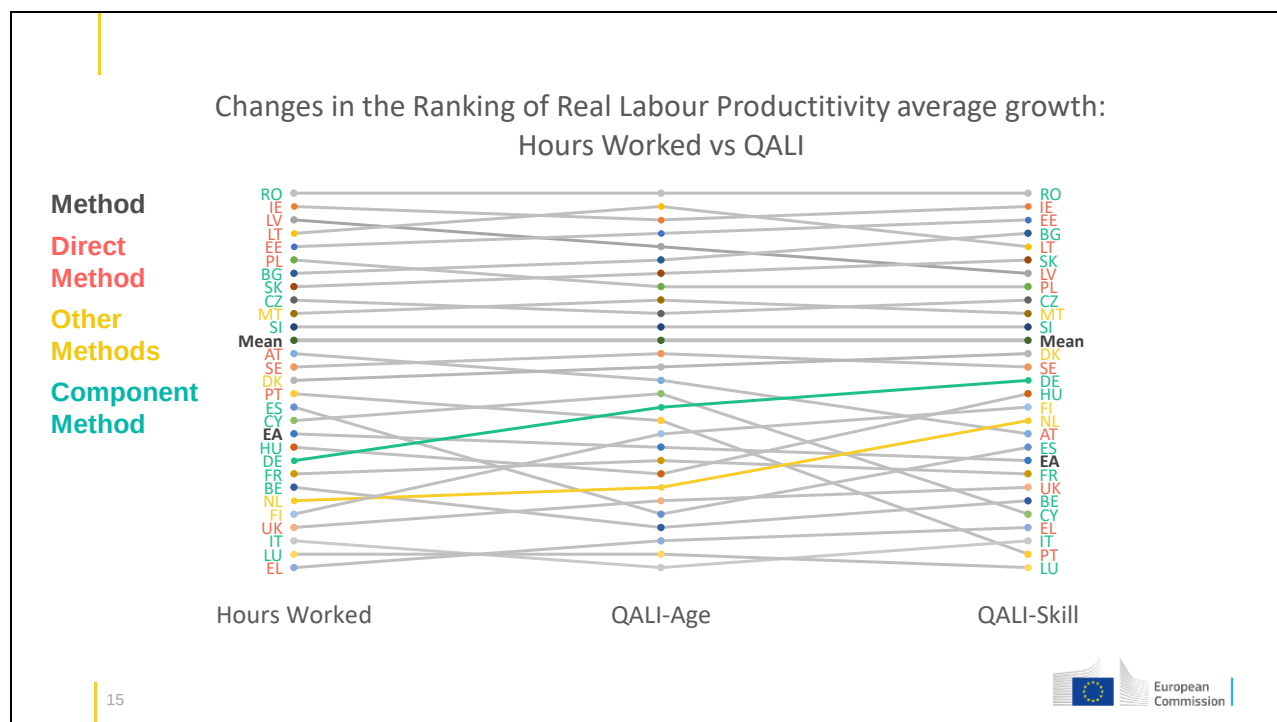




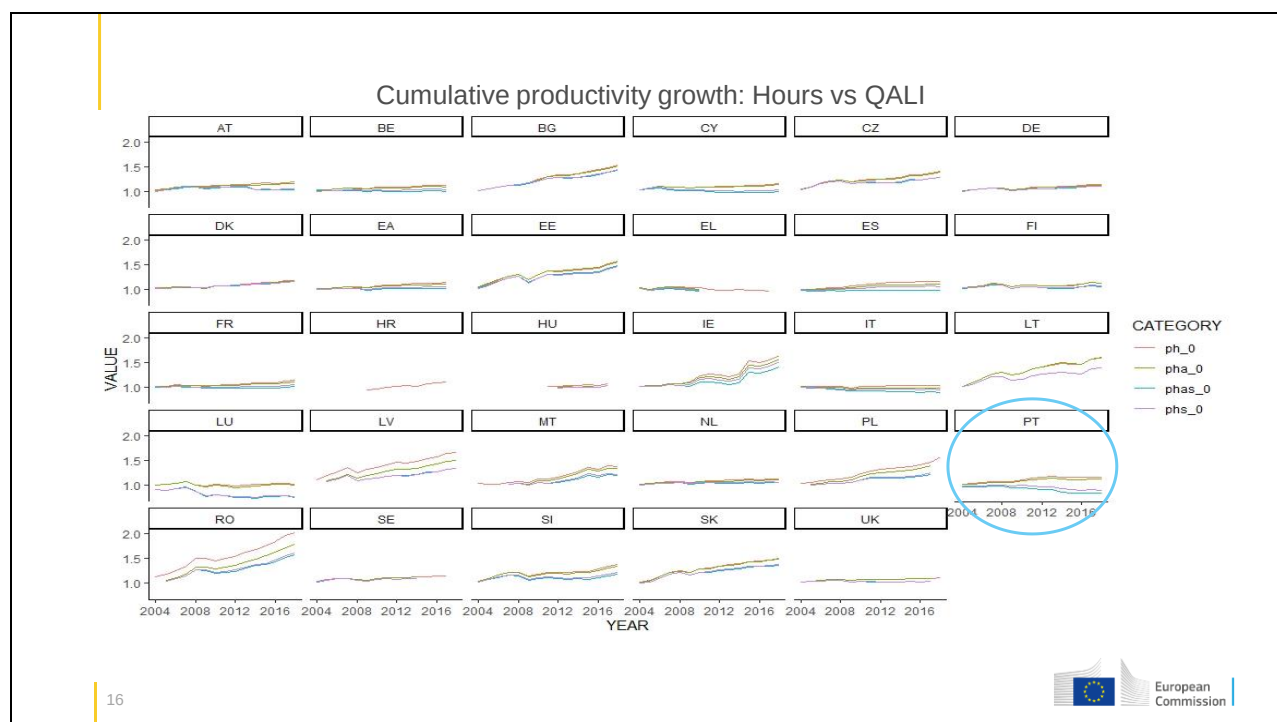
Rankings change, specially in top and bottom



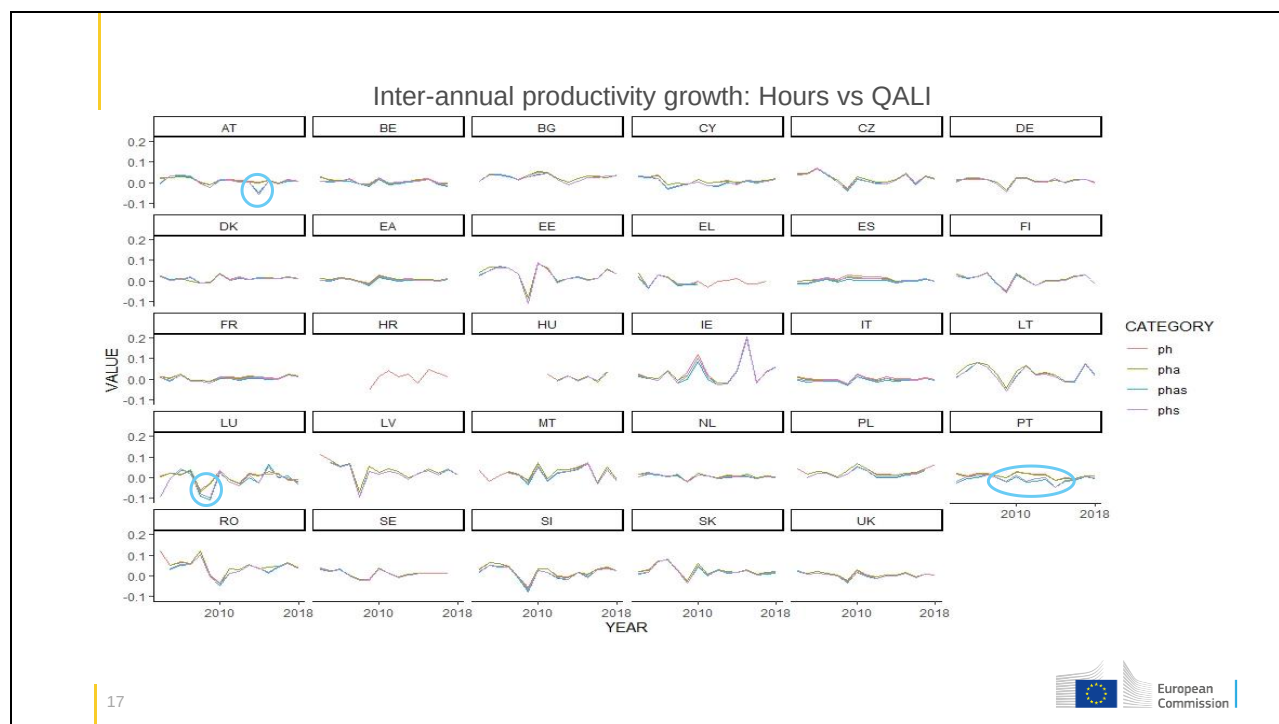
Some countries downgrade



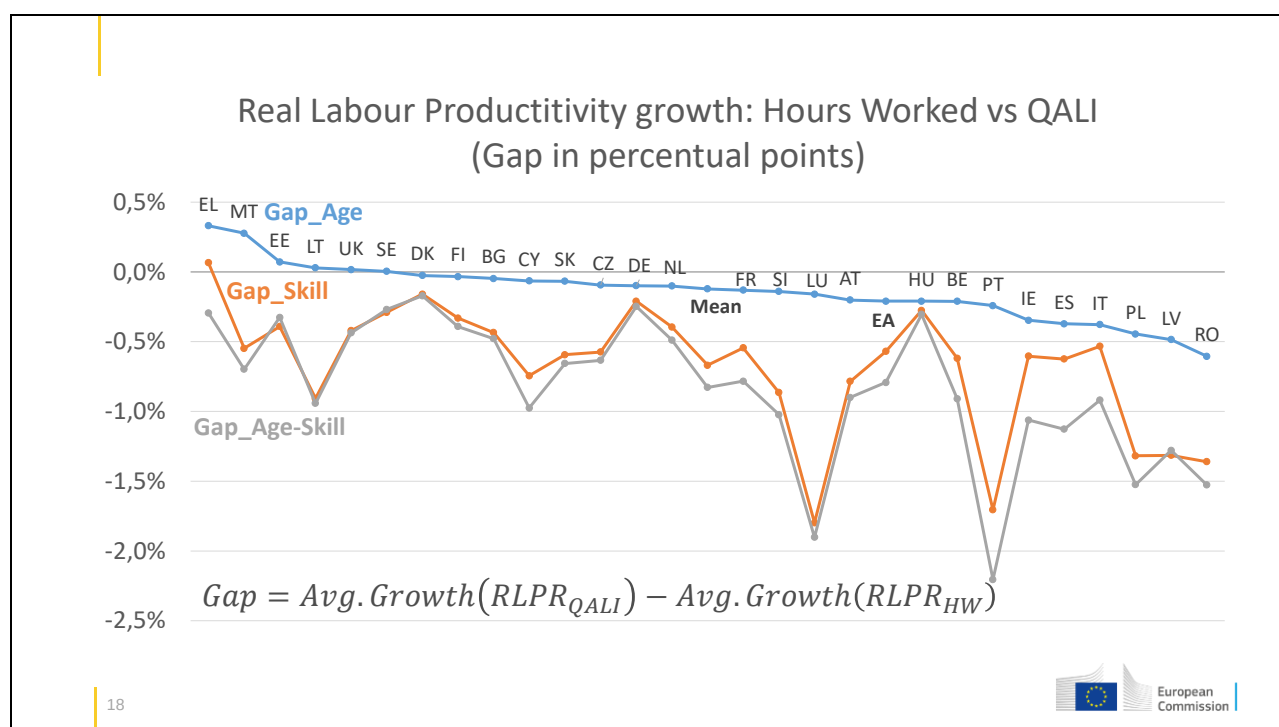
And others upgrade



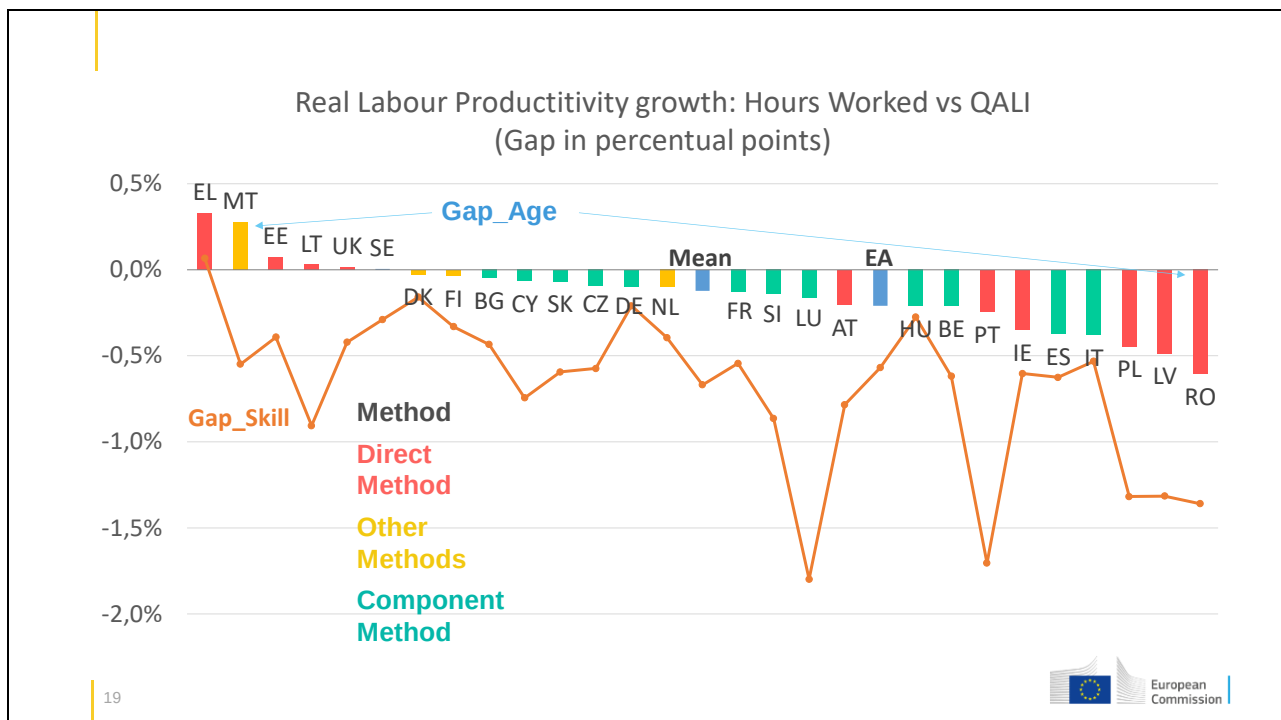
Cumulative gap reduces productivity growth specially in PT, CY and IT where it turns negative growth



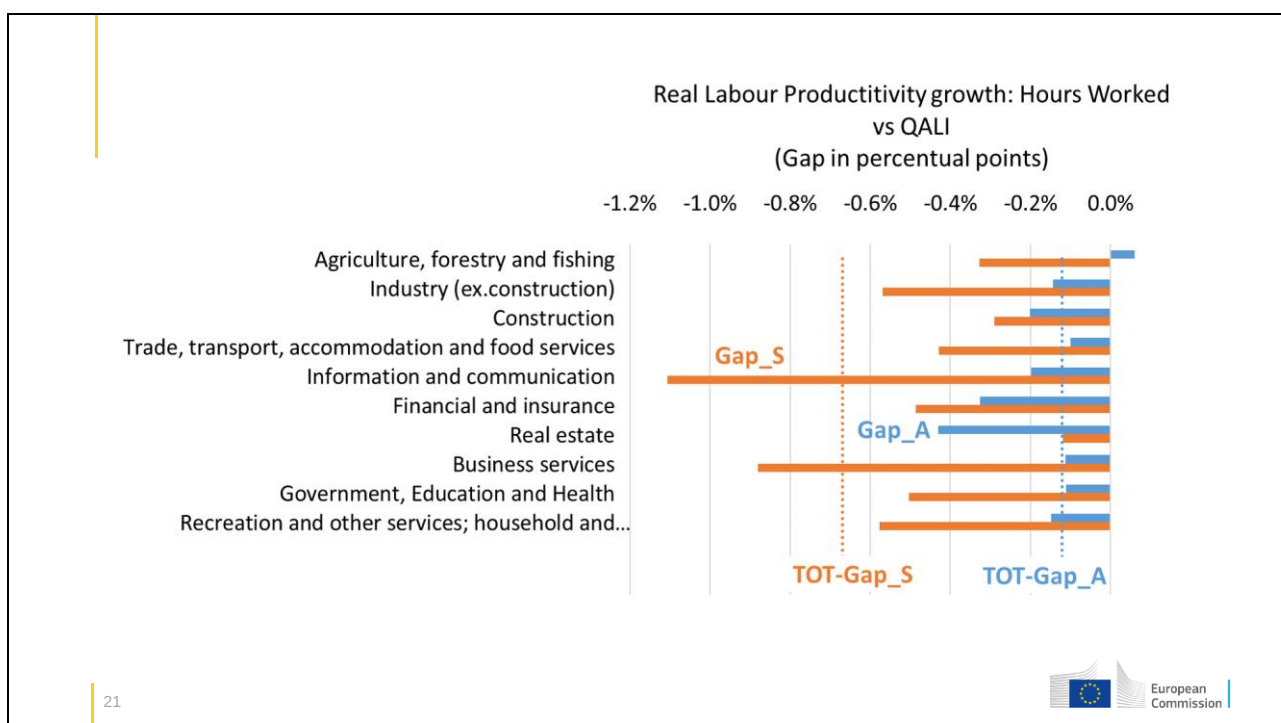
Gaps in specific years in AT, LU and Portugal (Financial Crisis) widen the cumulative gap



Gap_Age is smaller than Gap_Skill and this difference is country specific
Gap is mostly negative, this is HW tend to overestimate productivity growth

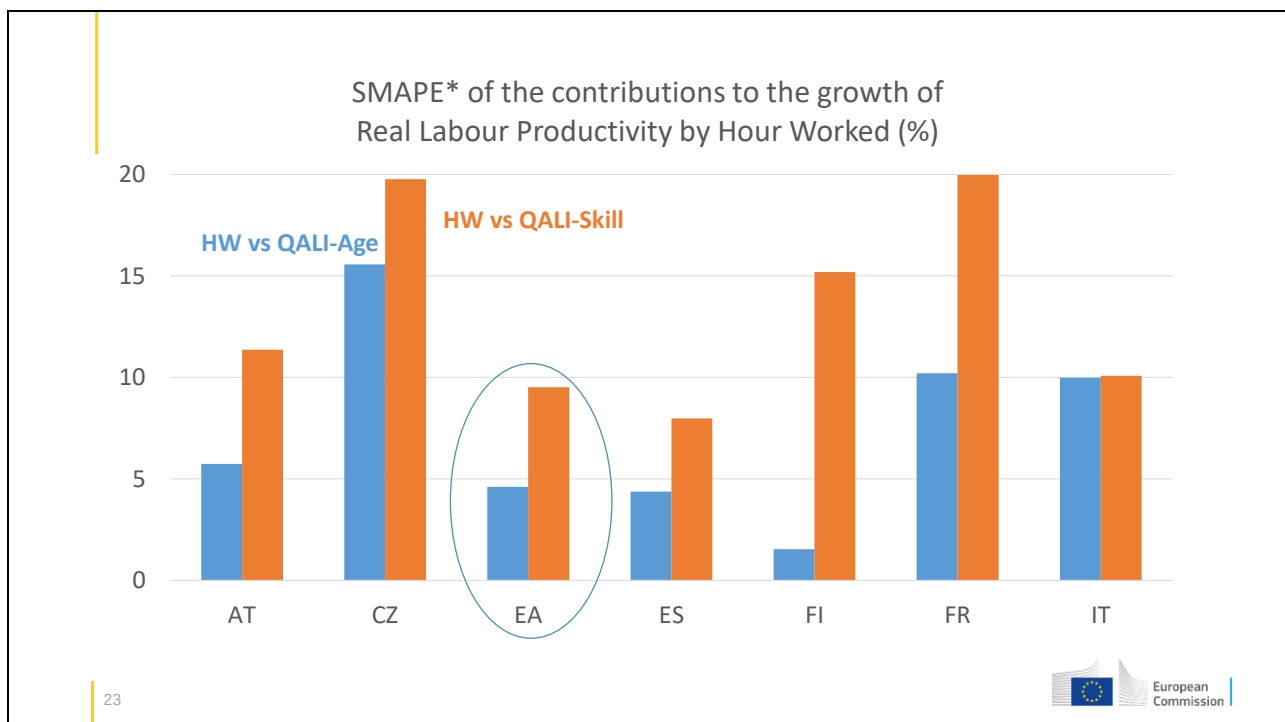


Gap_Age is smaller than Gap_Skill and this difference is country specific
 Gap is mostly negative, this is HW tend to overestimate productivity growth
 Gap_age dominated correlated with Methods HW (largest in absolute values are DM)

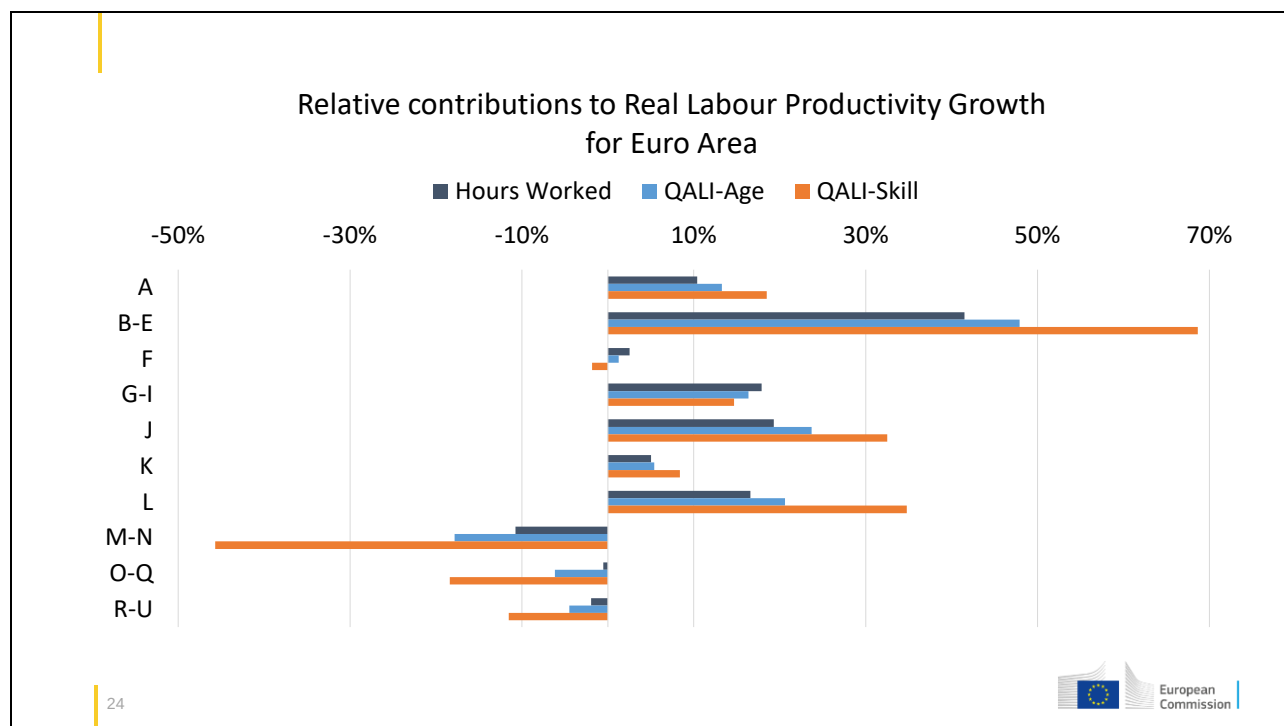


Gap_Age is smaller than Gap_Skill and this difference is industry specific: NACE J and MN are far larger (lot of high skill workers) NACE F (small difference) and L (Gap_A > Gap_S). Gap is mostly negative, this is, HW tend to overestimate productivity growth

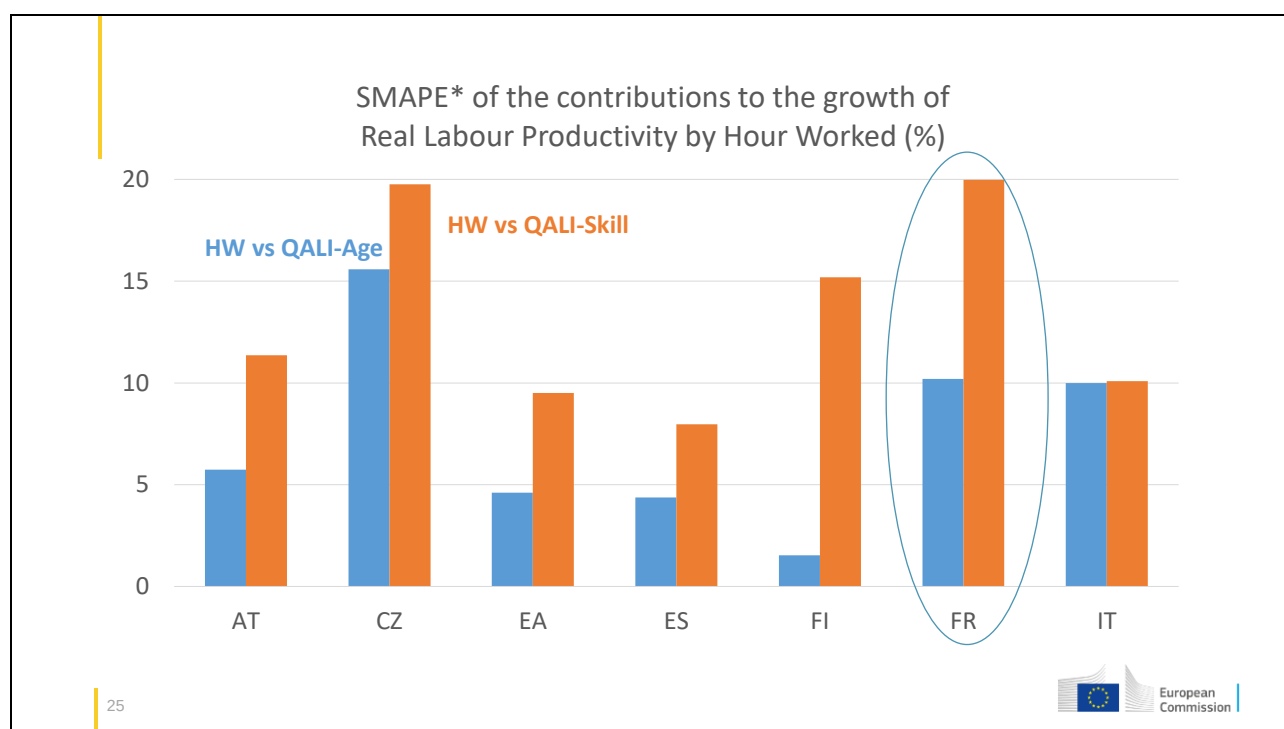
4. Contributions



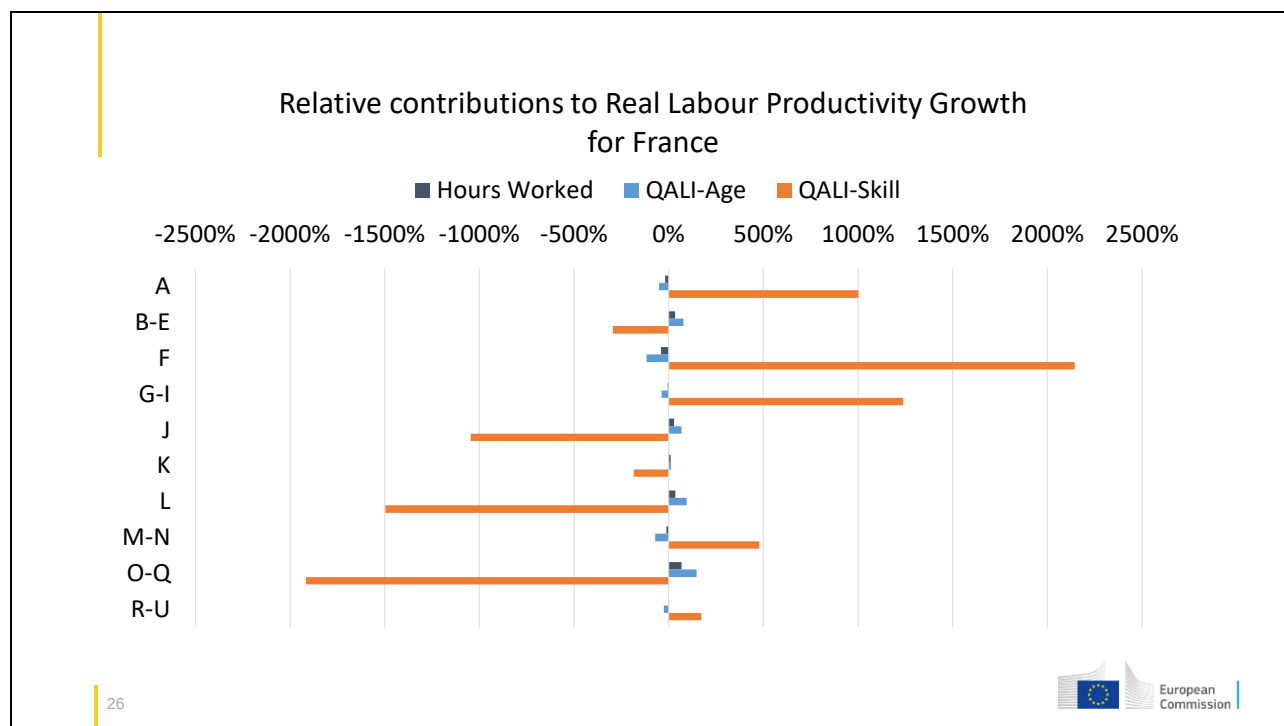
Industry contributions to growth change when considering QALI and labour force composition
The difference is larger considering skill than age



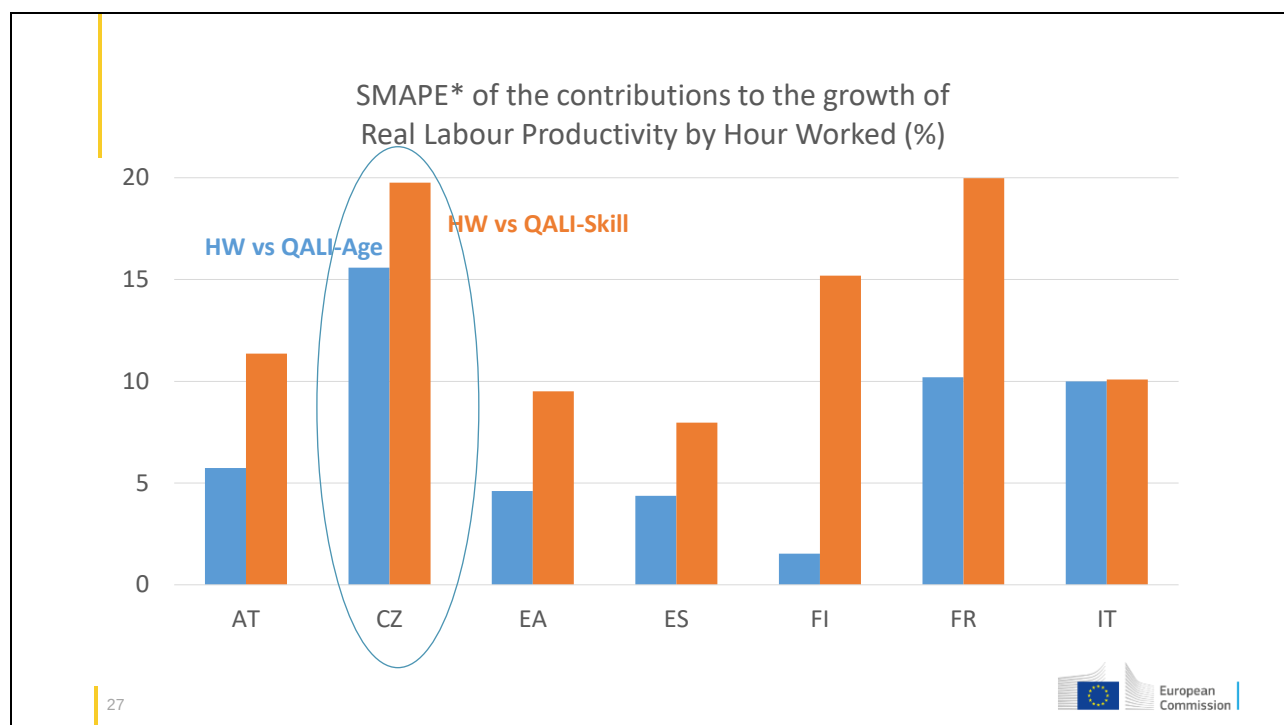
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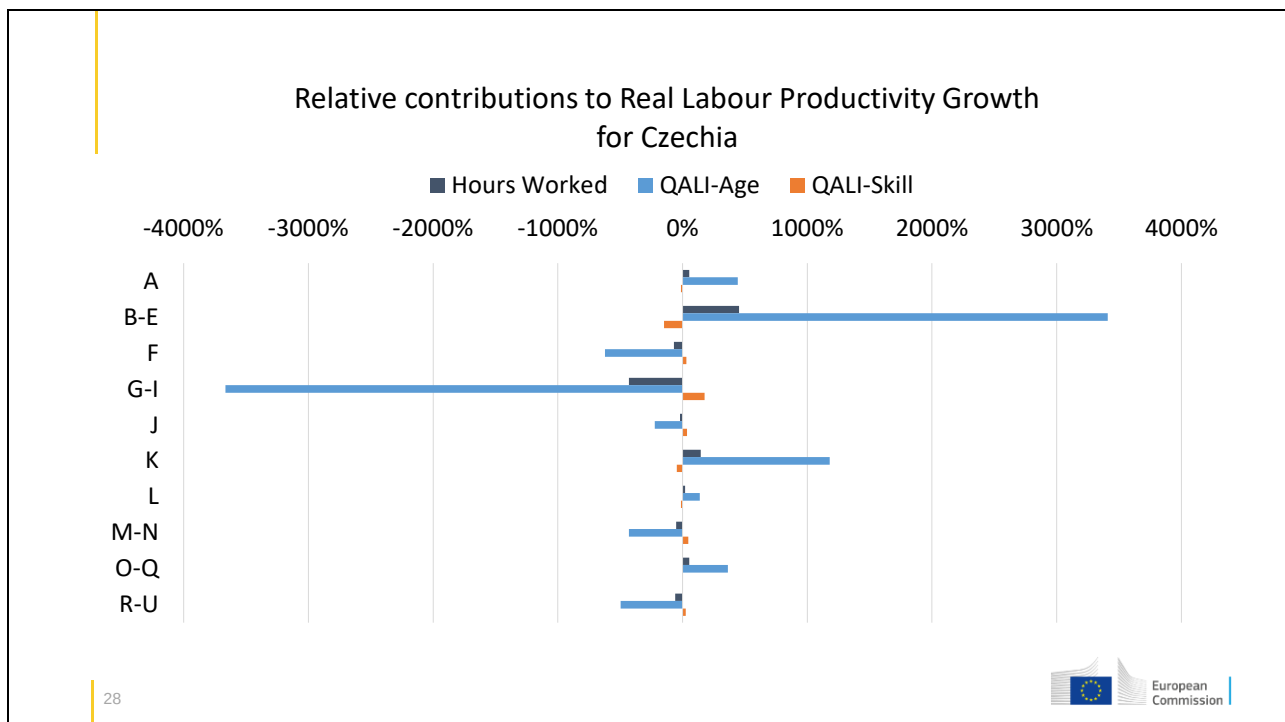


Dif in skill even change sign what drives the SMAPE to its maximum (20)



Dif in skill even change sign what drives the SMAPE to its maximum (20), with an accordion effect to compensate large positive (negative) shares





Dif in even change sign what drives the SMAPE to its maximum (20) but in CZ Age is more relevant, the only one among available countries.

5. Conclusions

Conclusions

HW suboptimal → QALI

- Age
- Skill
- Age-Skill

QALI makes a difference

- Rankings change
- Skill more difference than Age: ca.0.5% up to negative growth
- Method HW relevant for Age not much for Skill
- Industry J and MN (high skill), largest gaps

Comparability HW

- High correlation
- $HW \cong Age \neq Skill \cong Age-Skill$
- **DM** heavier tails: volatility

Contributions also change

- Skill more relevant, ex. CZ
- Few countries, twisted sign

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