

Economic Growth in the Habsburg Monarchy 1870-1910: Convergence, Catching-up, Confusion

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Conference

Falling Behind and Catching Up

Southeast Europe and East Central Europe in Comparison

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Motivation

- Convergence between countries or regions considered as an empirical regularity
- The example of the EU shows
 - **convergence** between EU regions (at least until 2008)
(a pattern also found in the US and Japan - *Barro & Sala-i-Martin, 1992*)
 - **convergence** between EU countries (continued)
 - **no convergence** between regions within a country (European Commission, 2014)
- Arguably some similarity between the EU and the Habsburg Empire: complex state structure incl. various nations, autonomous regional authorities,...(see e.g. Cooper, 2012)

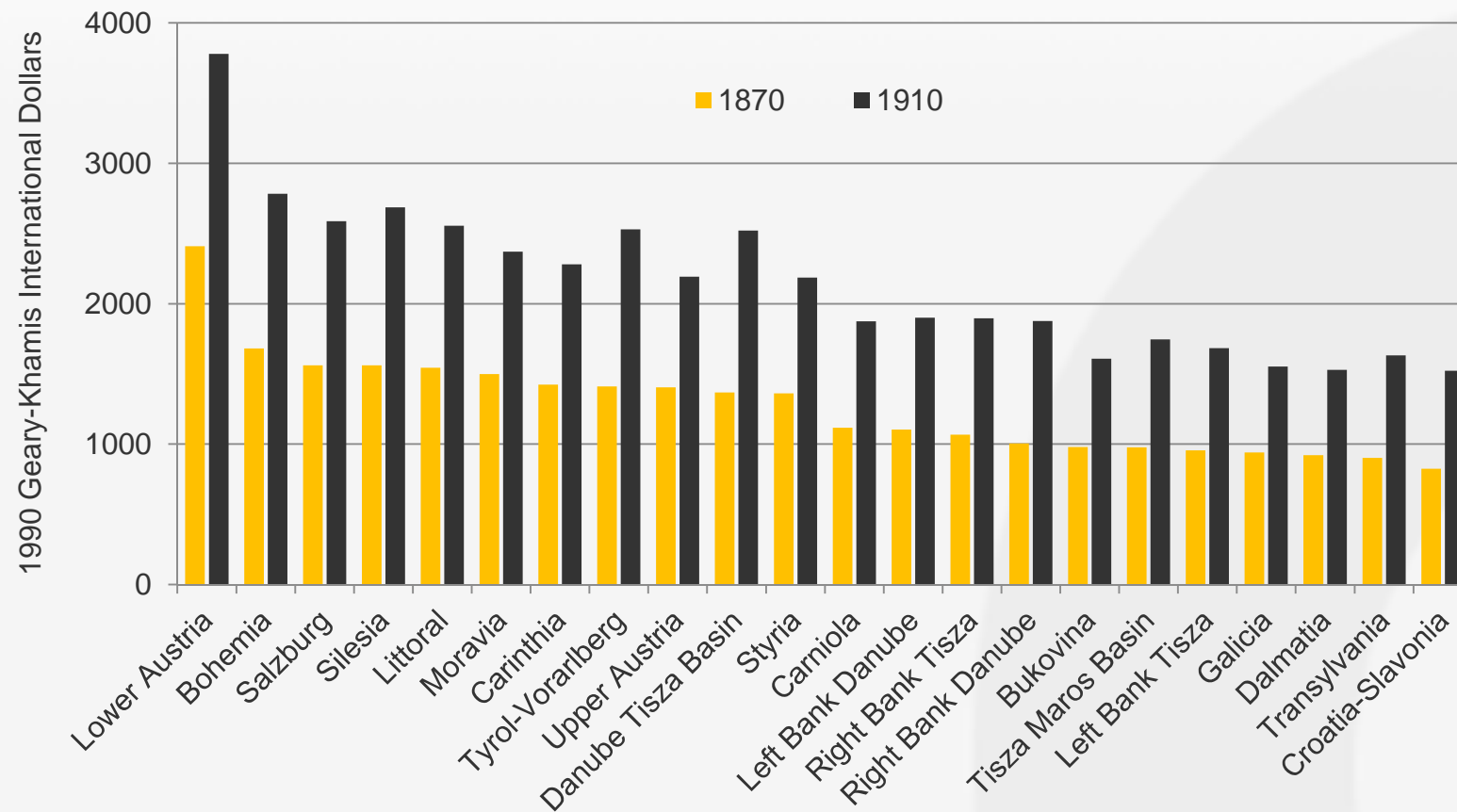
Research Question, Hypothesis & Methodology

- **Research Question:** Is the period 1870-1910 characterised by regional (beta-) convergence between the regions of the Austro-Hungarian Monarchy.
- **Hypothesis:** Poorer regions (with lower capital/output ratio) grew faster
- **Solow model:** neo-classical approach;
convergence channel: accumulation of capital (Solow, 1957; MRW, 1992)
- **Variant: absolute convergence, long term model**
 $growth_r^{1870-1910} = \alpha + \beta \cdot GDPcap_r^{1870} + \varepsilon_r$ (see also Good, 1992)
- Models for **separate convergence effects** for the Austrian regions and the Hungarian regions

$$growth_r^{1870-1910} = \alpha + \beta \cdot GDPcap_r^{1870} + \gamma \cdot (GDPcap_r^{1870} \times AUT) + \theta \cdot AUT + \varepsilon_r$$

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Descriptive Data

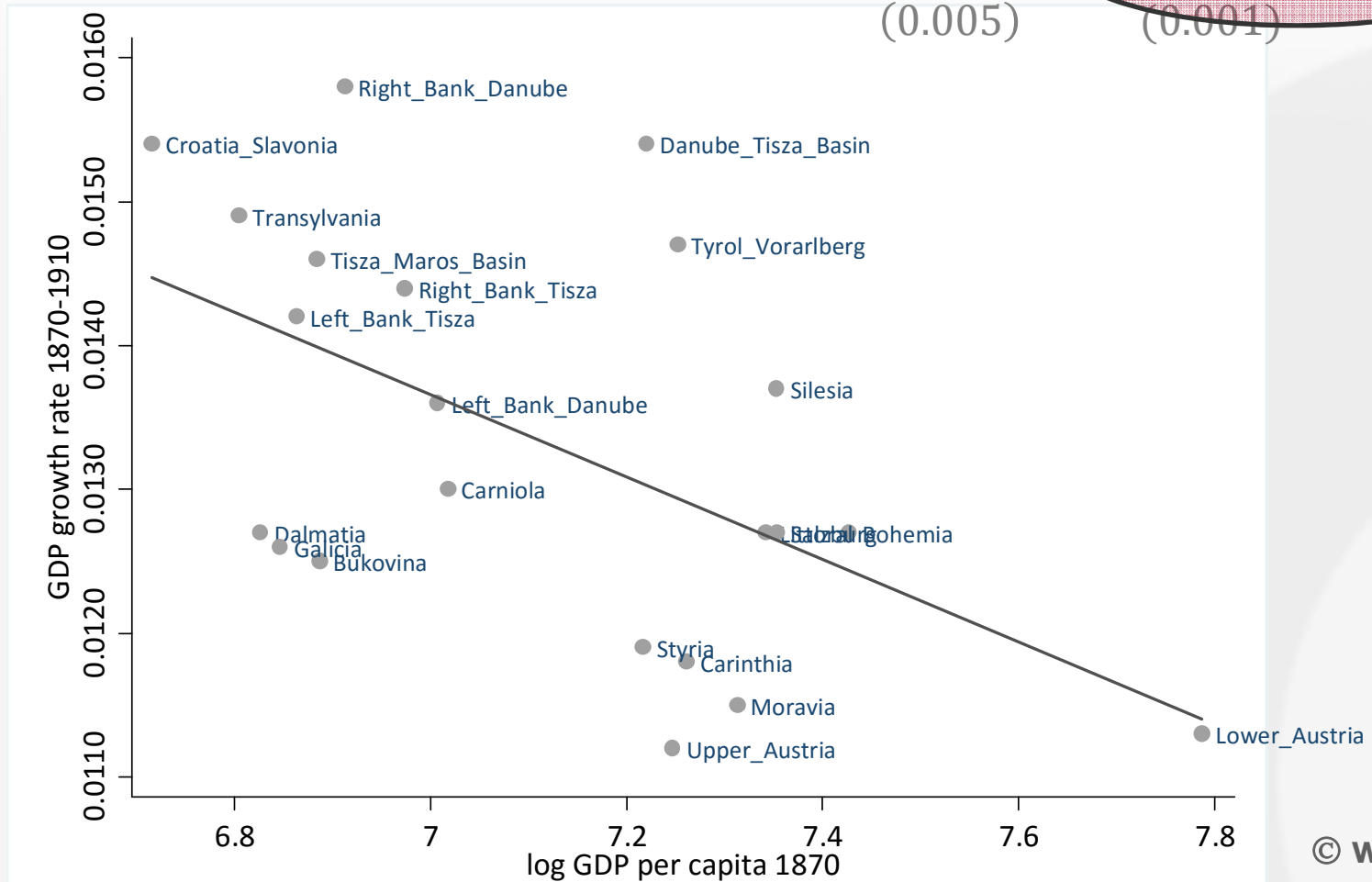
- 22 regions for the period 1870-1910 in 1990 Geary-Khamis \$



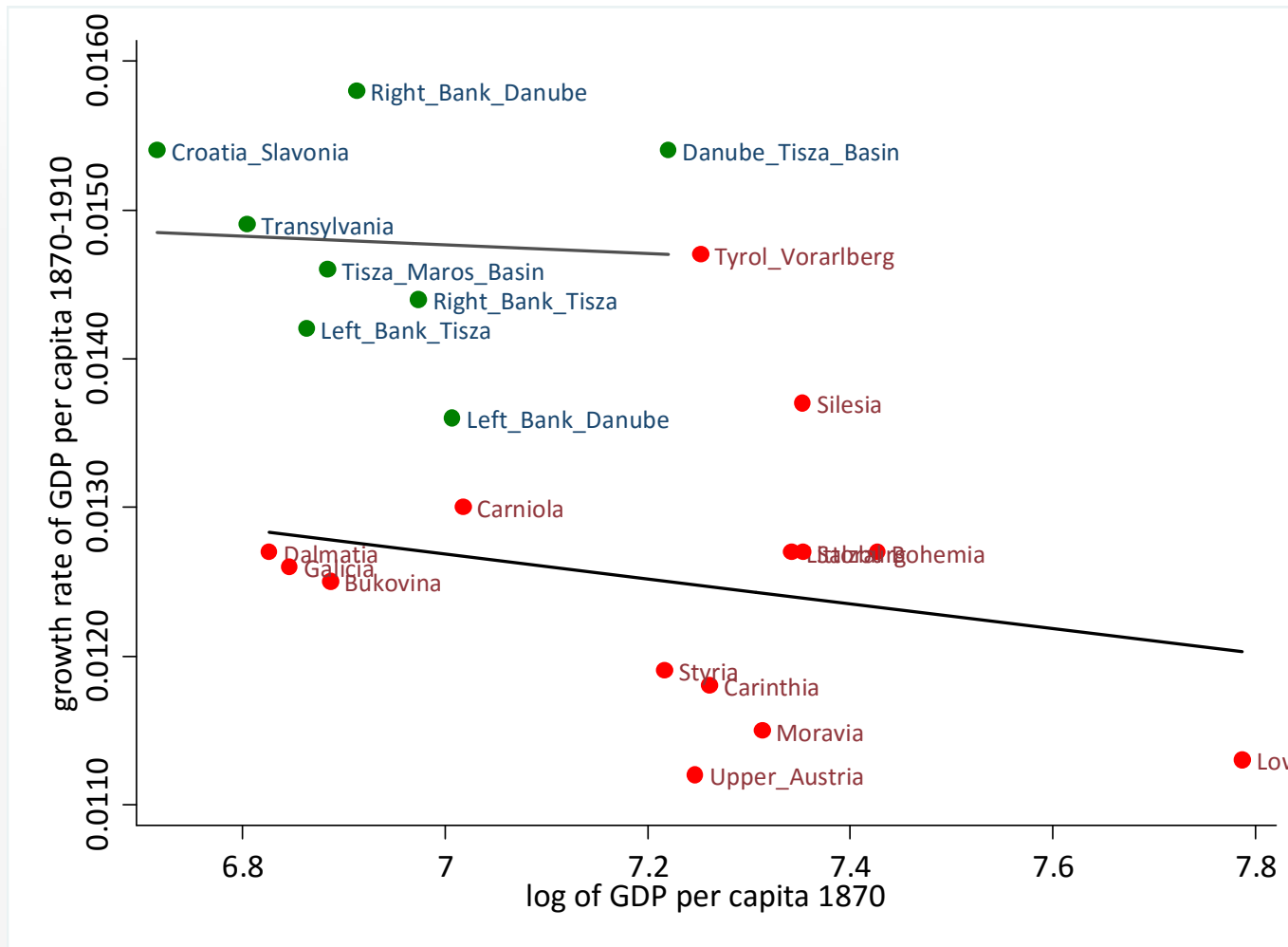
Absolute long-term Convergence (Solow model)

$$growth_r^{1870-1910} = 0.03371 - 0.0029 \cdot GDPcap_r^{1870}$$

(0.005) (0.001)



Convergence in Cisleithania & Transleithania



The Speed of Convergence (Solow Model)

- The convergence coefficient β estimated at -0.0029
- The period τ required to achieve particular change in income is given by

$$\tau = -\frac{\ln\left(\frac{y_r^*}{y_r^0}\right)}{\beta}$$

- With $\beta = -0.0029$, it takes **238 years** for a region to reduce the income gap by half!
- Even if there is a statistically significant result, the ‘strength’ of the convergence process is very low

Confusing Convergence Results

			Data from Good and Ma (1998)		Data from Schulze (2007)	
		estimation technique	cross-section	panel (country & time FE)	cross-section	panel (country & time FE)
		type of convergence				
Solow model	absolute		yes***	no	no	no
	conditional	Empire wide	yes*** (literacy rate)	yes***	yes*** (literacy rate)	yes***
		within entities	no	yes (> for Hungary)	no	yes (> for Hungary)
Schumpeterian model	absolute		yes***	yes*	yes*	yes**
	conditional	Empire wide	yes** (distance to Vienna)	yes***	no (distance to Vienna)	yes***
		within entities	no	yes***	no	yes***

Evidence for convergence?

Conclusions

- Hungarian regions grew stronger than the Austrian regions
- Evidence for absolute regional convergence within the Dual Monarchy
- Very low rate of convergence
- No evidence for absolute regional convergence within the two entities of the Empire
- Long term convergence pattern within the Habsburg Empire resembles that of the EU
- Robust evidence for conditional convergence (even when differentiating between the two entities) when controlling for unobserved country characteristics .

Thank you for
your Attention!

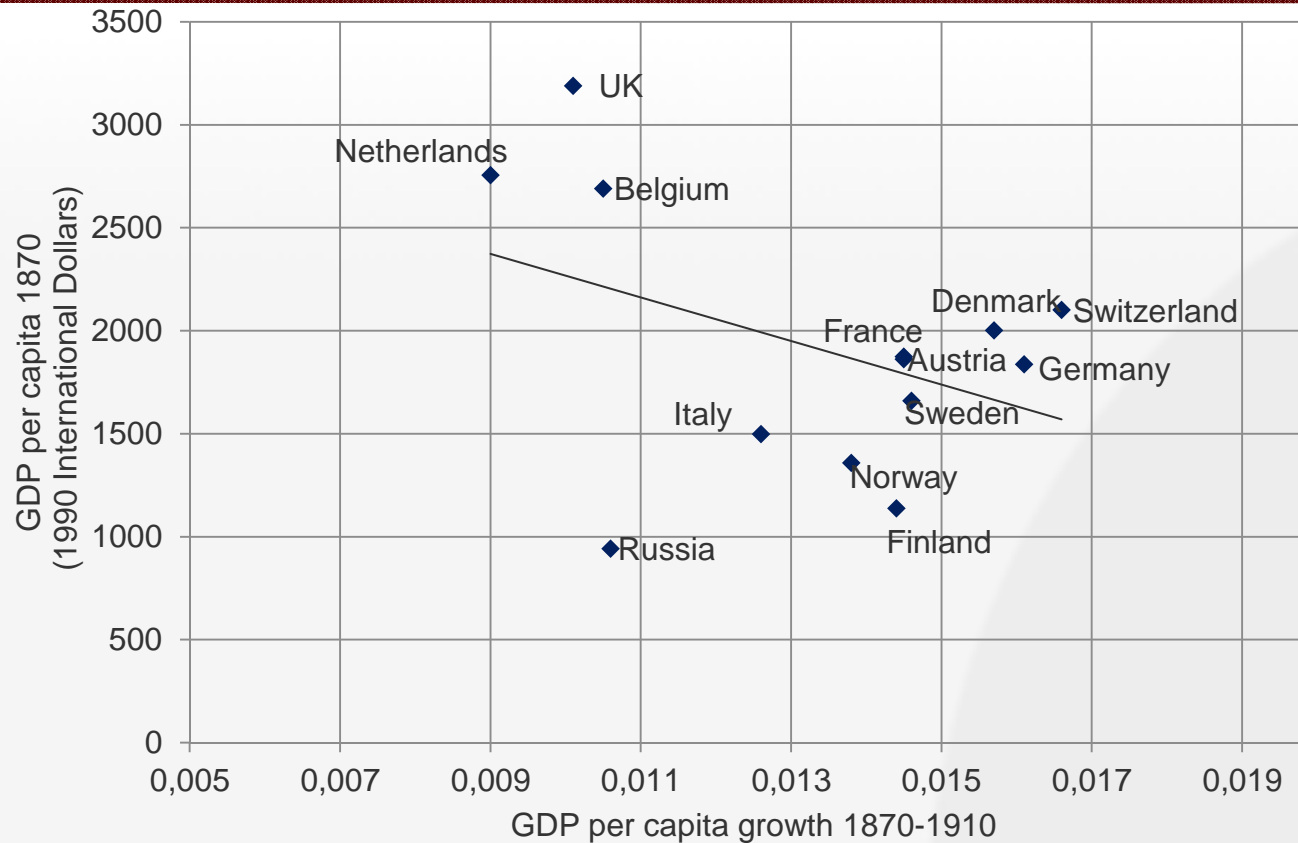
Framework Conditions 1870

- Austria-Hungary is a latecomer with respect to industrialisation
- Austrian half moderately backward, Hungarian half extremely backward (Gerschenkron)
- Free labour force due to Ground Release Act (Grundentlastung) in (1848)
- Elimination of internal tariffs (“Zwischenzölle“) in (1850) und creation of a common economic and customs union (1867)
- Economic boom period in 1867-1873
- Stock market crash 1873

Conditional Convergence (Schumpeterian model)

Dependent variable:	10-year growth rate of GDP per capita			10-year growth rate of GDP per capita		
Data source:	Good and Ma			Schulze		
Specification	(A1.MA)	(C1.MA)	(C2.MA)	(A1.S)	(C1.S)	(C2.S)
Convergence test	absolute	conditional		absolute	conditional	
gap-to-UK	0.0072 * (0.004)	0.1815 *** (0.021)	0.2398 *** (0.050)	0.0106 ** (0.005)	0.1312 *** (0.028)	0.1921 *** (0.058)
literacy rate		-0.0034 (0.009)			-0.0094 (0.008)	
gap-to-UK x AUT			-0.0775 (0.053)			-0.0753 (0.079)
Region FE	no	yes	yes	no	yes	yes
Time FE	no	yes	yes	no	yes	yes
F-test	4.12	38.91	56.76	4.63	10.17	11.02
R ²	0.053	0.569	0.580	0.046	0.659	0.661
R ² -adj.	0.042	0.385	0.400	0.035	0.514	0.517
obs.	88	88	88	88	88	88

Convergence at the European Level (1)

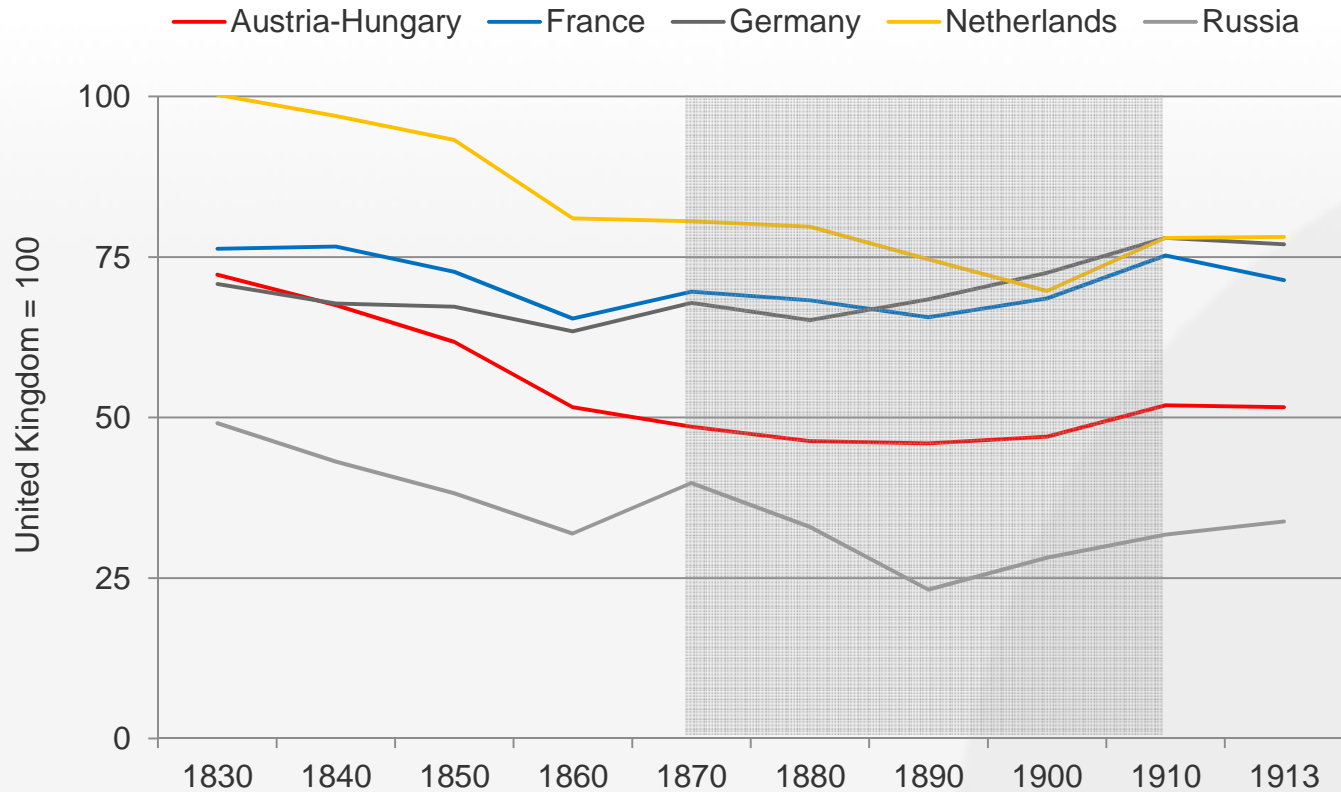


Anmerkung: Länder gemäß modernen Grenzen.

Source: Maddison (2001).

- Österreich-Ungarn in der Gruppe der Aufholländer
- Konvergenz nicht idealtypisch

Convergence at the European Level (2)



Anmerkung: Länder gemäß historischen Grenzen.
 Source: Bairoch (1976), eigene Berechnungen.

- Industrialisierung in Österreich-Ungarn mit Verzögerung
- Aufholphase beschränkt auf die Periode 1890-1910
- BIP pro Kopf Wachstum: **Ö-U**: 1,08%/ 1,10%/1,28% ; **UK**: 0,91% p.a.