Economic Growth Across the Swedish Regions Last Century with some focus on the Värmland Region

The measure of standard-of-living is:

GDP per capita or GNP per capita
(production measure) (income measure)

GNP = GDP + net factor income from "abroad".

$$\frac{GDP}{Population} = \frac{GDP}{Employment} \cdot \frac{Employment}{Population}$$

Two ways to increase GDP per capita:
By raising labor productivity, e.g. by increasing physical and human capital per employed.
By a larger proportion of the population in employment.

***Main lesson of empirical work on growth*:**

Per capita income tends over time to converge across economies, which are similar with respect to "institutions".

$\Rightarrow$

An economy with an initially relatively low income per capita tends to have a higher growth rate of income per capita than an economy with an initially relatively high income per capita if "institutions" are similar.

Example: EU-countries, regions within countries.

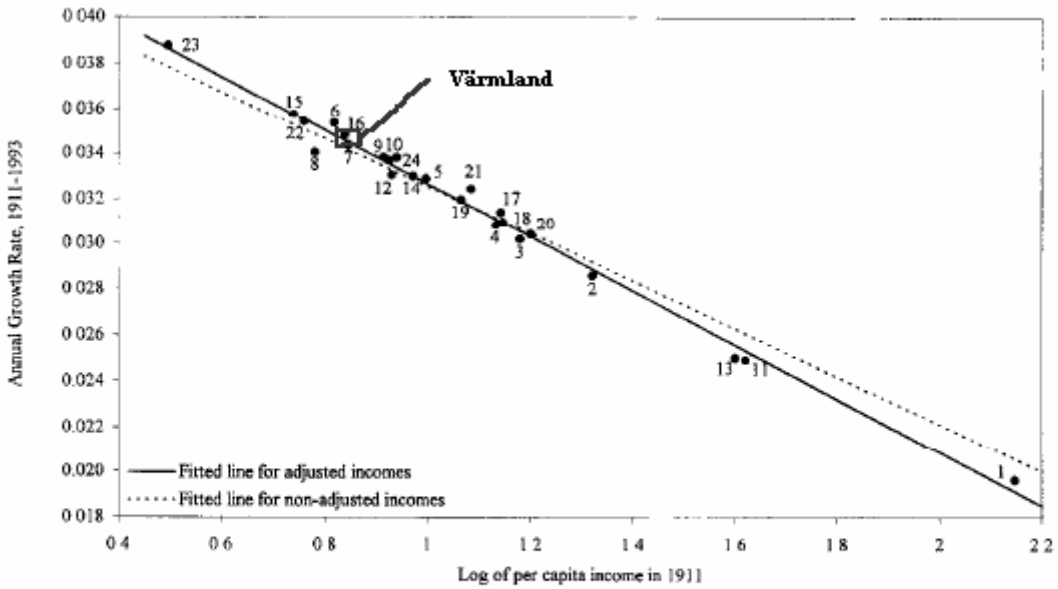


Fig. 2. Average annual per capita income growth rate 1911–1993 and the log of per capita income in 1911 (in 1980 prices and thousands of kronor).

Between 1911 and 1993 the growth rate of per capita income in Värmland was higher than the country average

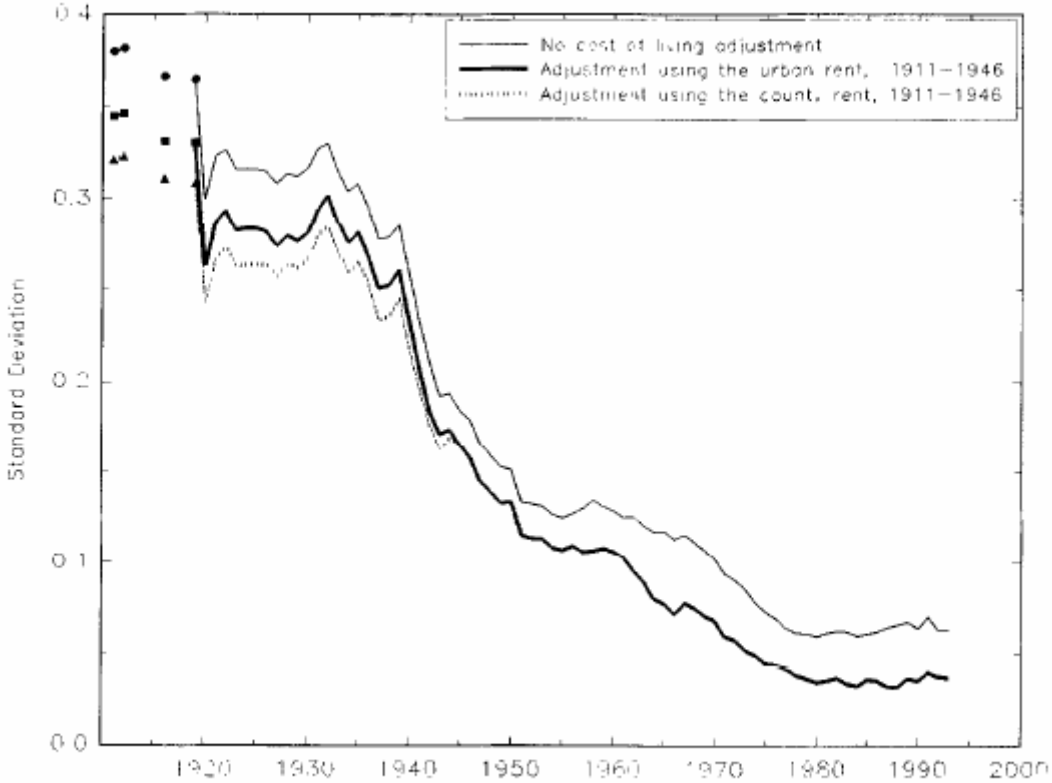
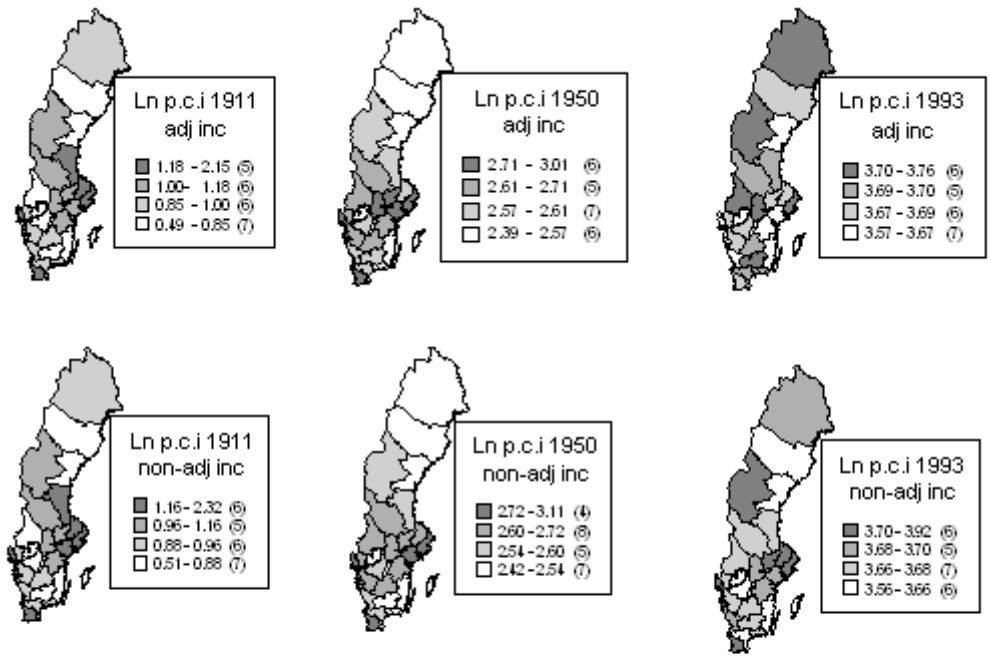


Fig. 4. Dispersion of the log of per capita income across the Swedish counties, 1911–1993.

Higher growth rates in poor counties caused
relative differences in per capita income to diminish
across the Swedish Counties between 1911 and 1993

The dispersion is lower for per capita income when it is
adjusted for regional differences in cost of living
as counties with high unadjusted per capita incomes tend to
have high cost of living

Per capita Income adjusted and unadjusted for cost of living



Värmland moves to top category of per capita income
when regional differences in cost of living are accounted for in 1993

Per capita income (p.c.i) is in 1980 prices

The evidence on convergence in per capita income across the Swedish Counties is consistent with predictions of textbook model:

Low per capita income
$\Leftrightarrow$ little capital (physical + human) per worker,
low wages, high rate of return to capital
$\Rightarrow$ **large investments in capital**
$\Rightarrow$ capital per worker $\uparrow$
$\Rightarrow$ production per worker $\uparrow$
$\Rightarrow$ income per capita $\uparrow$

Also $\Rightarrow$ low wages
$\Rightarrow$ out-migration
$\Rightarrow$ capital per worker$\uparrow$
$\Rightarrow$ production per worker $\uparrow$

Other Variables

Apart from initial level of per capita income,
Investment/GDP and Educational level
are typically found to have a positive effect
on the growth rate of GDP per capita in empirical studies

Some findings for the Swedish Regions 1911-93 are:

Population density

Zero effect

Being near a rich neighbour or *a large market*

A positive effect

A rich neighbour may increase trade and provide jobs.
For Värmland proximity to Norway often mentioned.

Net-in migration

Negative effect

Results broadly consistent with other studies. However,
The effect of In-migration is zero (or negative) in other studies