

Inequality and Technical Change



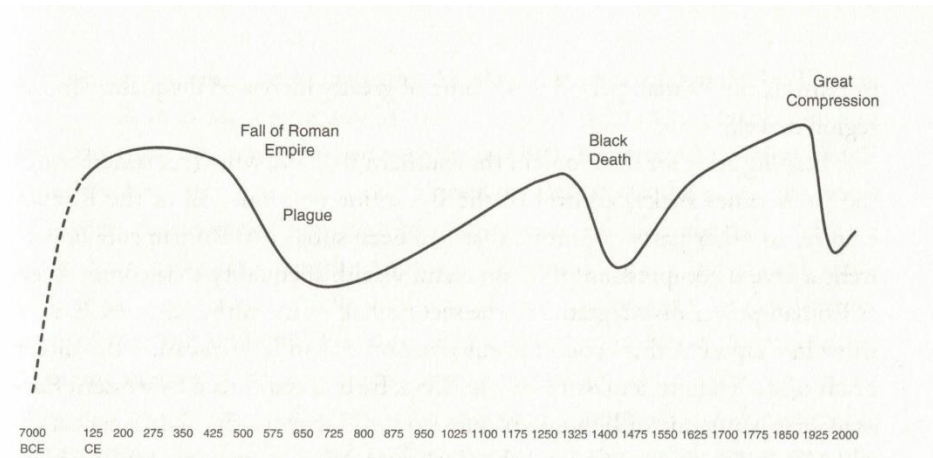
Per Molander
UNDP-RISE Workshop,
March 26, 2018

Questions

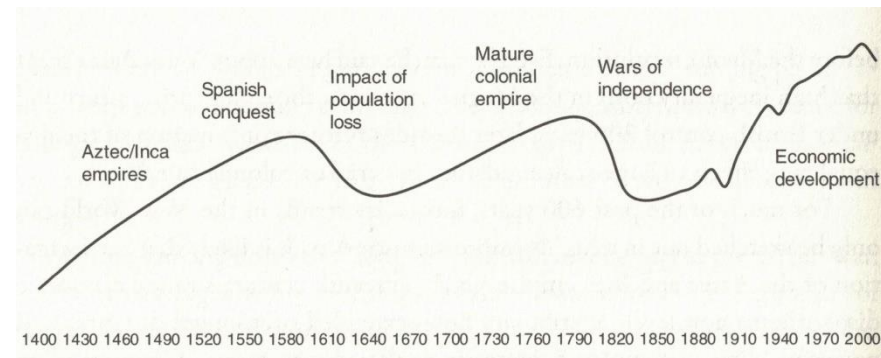
- What is the origin of inequality?
- Can inequality be affected?
- What is the relationship between technical change and inequality?

Inequality – the broad picture

Europe



Latin America



Source: Scheidel, W. (2017)

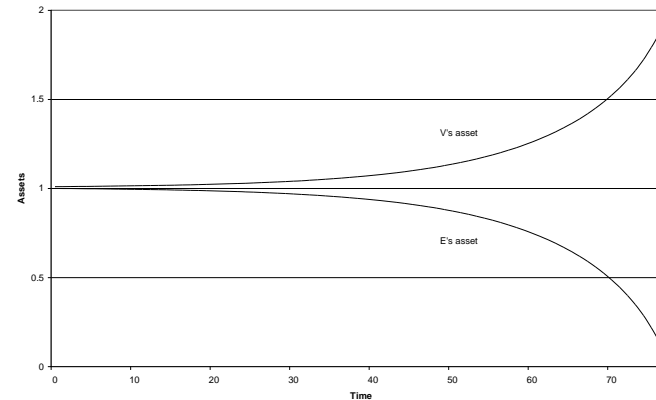
Suggested explanations for inequality

- Differences in aptitude, creativity etc.
- Differences in willingness to work
- Violence, crime etc.
- Luck
- Heritage

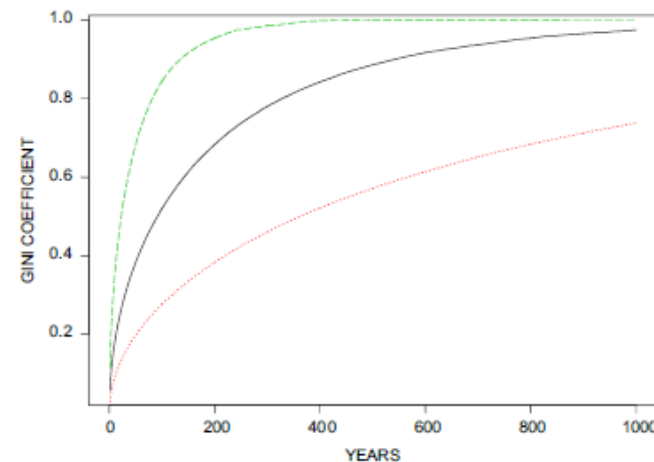
All the above factors are *static*. A better approach is to look for *dynamic* explanations.

An inherent tendency towards inequality in negotiation and market economies

Negotiation according to Nash



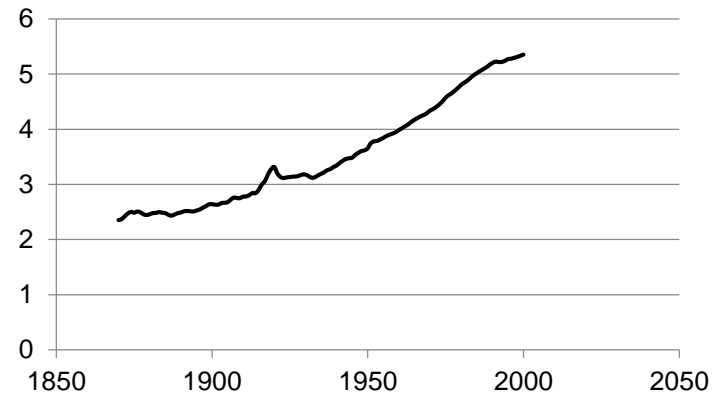
Market economies



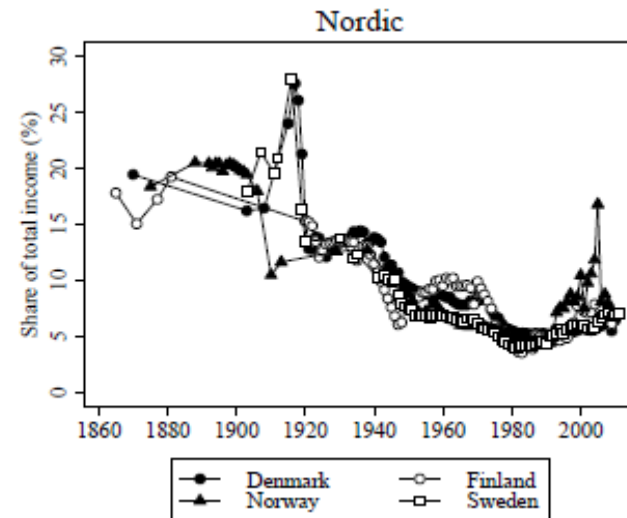
Source: Fernholz & Fernholz, *J. Econ. Dyn. & Control* 44, 251-269 (2014).

Economic growth and inequality in the Nordic countries, 1870-2000

Economic growth
(Sweden, log scale)



Inequality (top percentile share of total income)



SDGs

Political goals

- Eliminating poverty
- Gender equality
- Equality
- Economic growth
- Sustainable consumption and production
- Peaceful, inclusive societies

Environment

- Climate change
- Marine resources
- Terrestrial ecosystems

Man-made systems

- Food production
- Health care
- Education
- Water and sanitation
- Energy
- Infrastructure
- Urban settlement

Implementation

Technical change and equality, examples

Sector	Technical change	Effects on equality
Food production	<ul style="list-style-type: none"> - Green revolution - Consultancy via cell phone 	Positive/negative Positive
Health care	<ul style="list-style-type: none"> - New contraceptives - Consultancy via cell phone 	Positive/neutral Positive
Education	<ul style="list-style-type: none"> - Distance learning 	Positive/negative
Water & sanitation	<ul style="list-style-type: none"> - Inexpensive purification - Dams - Toilet facilities 	Positive Positive/negative Positive
Energy	<ul style="list-style-type: none"> - Local solar electricity gen. - Solar energy cooking facilities 	Positive/negative Positive
Infrastructure	<ul style="list-style-type: none"> - Inexpensive local transport - Cell phone network - Local internet access 	Positive Positive/negative Positive/negative
Urban settlement	<ul style="list-style-type: none"> - As above 	Idem

Summary

- In the absence of policies to the contrary, there is a tendency for inequality to grow.
- There is no general causal link between technical change and inequality – effects can go either way.
- Baseline forecast: Technical change will lead to increased inequality. This effect will be stronger to the extent that technical change is market-driven.

Literature

- Fernholz, R., & Fernholz, R. (2014): *J. Econ. Dyn. & Control* 44, 251-269.
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