

# The Demographic Transition

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Economic Growth and Comparative Development

## Phases of Development: Standard of Living

- The Malthusian Epoch

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- The Malthusian Epoch
- The Post-Malthusian Regime

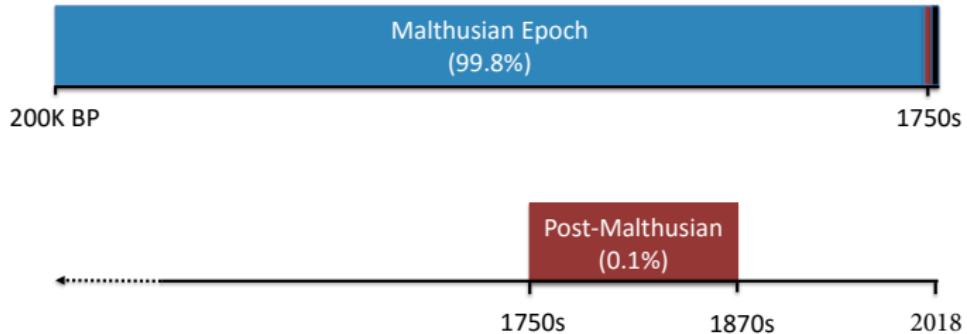
## Phases of Development: Standard of Living

- The Malthusian Epoch
- The Post-Malthusian Regime
- The Modern Growth Regime

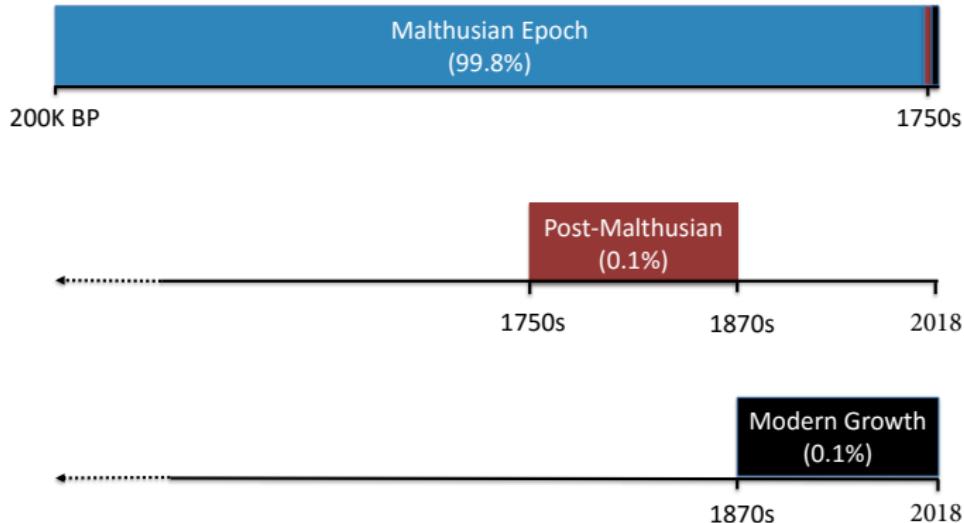
## Phases of Development: Timeline of the Most Developed Economies



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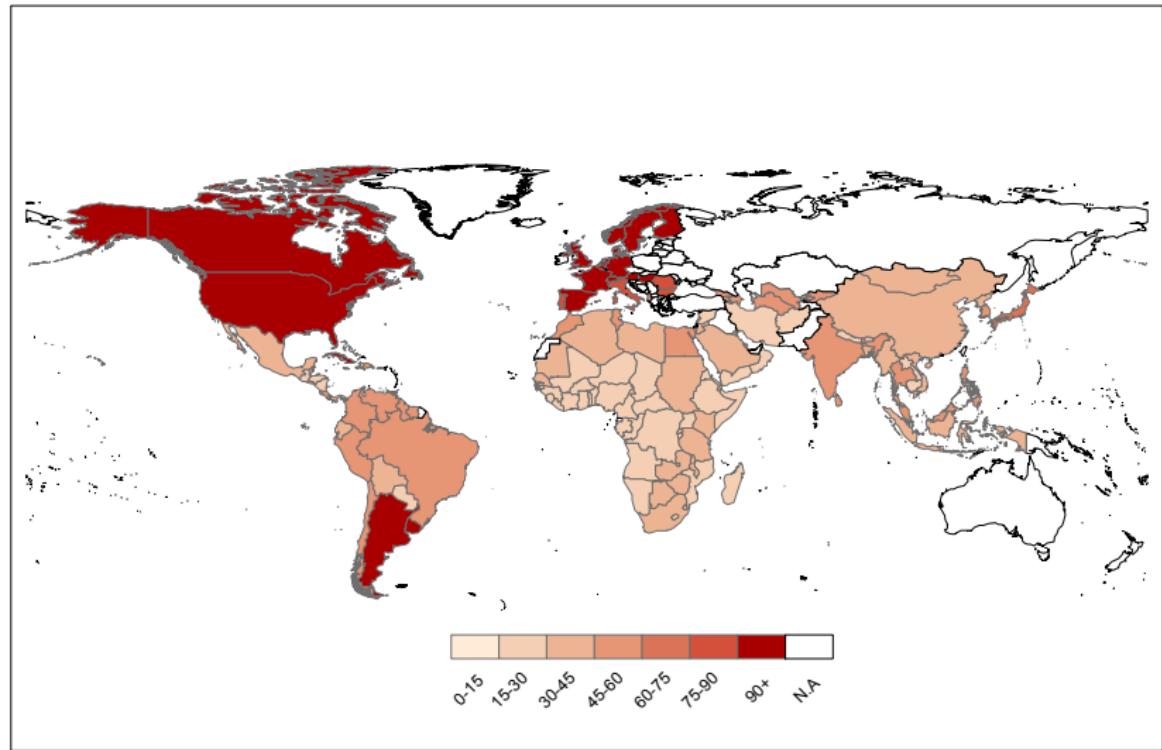
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- The impact of technological progress on output per capita are no longer counterbalanced by population growth
- Transition to Modern Growth

## Variation in years elapsed since the Onset of the Fertility Decline



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⇒ population growth excluding migration

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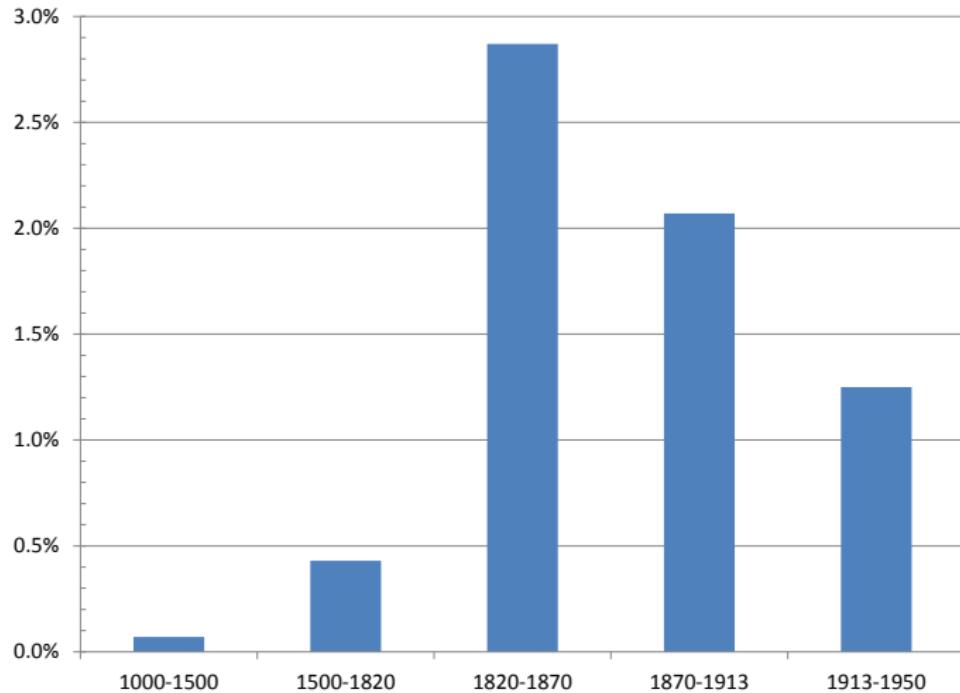
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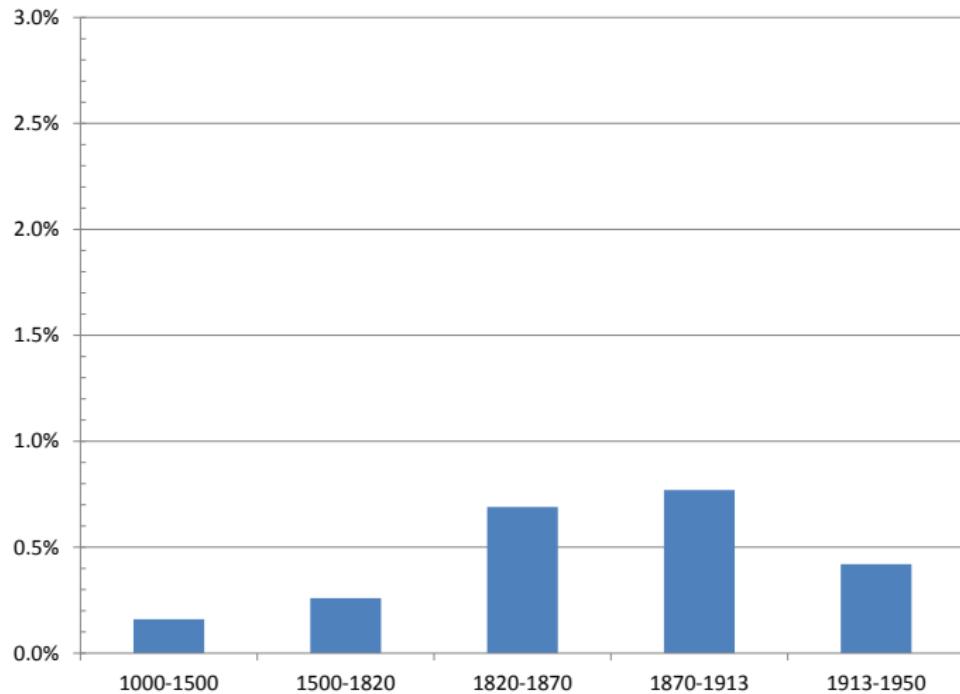
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- TFR & NRR are synthetic rates

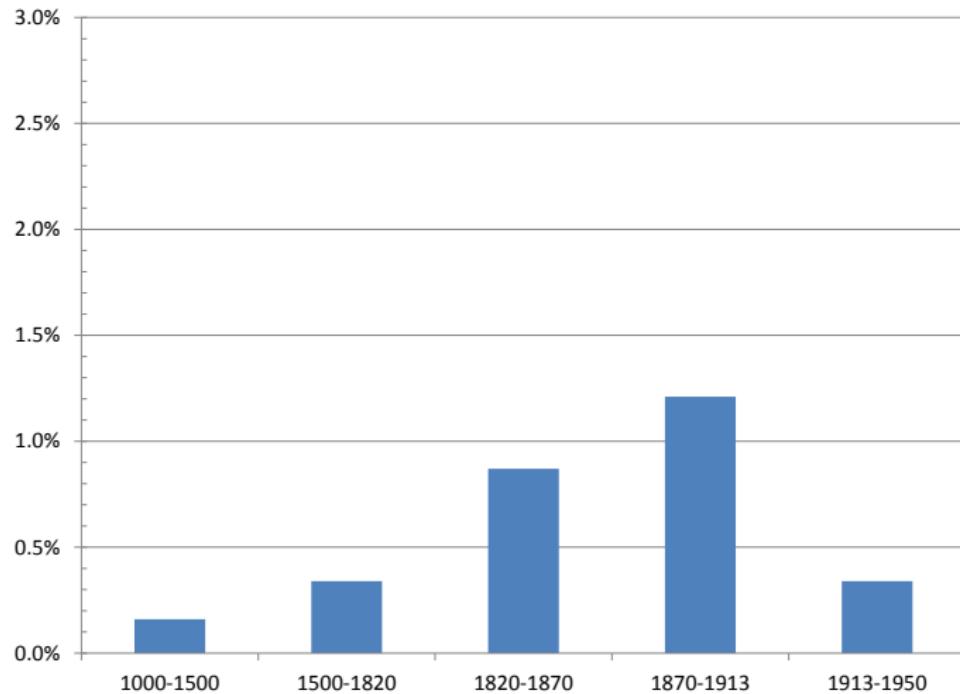
## Early Fertility Decline – Western Offshoots



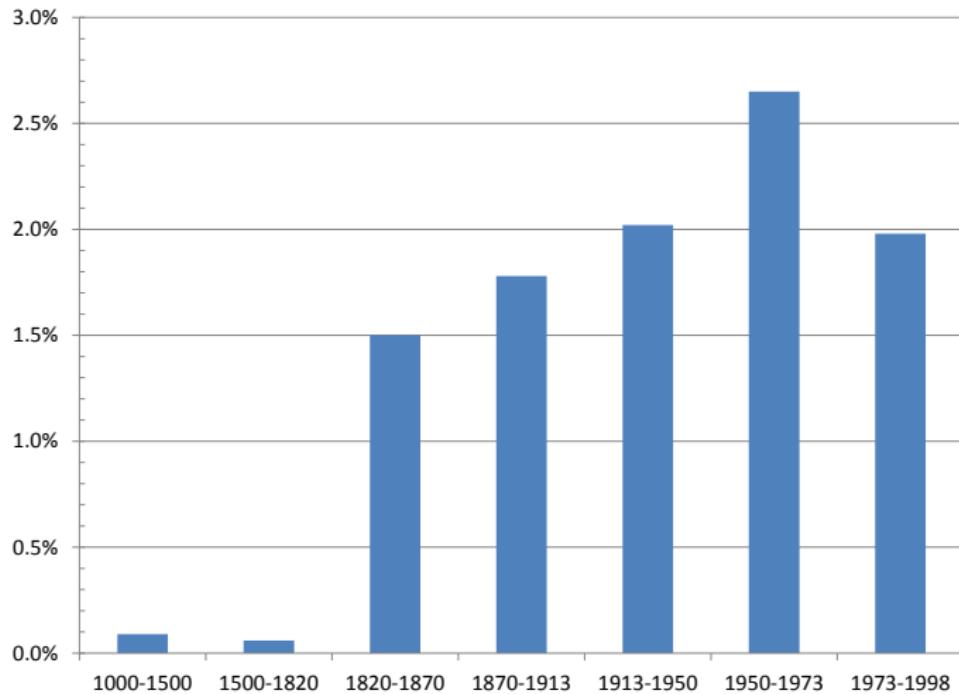
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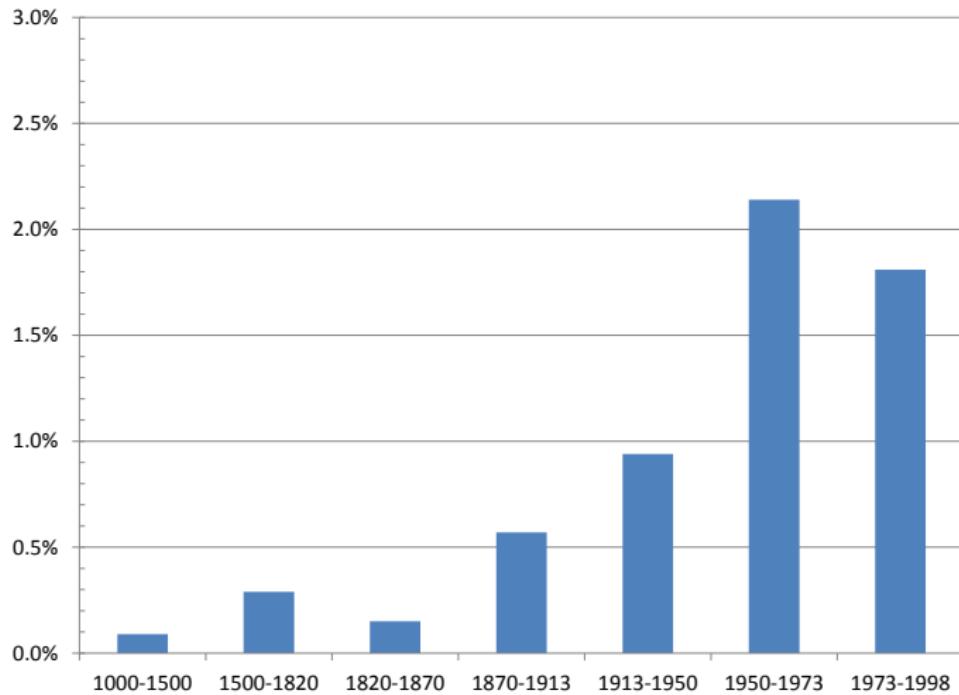
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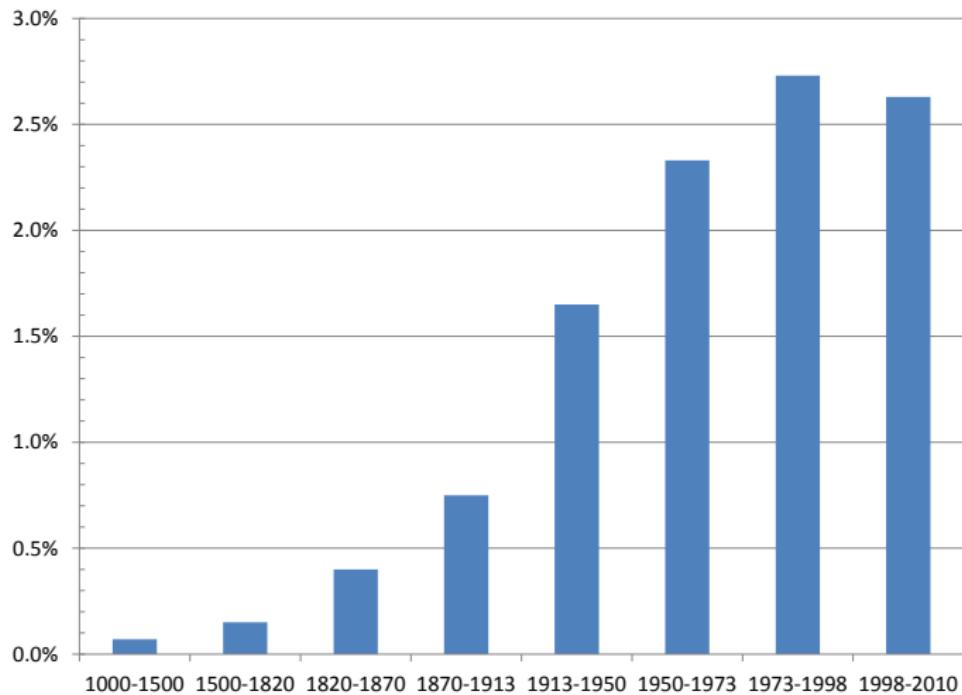
## Late Fertility Decline – Latin America



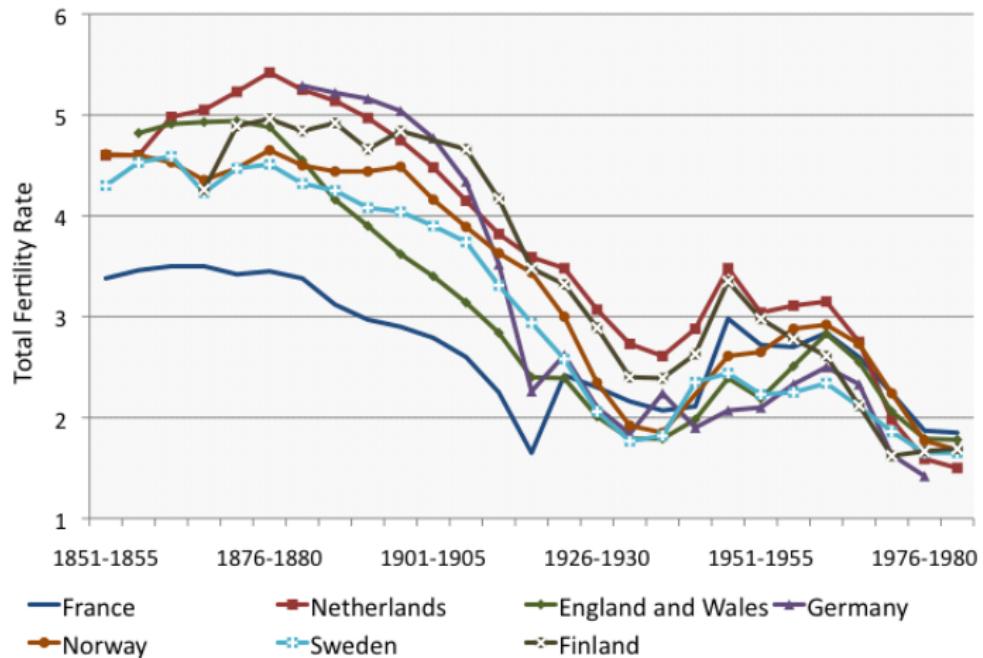
## Late Fertility Decline – Asia



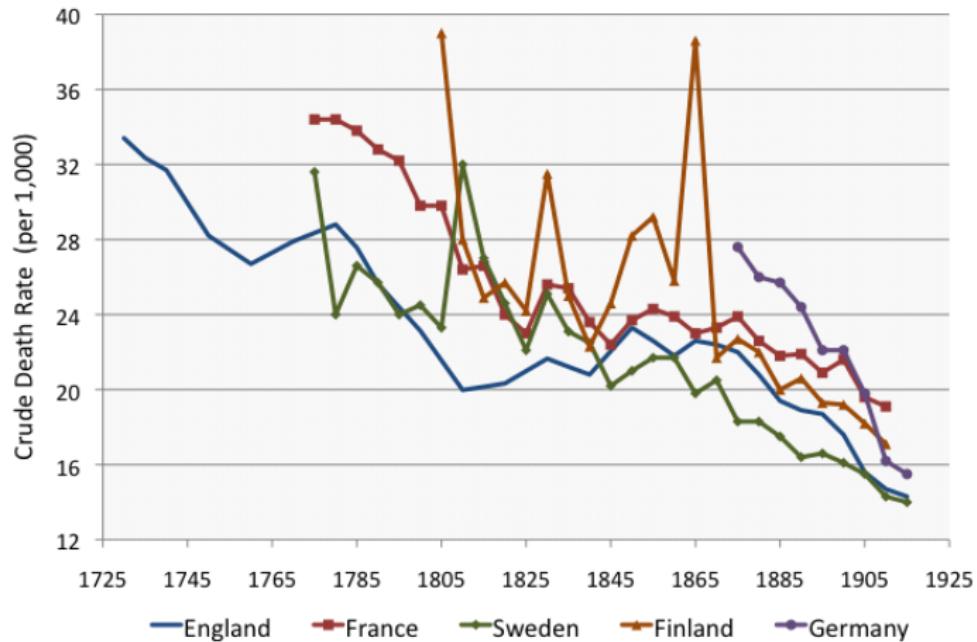
## Late Fertility Decline – Africa



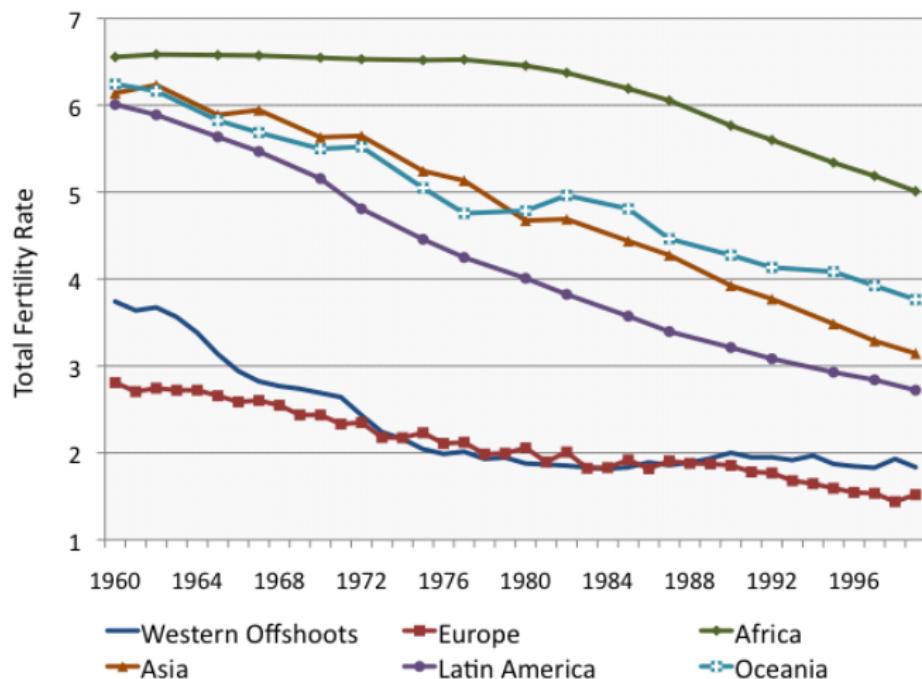
# The Demographic Transition in Western Europe: Total Fertility Rates



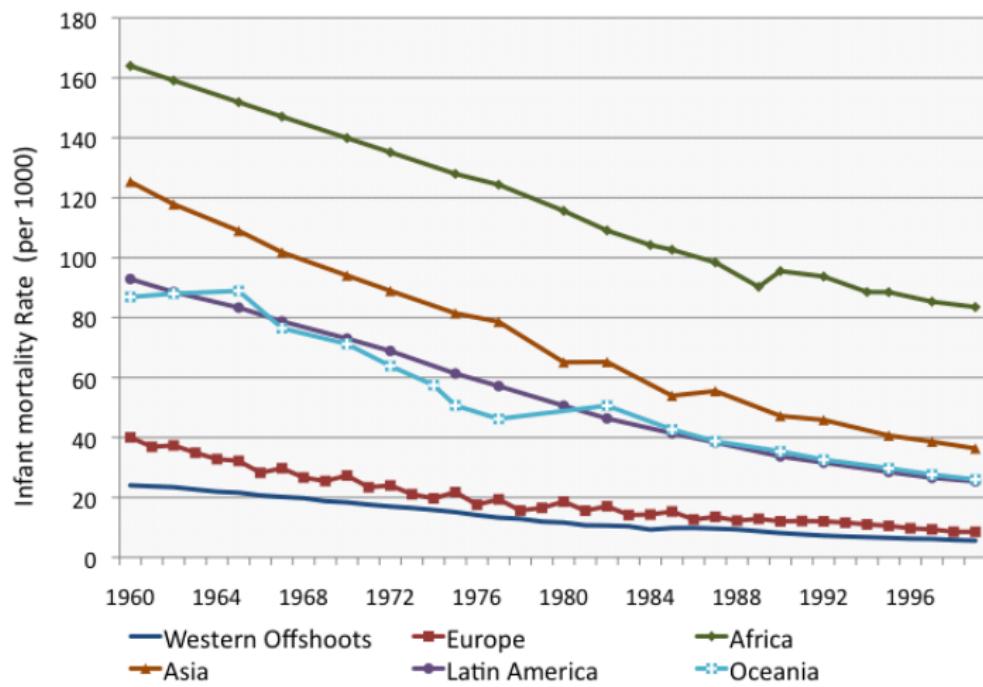
## Mortality Decline Western Europe: 1730-1920



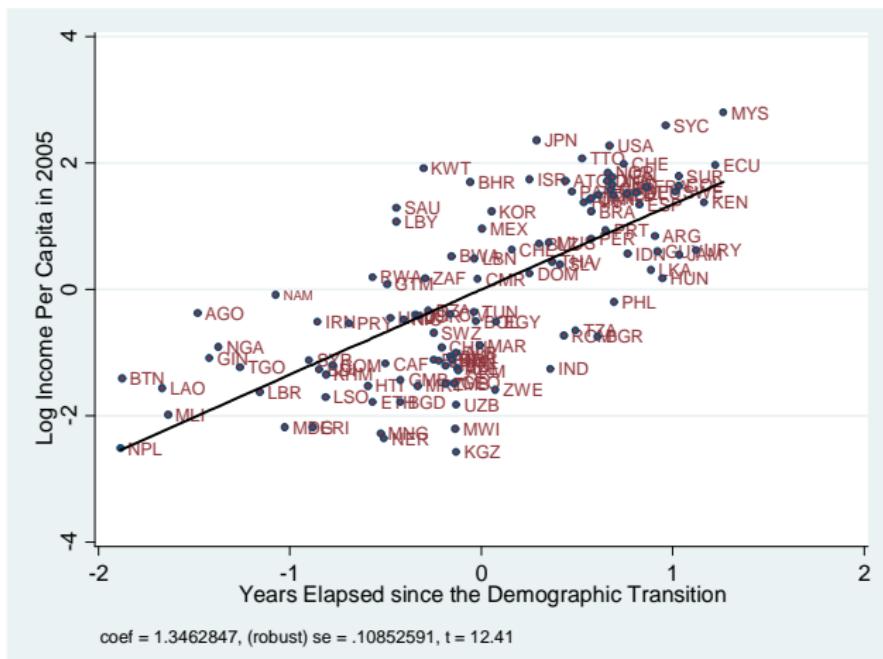
# The Evolution of Total Fertility Rate across Regions, 1960-1999



## Decline in infant mortality rates across regions, 1960-1999



# Timing of the Demographic Transition and Current Income per Capita



# Theories of the Demographic Transition

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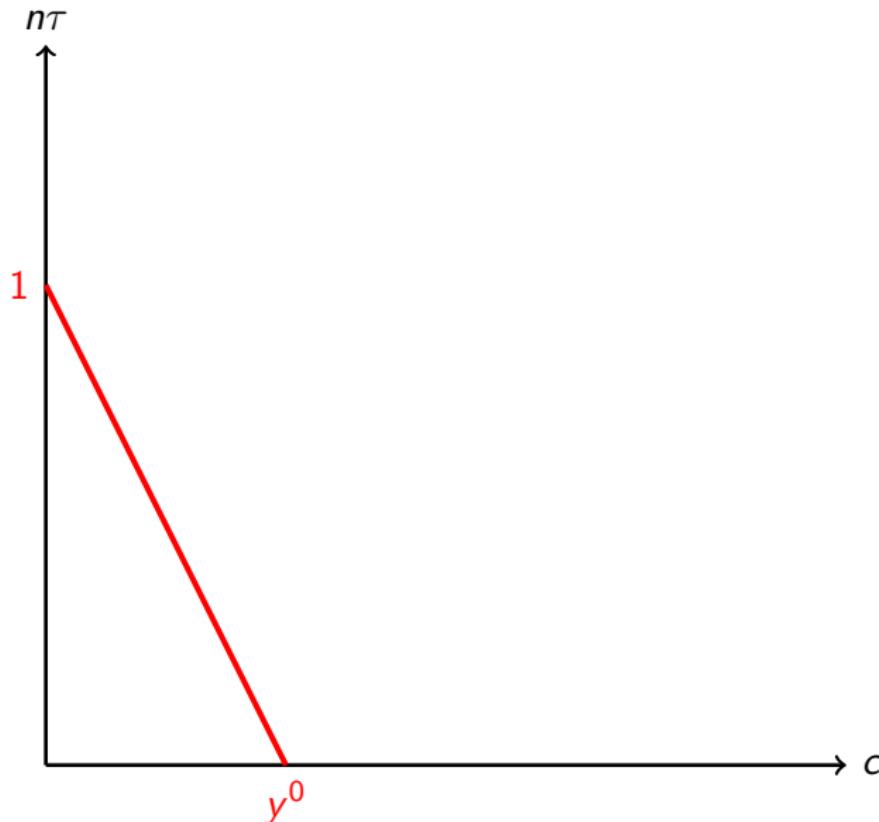
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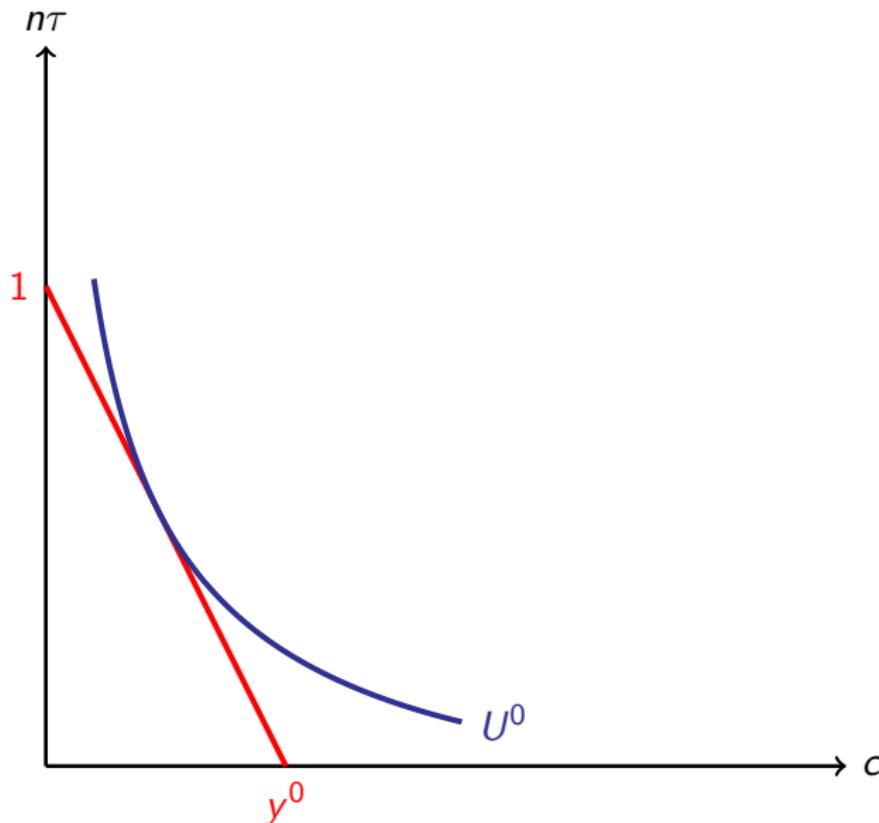
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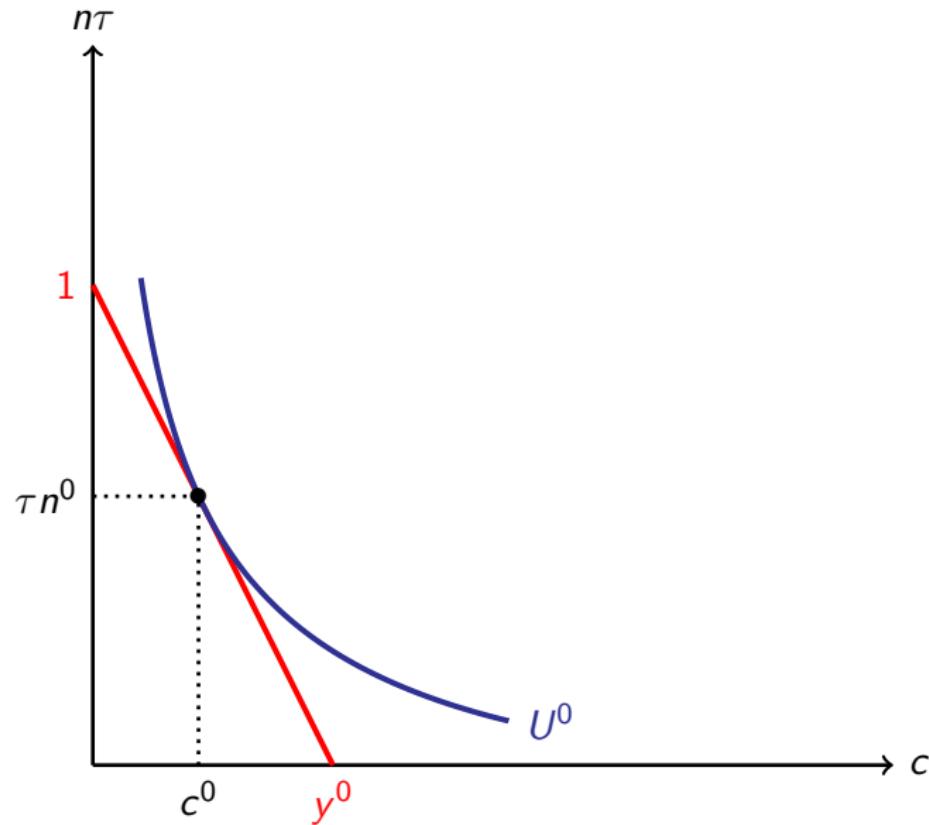
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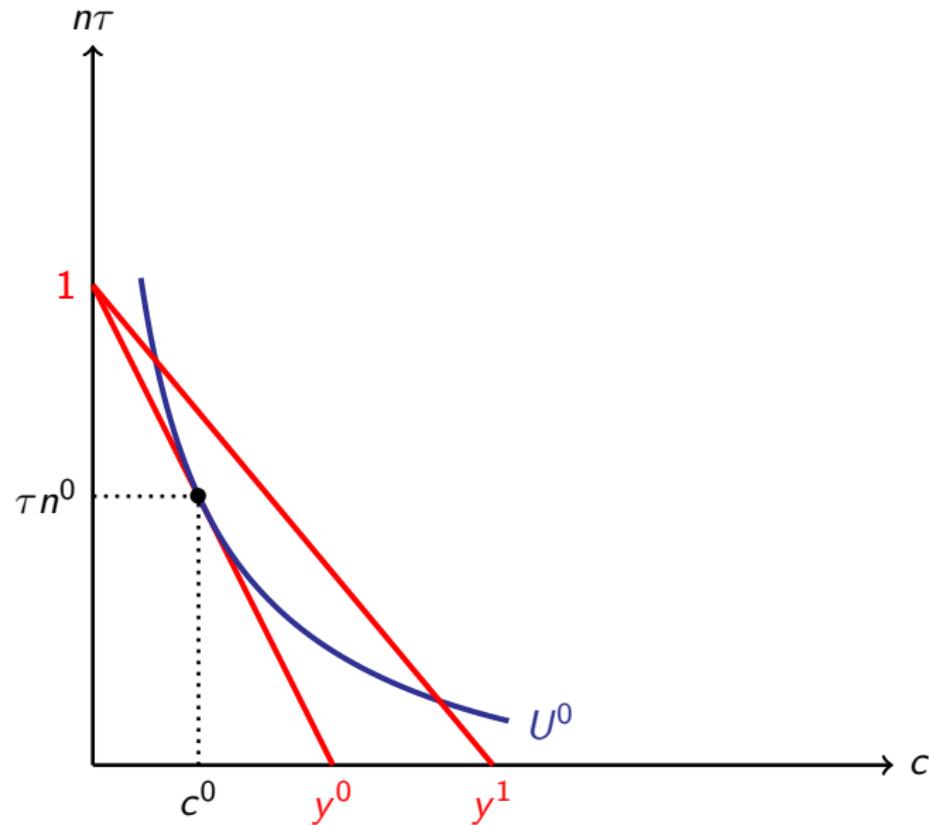
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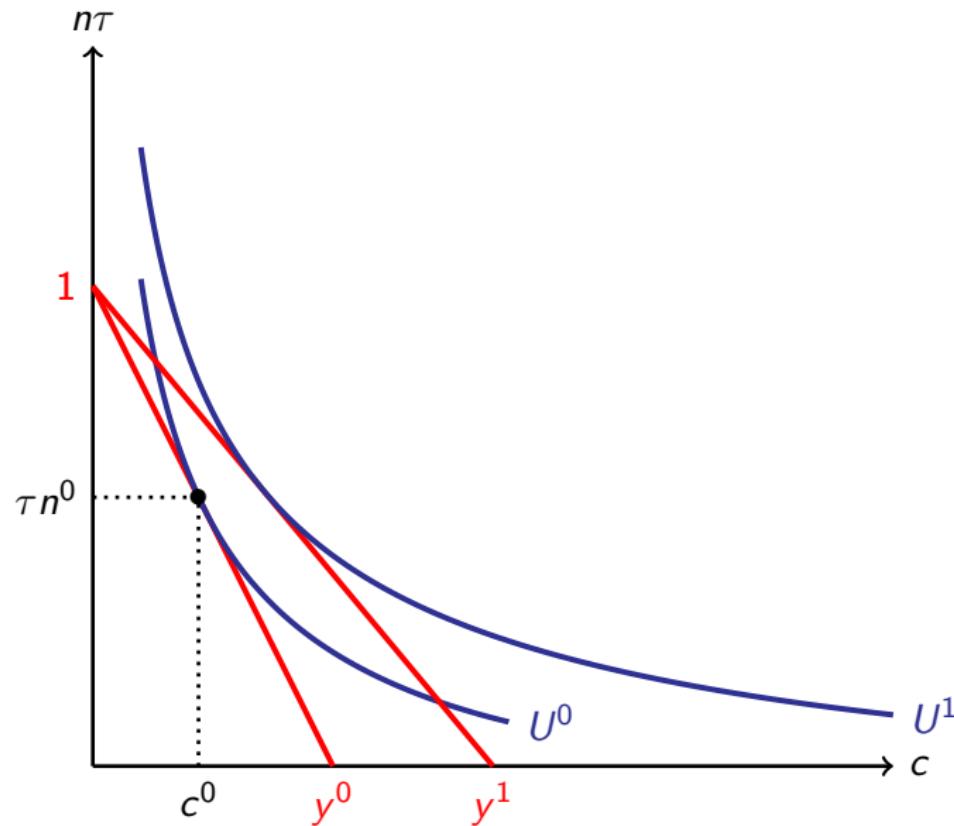
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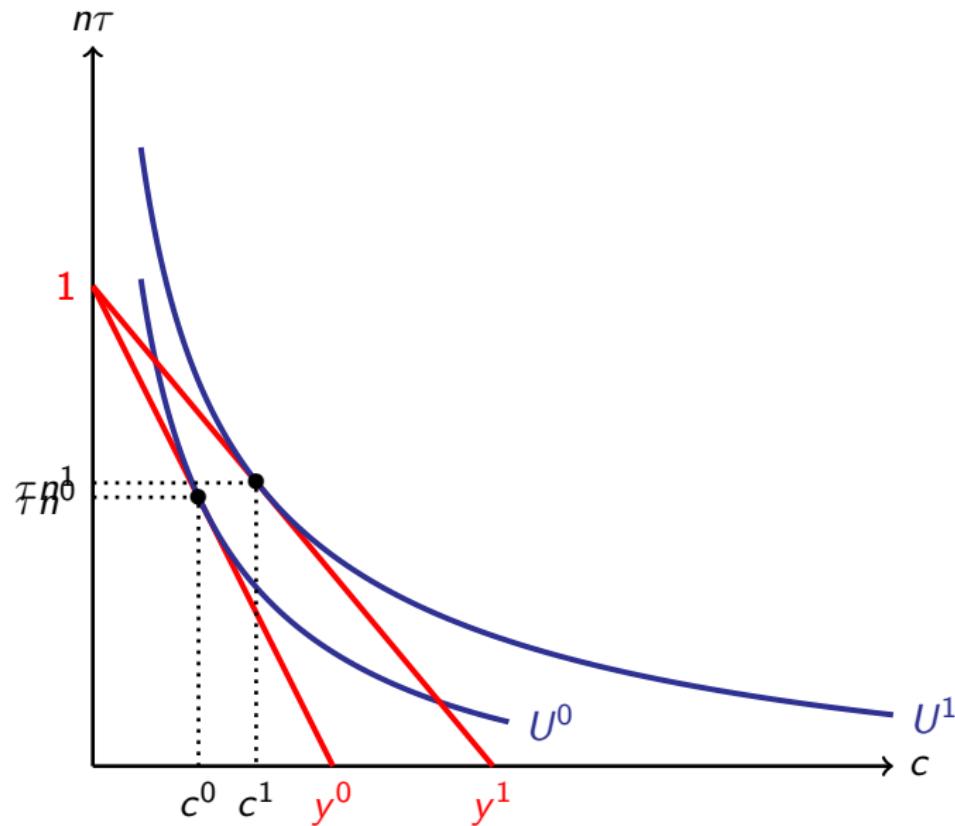
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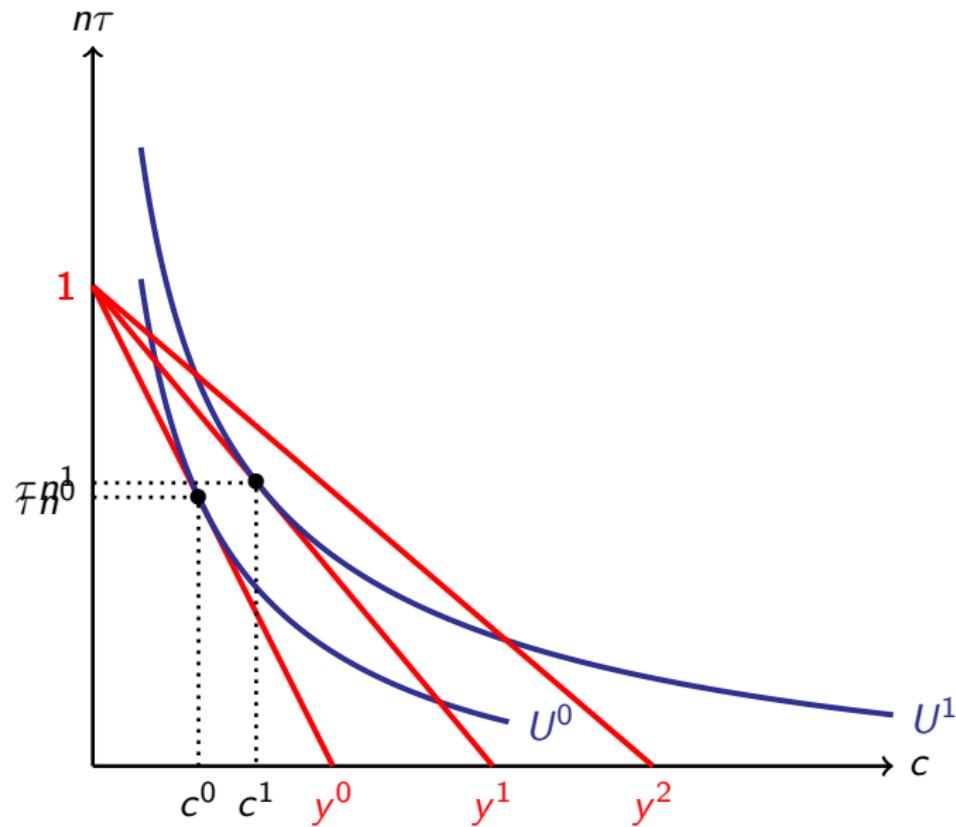
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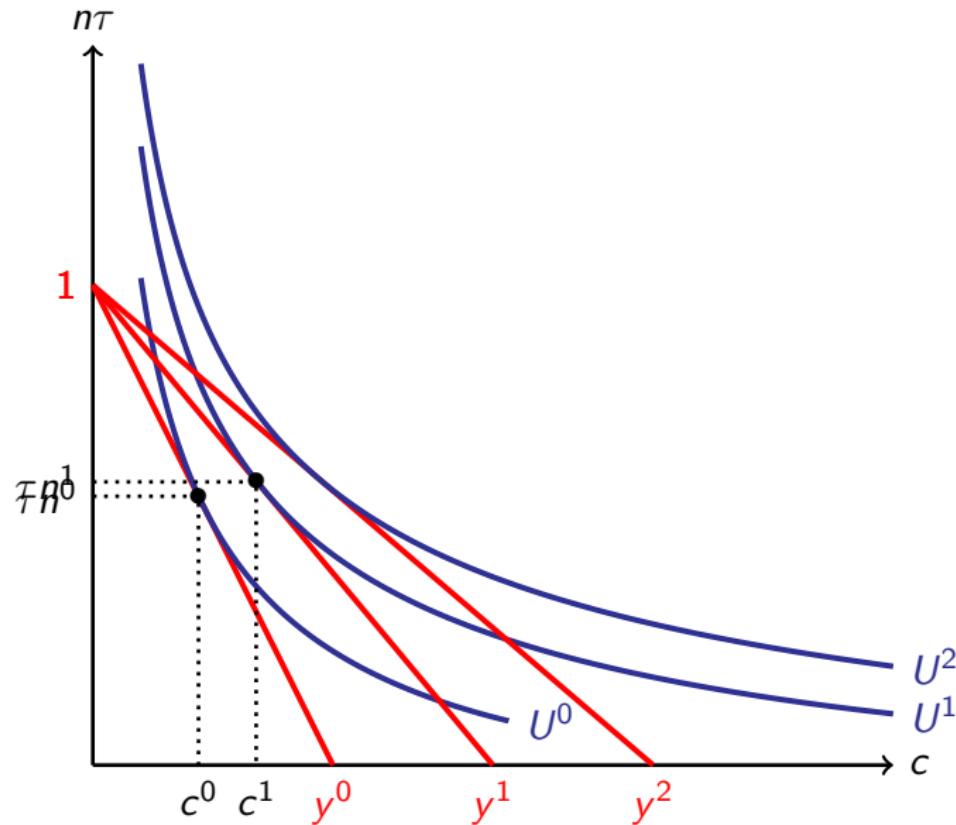
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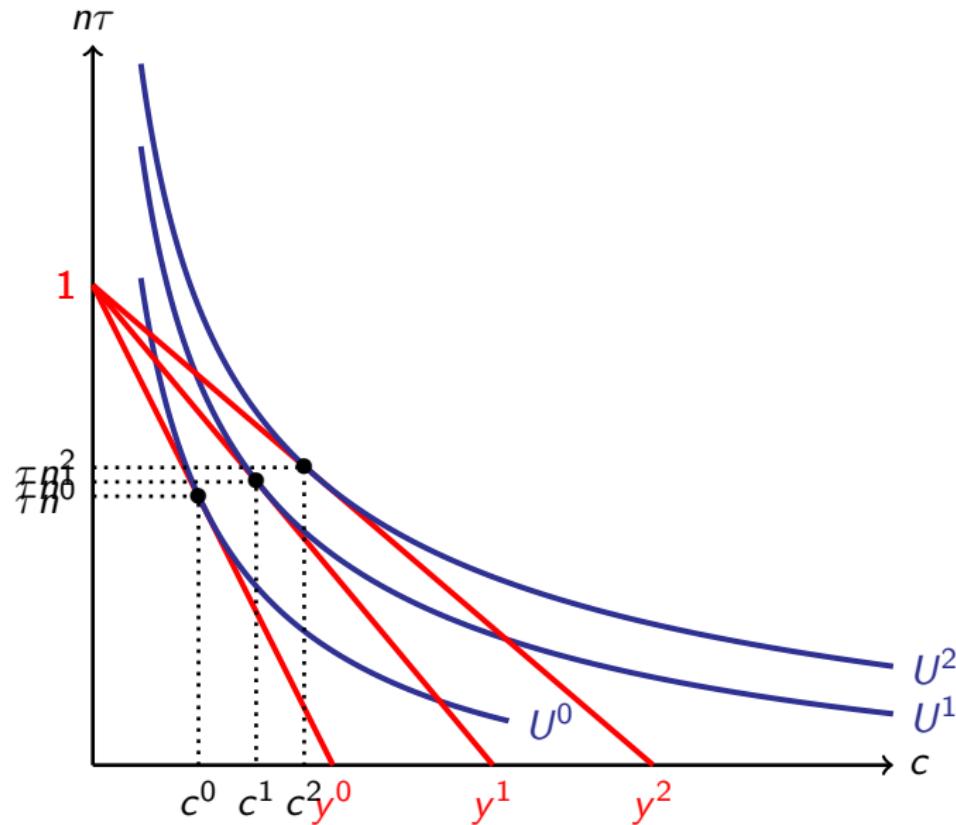
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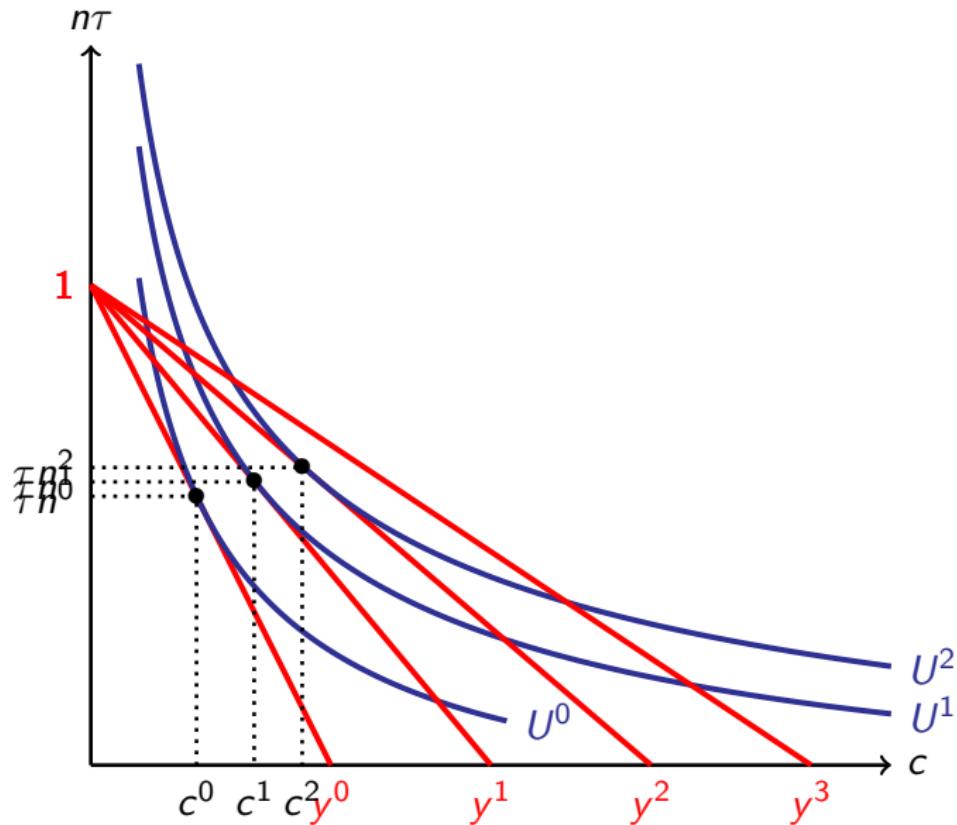
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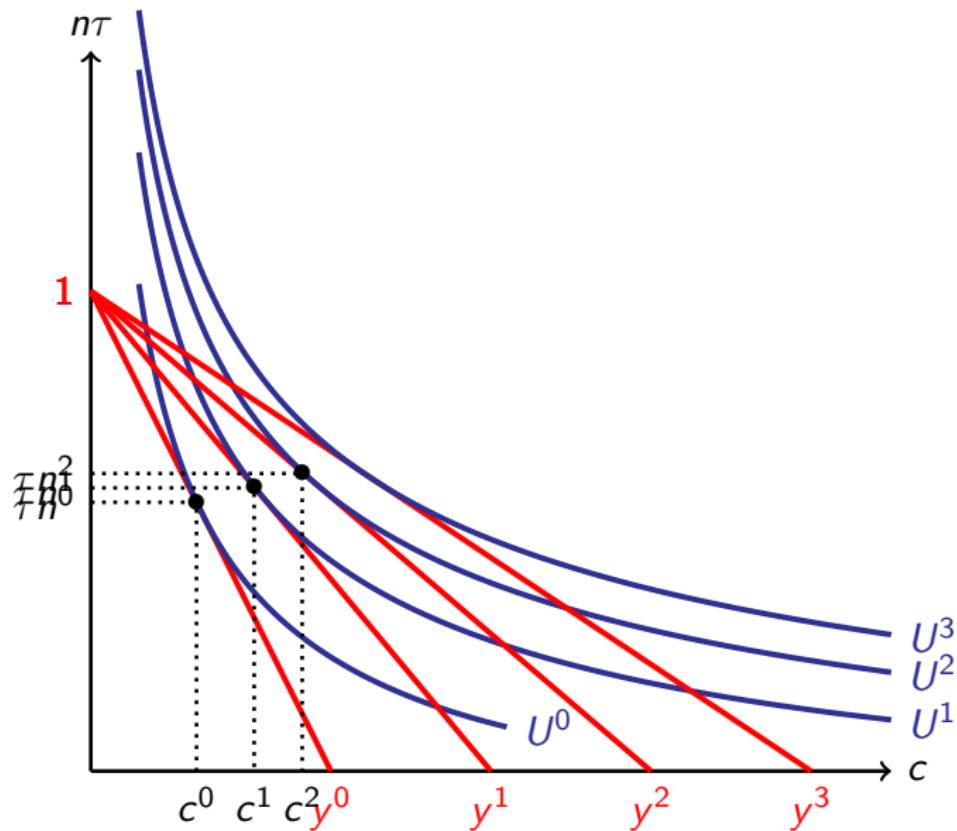
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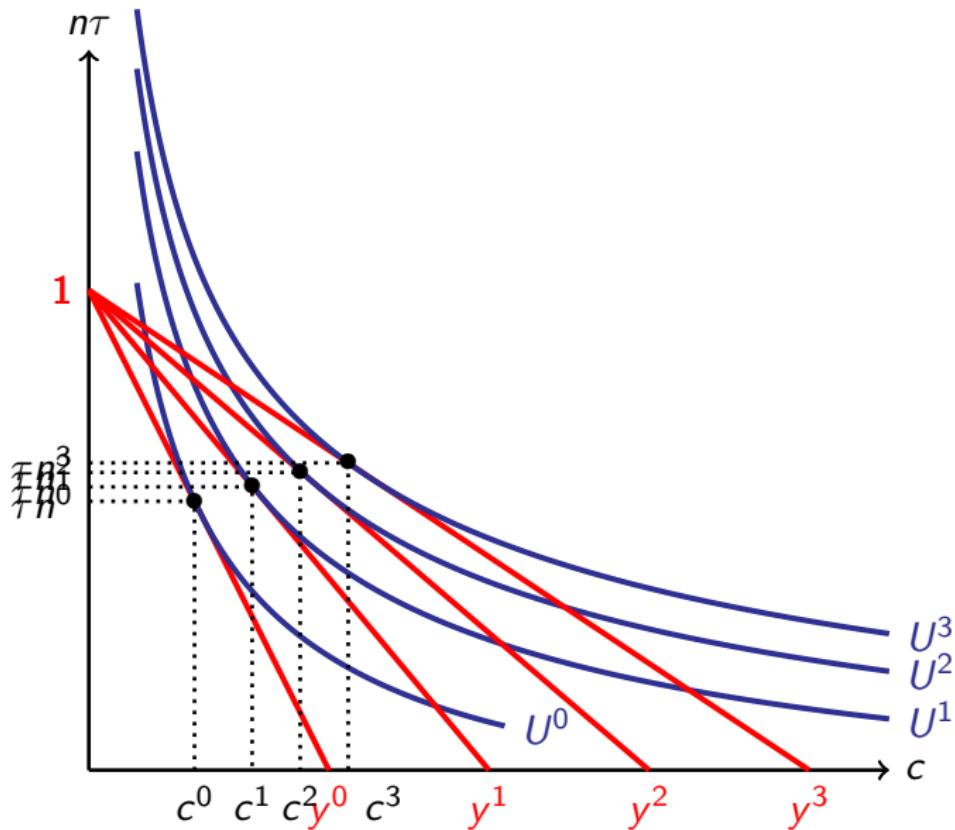
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- Fertility declines in the process of development

## The Rise in Income - Theoretical Evaluation

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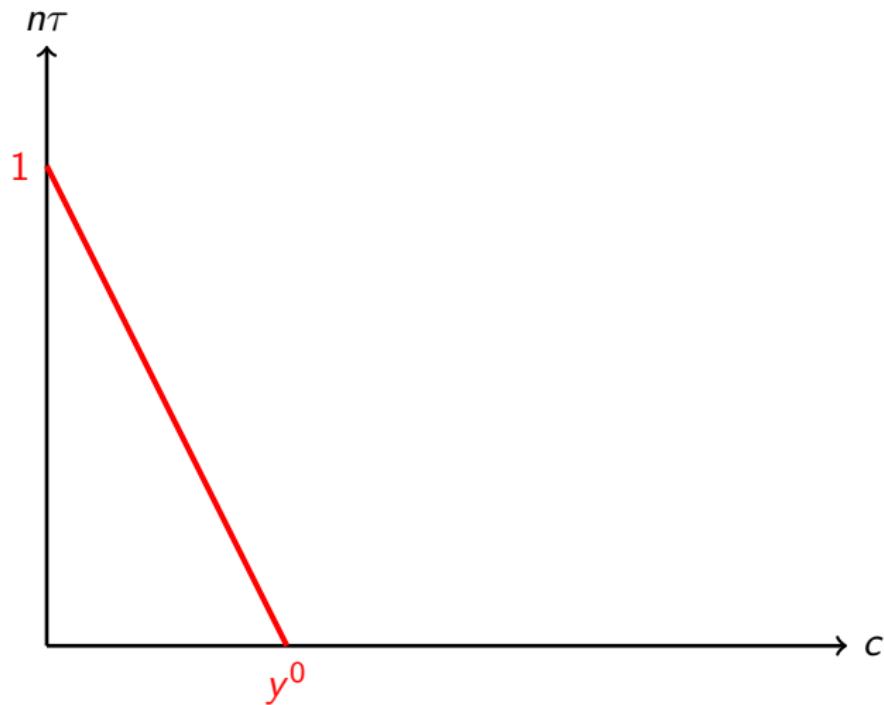
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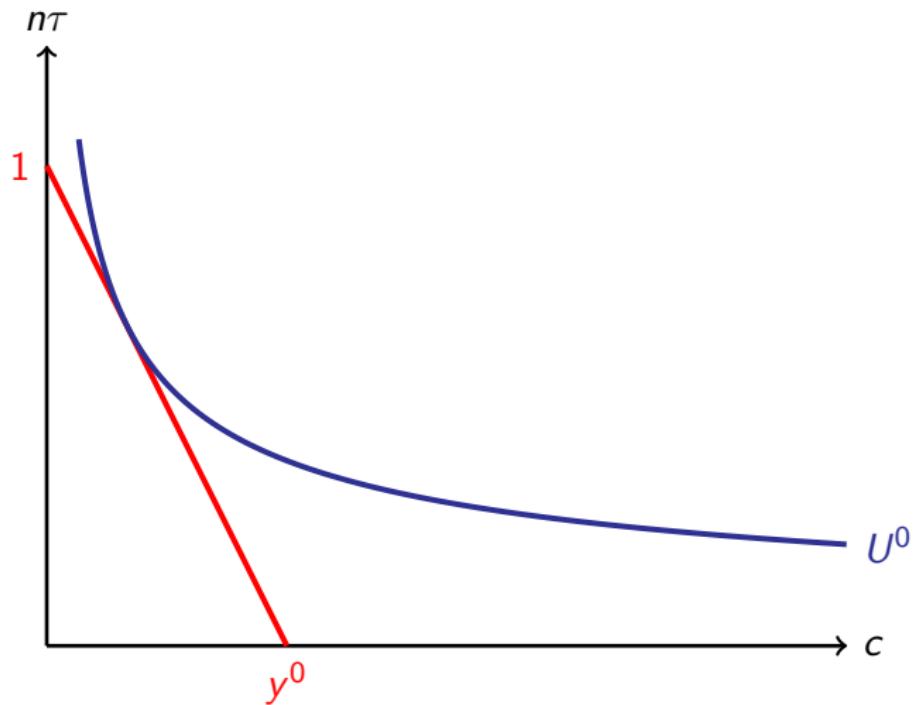
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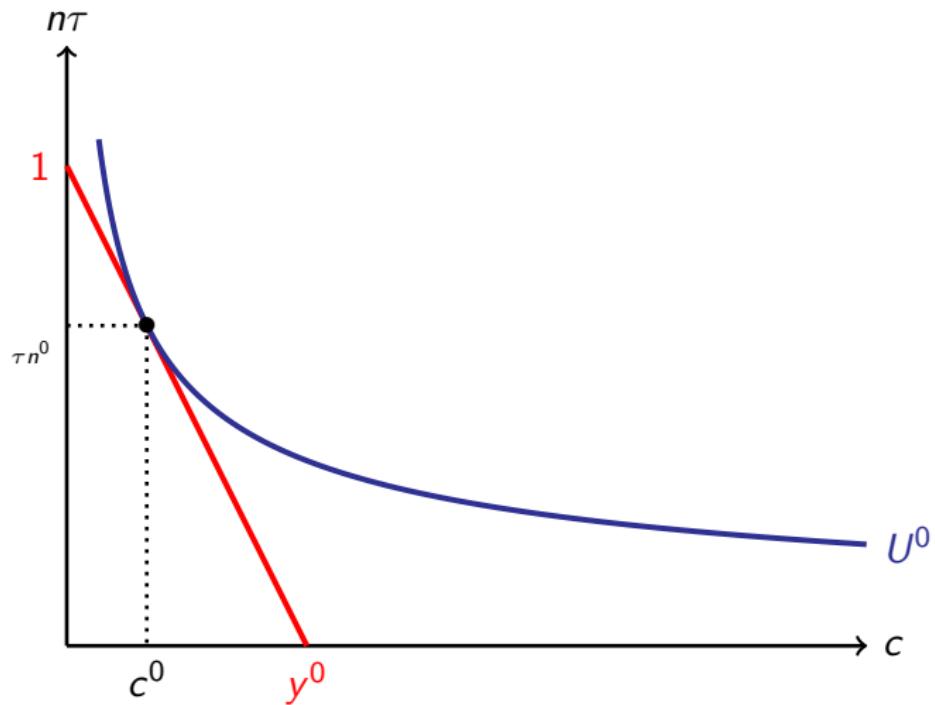
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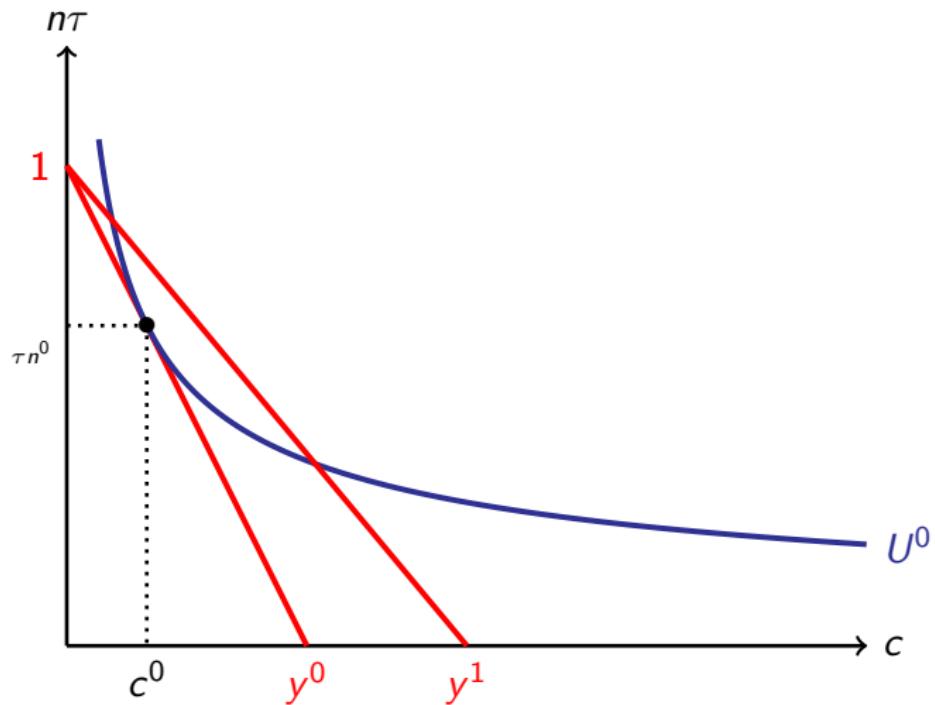
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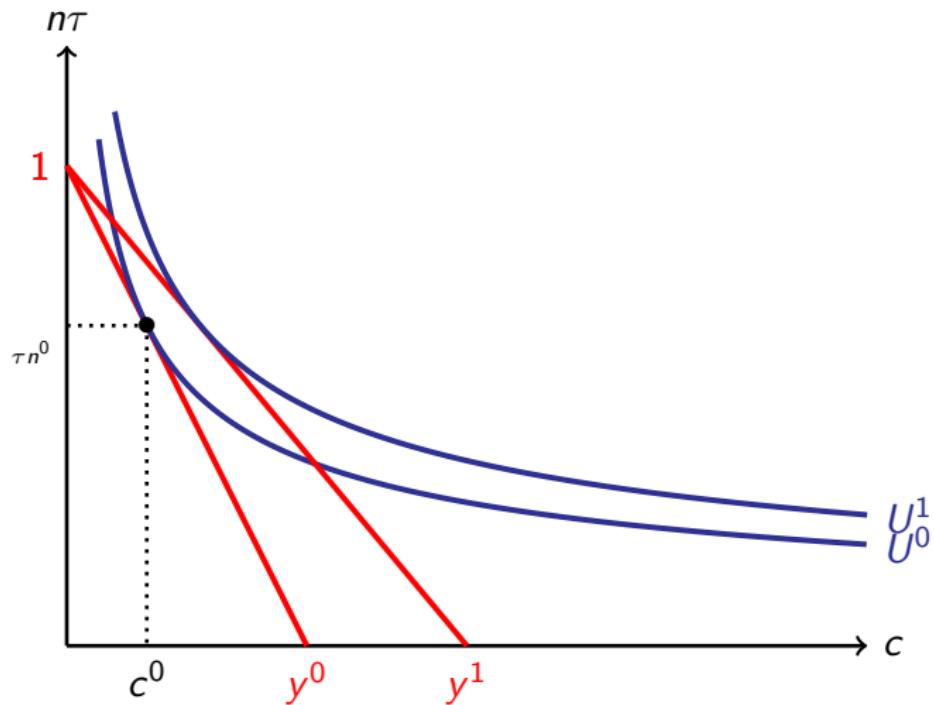
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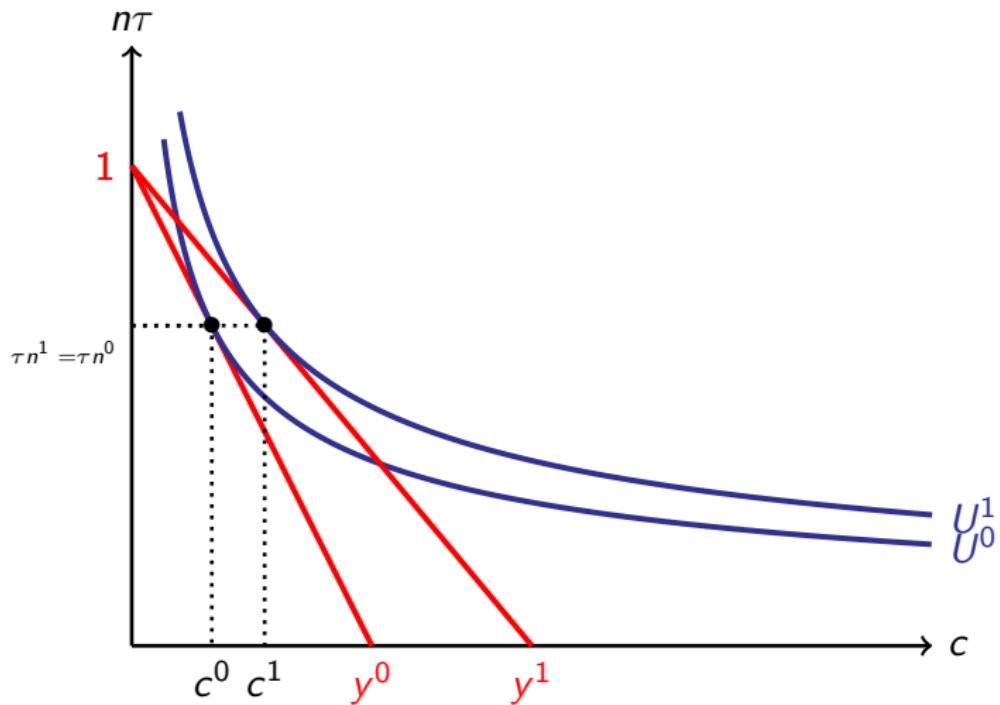
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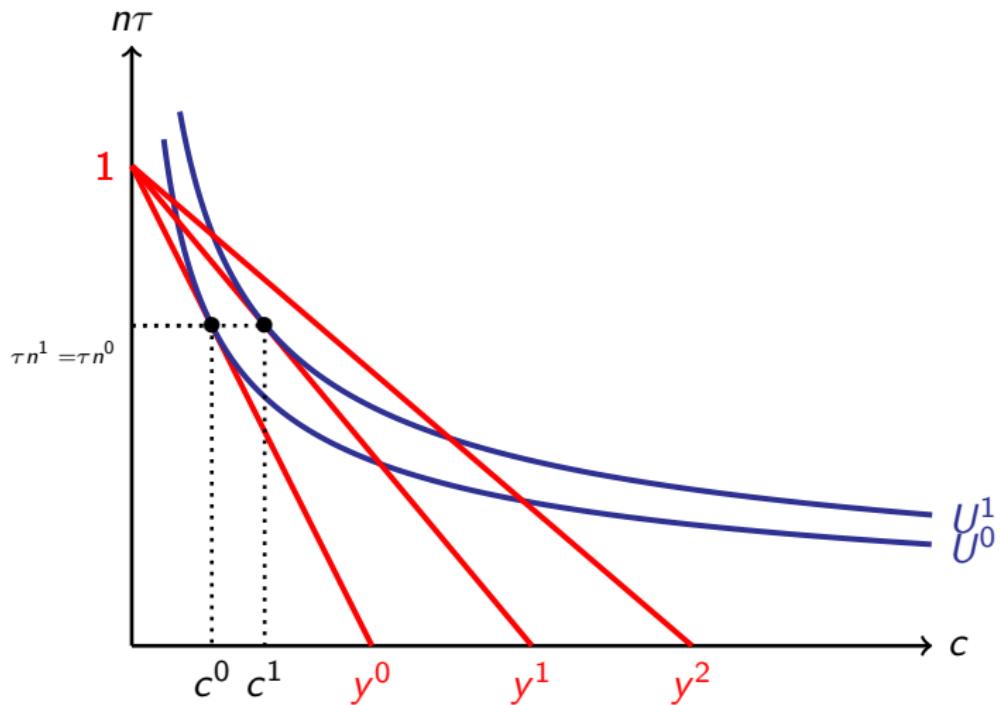
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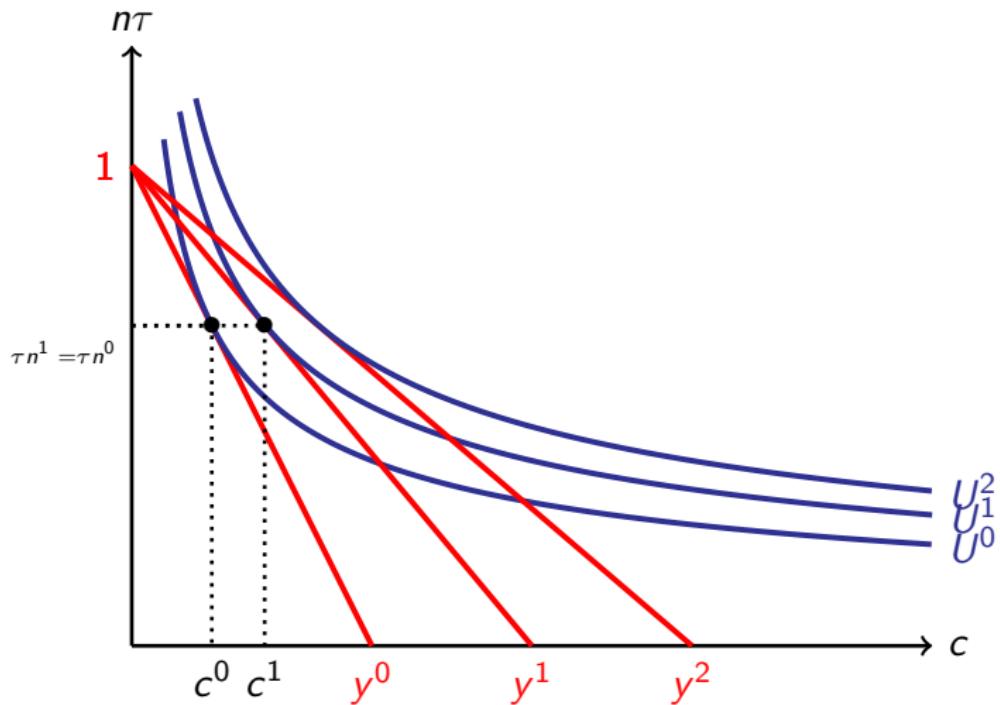
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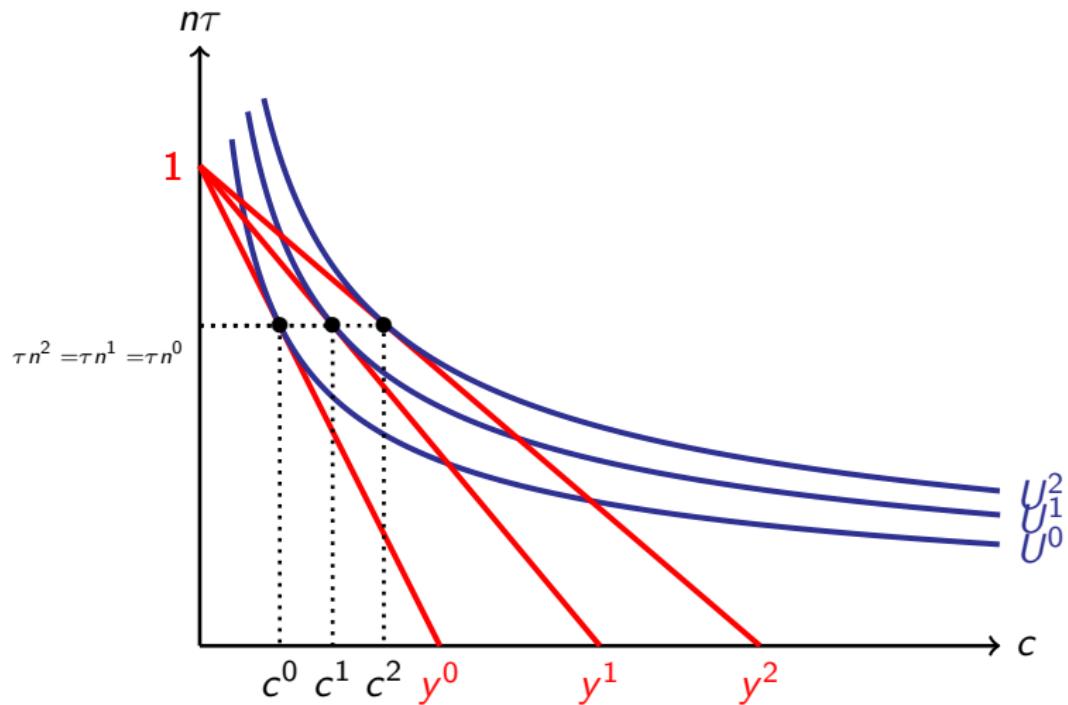
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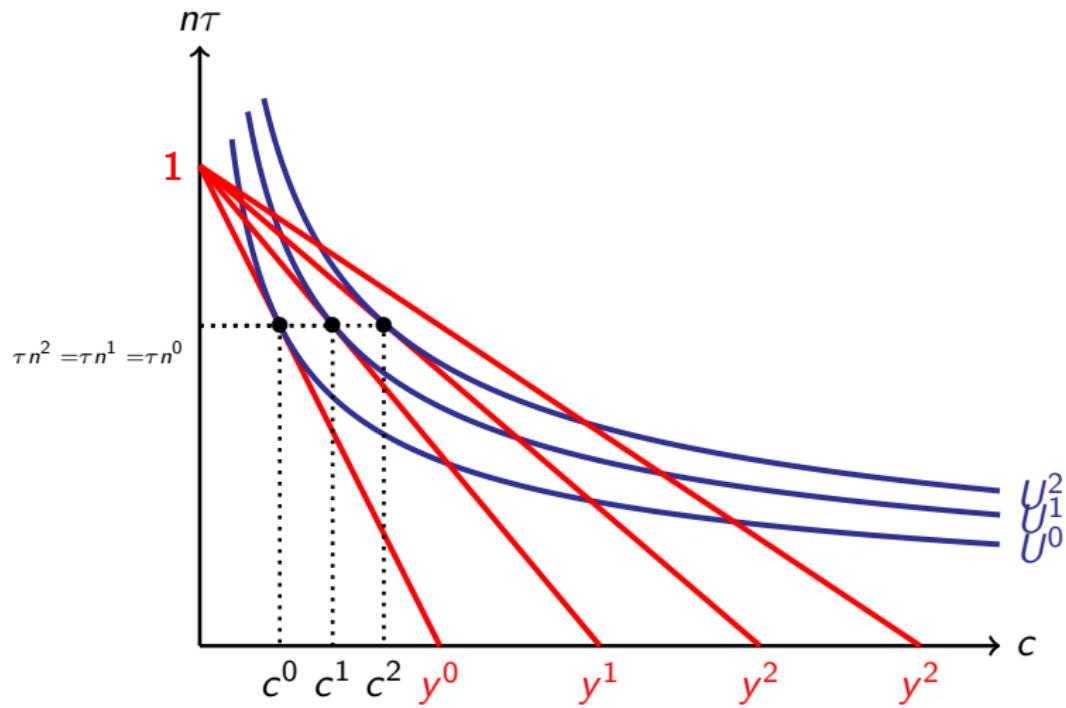
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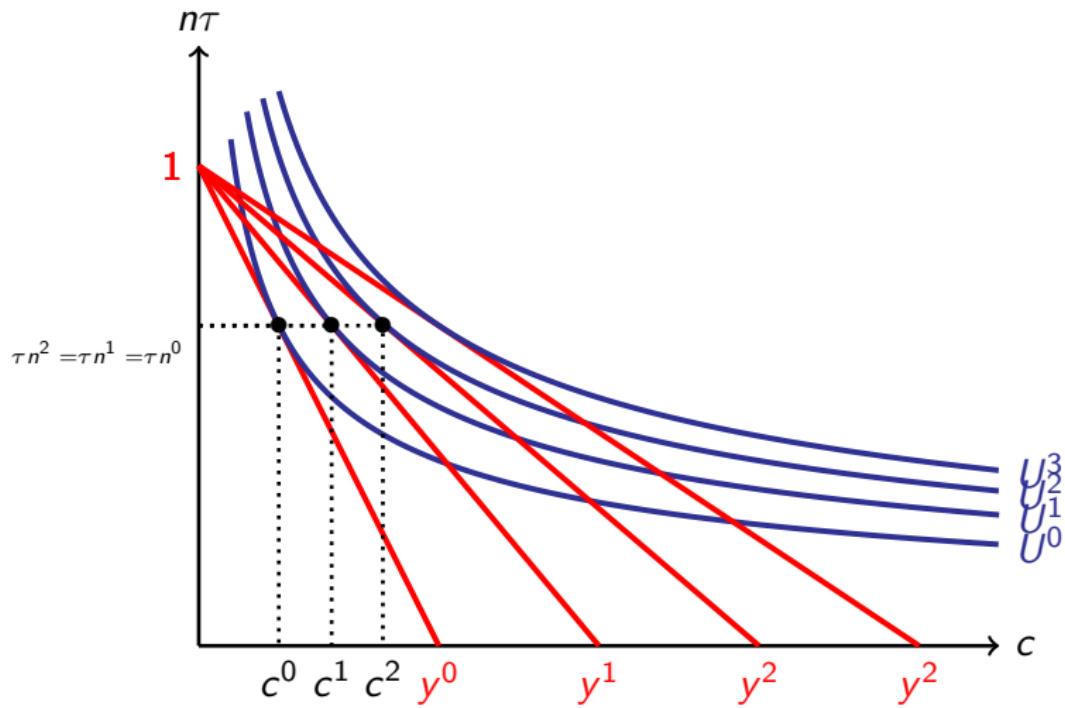
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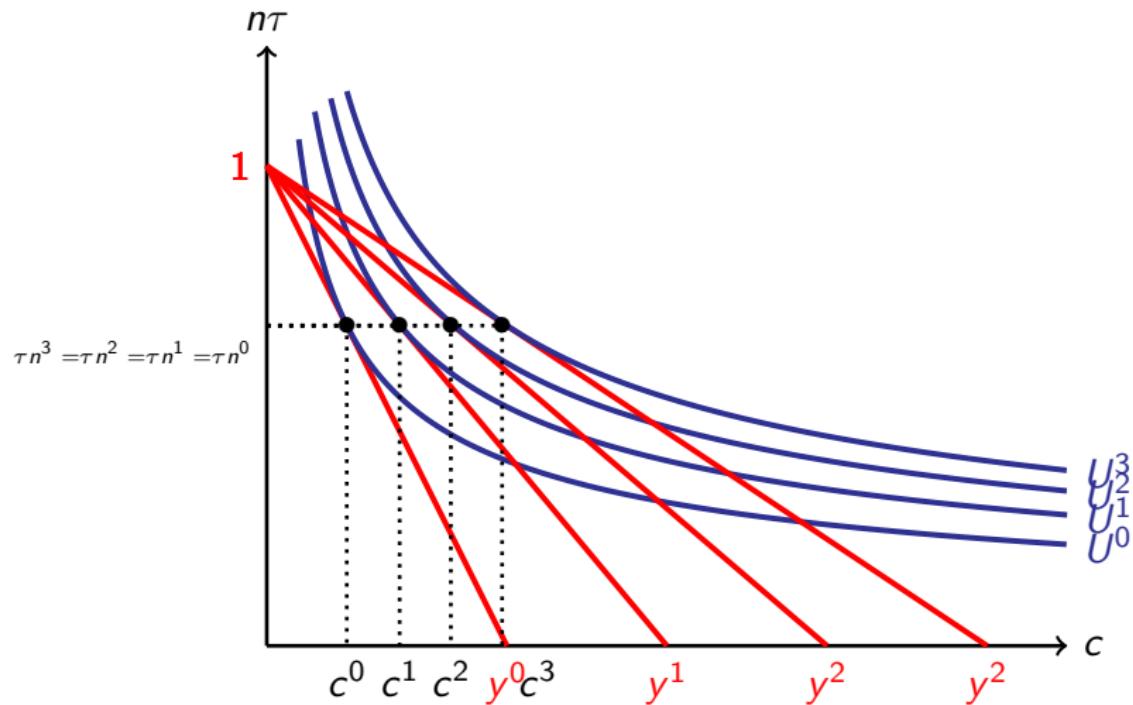
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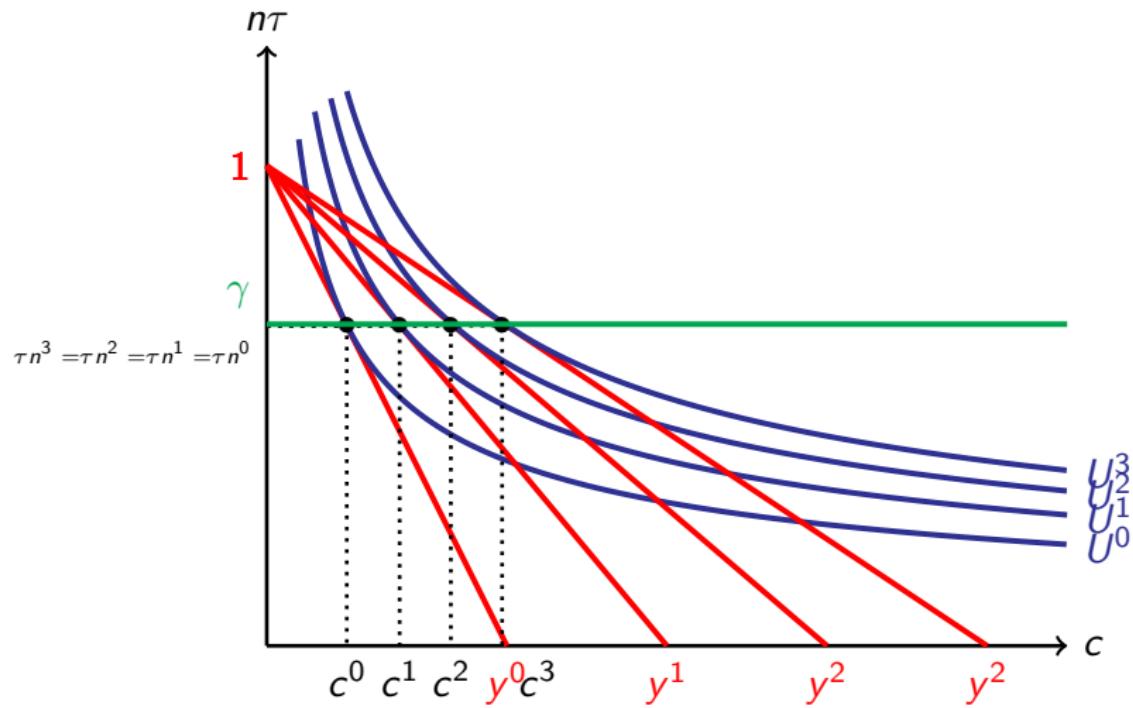
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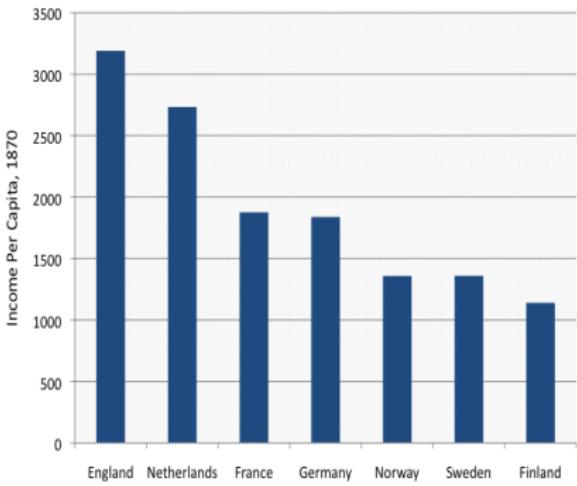
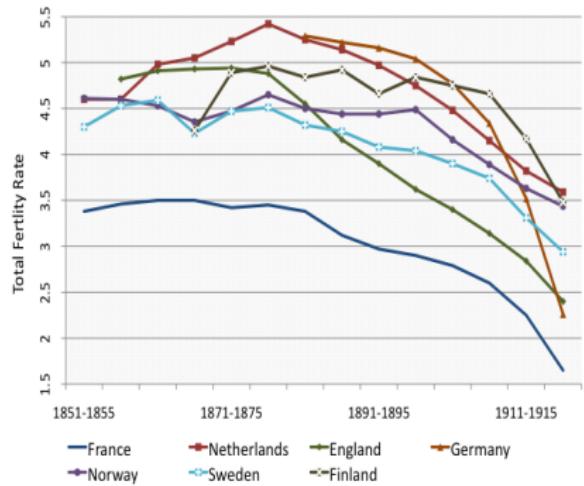
## The Rise in Income: Refuting Cross Country Evidence

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# Simultaneous DT across European Countries that Differ in Income per Capita



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- England (1630s) Reproductive success increases with income (Clark and Hamilton JEH 2006)

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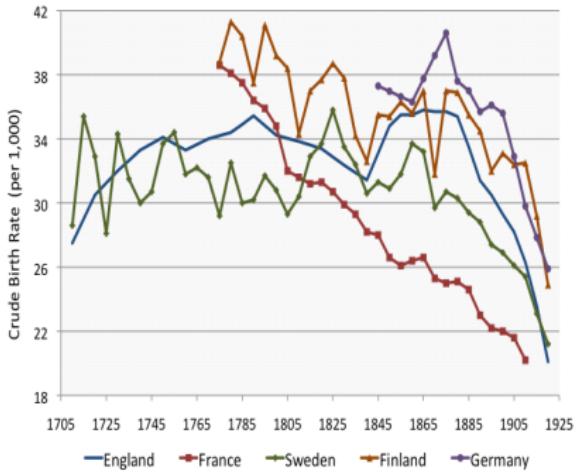
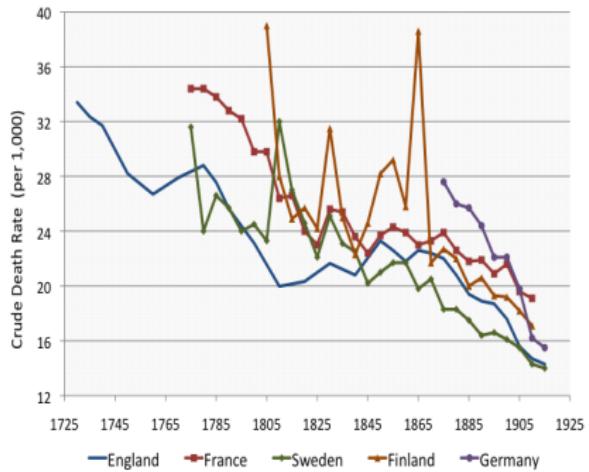
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## The Decline in Mortality and Fertility - Evidence



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- Prior to the demographic transition, richer individuals who presumably had better access to financial markets, had larger number of surviving children

# The Decline in the Gender Wage Gap

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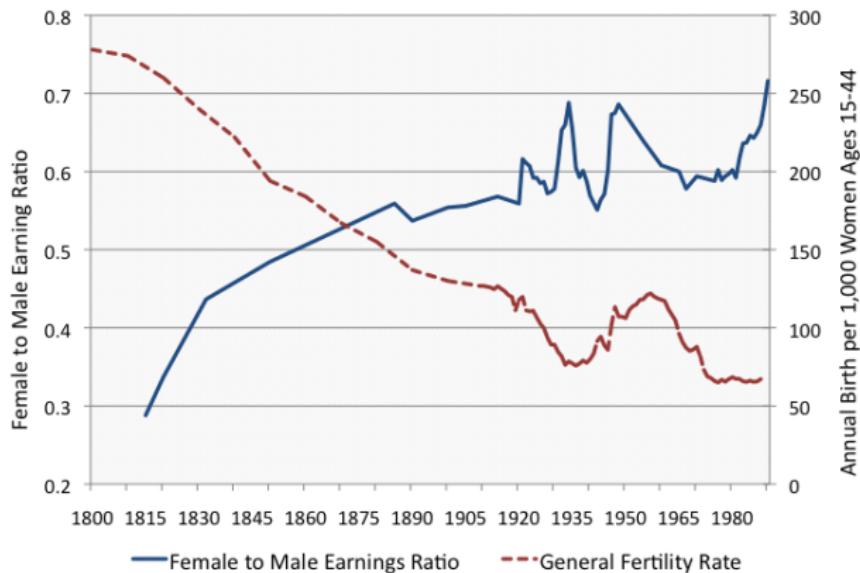
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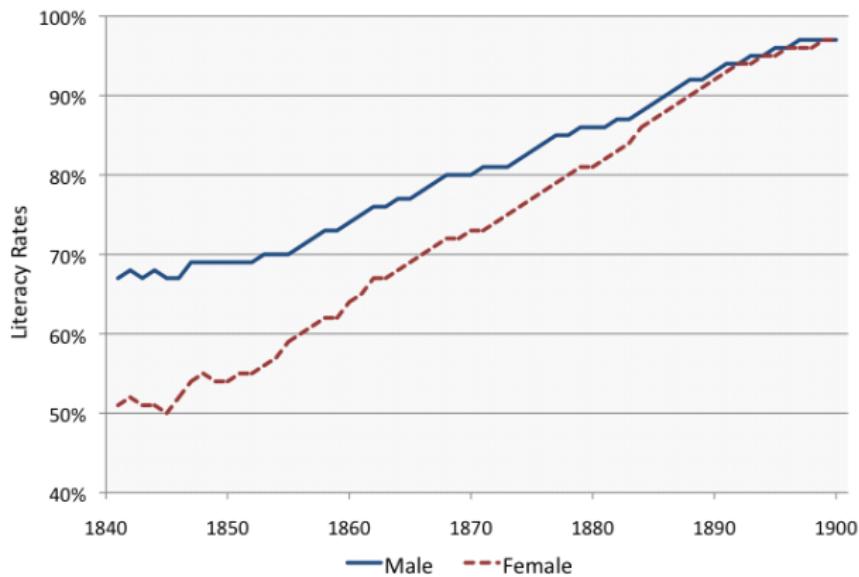
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## Evolution of the Gender Earnings Ratio - US



## Evolution of the Gender Literacy Gap - England



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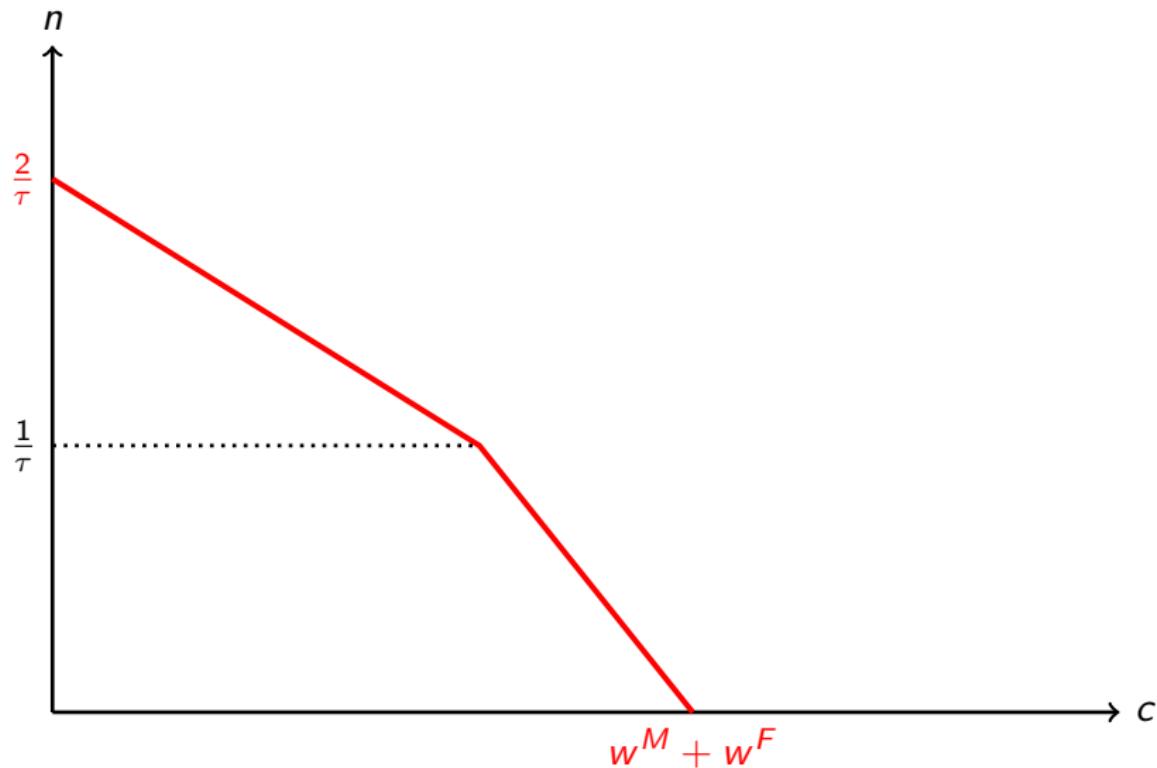
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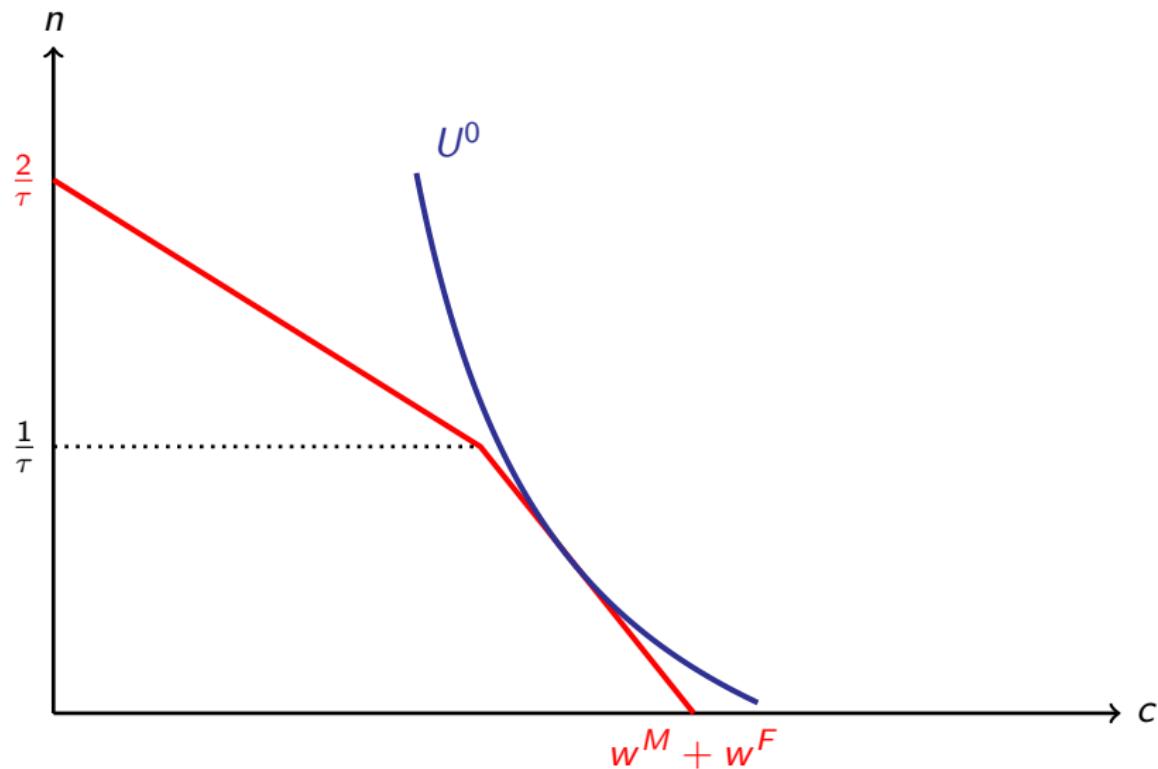
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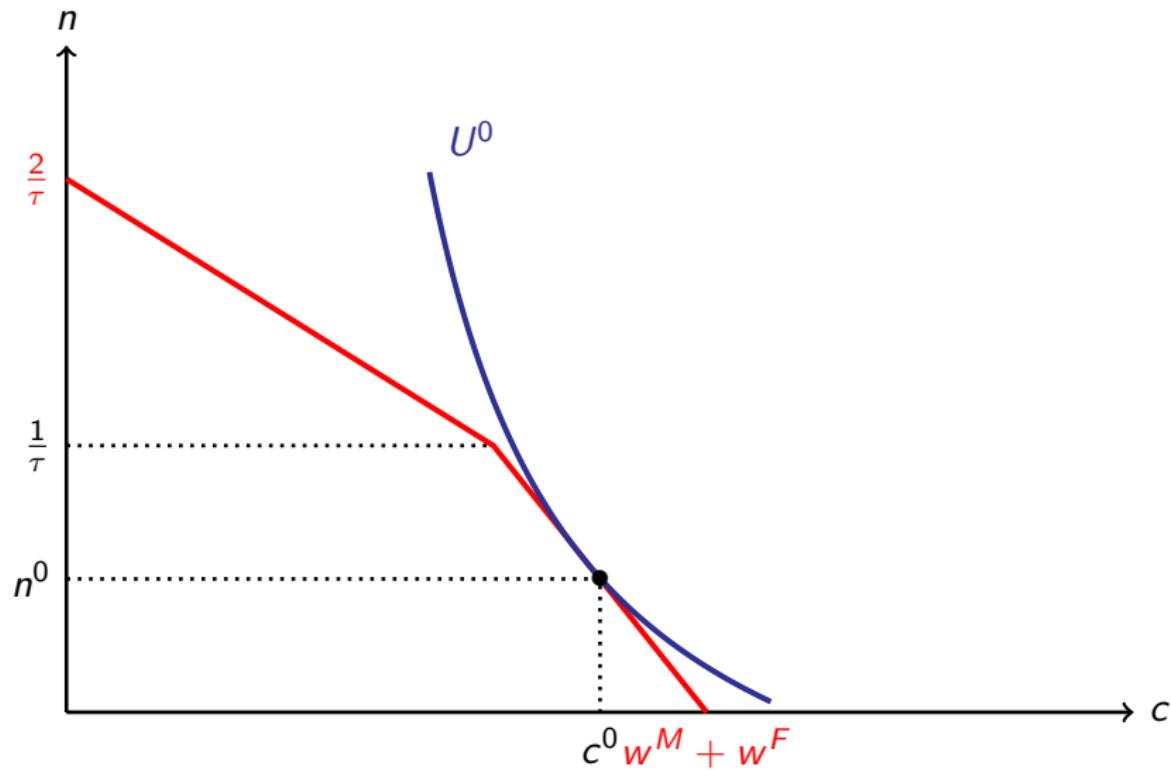
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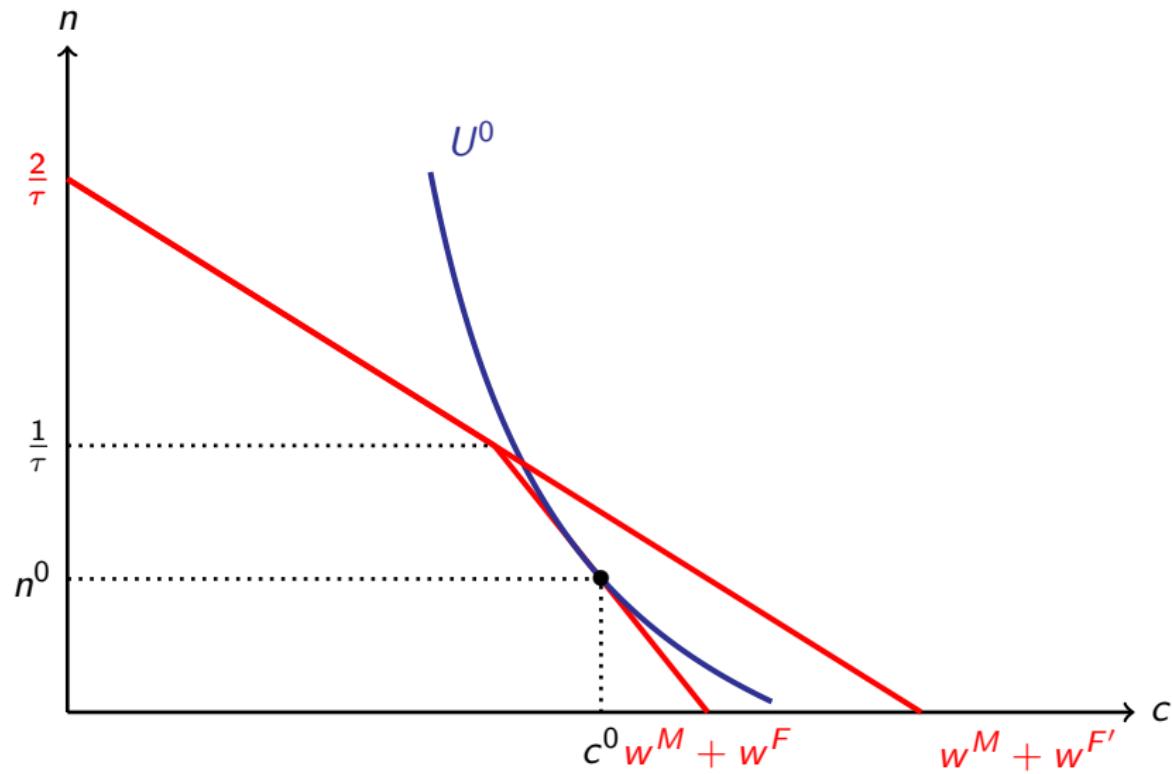
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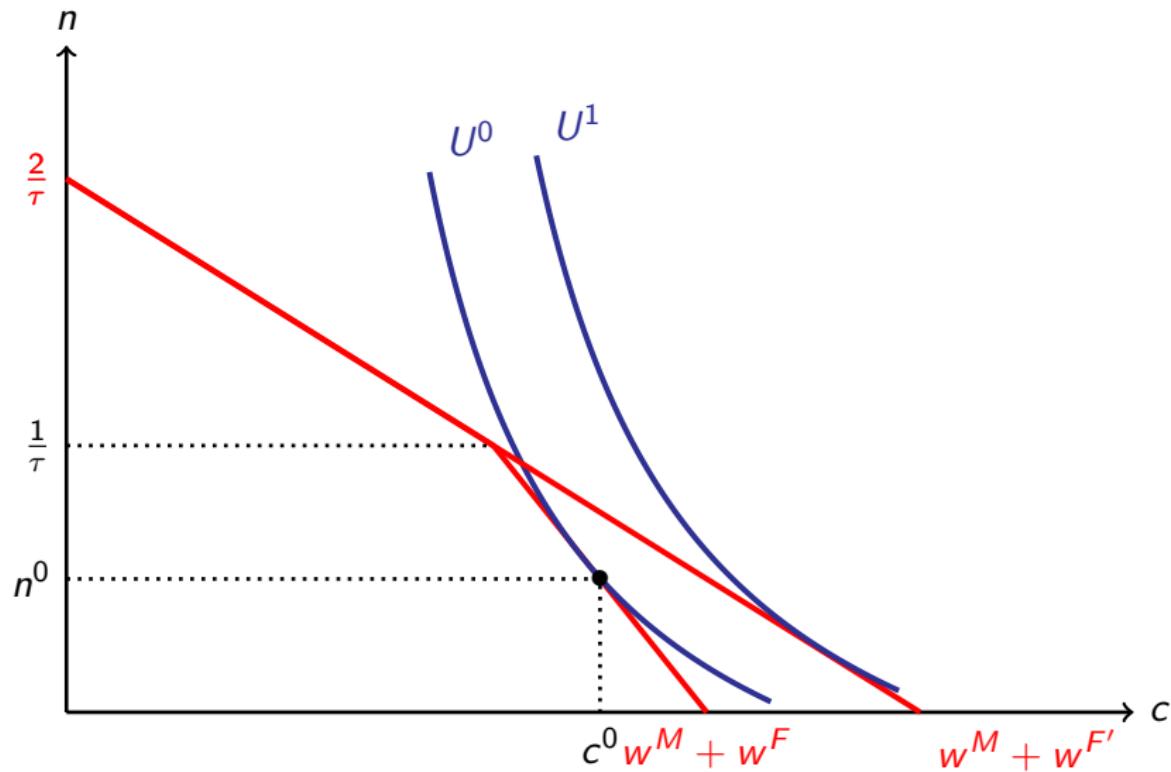
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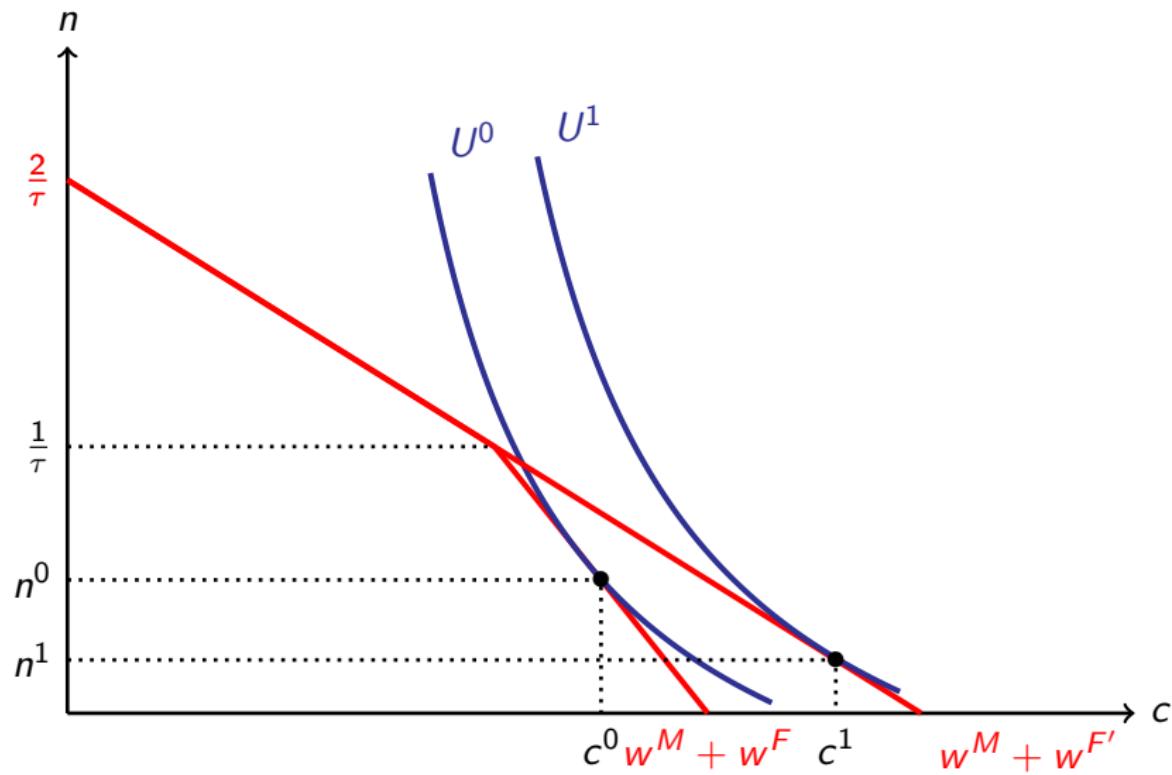
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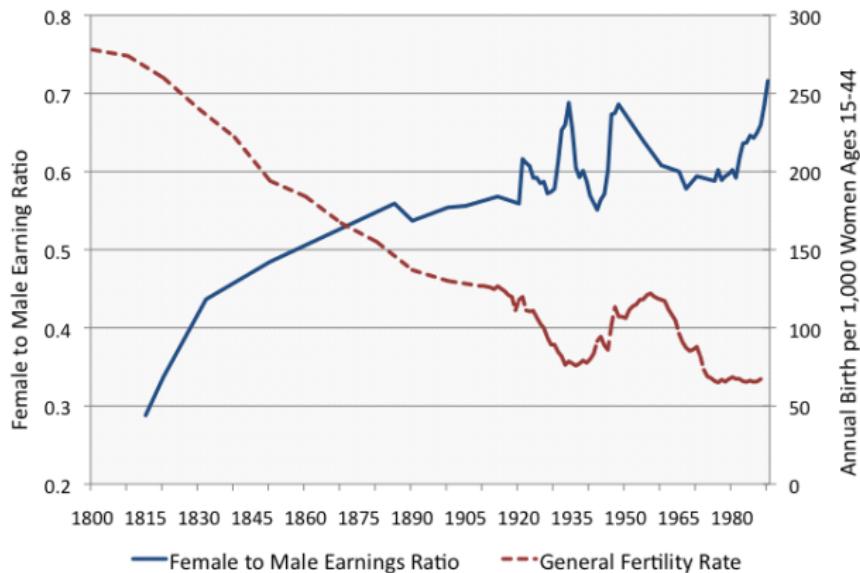
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## The Rise in the Demand for Human Capital - Main Thesis

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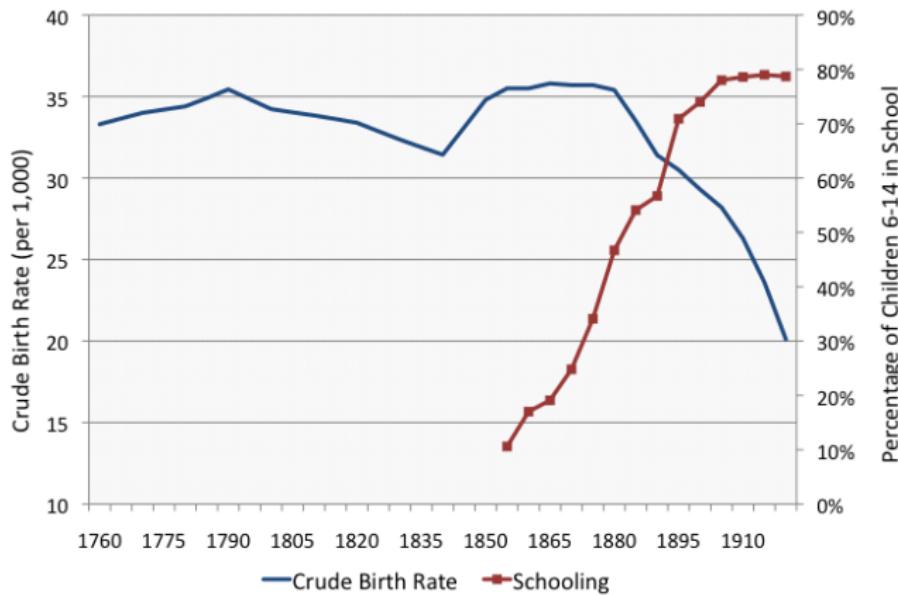
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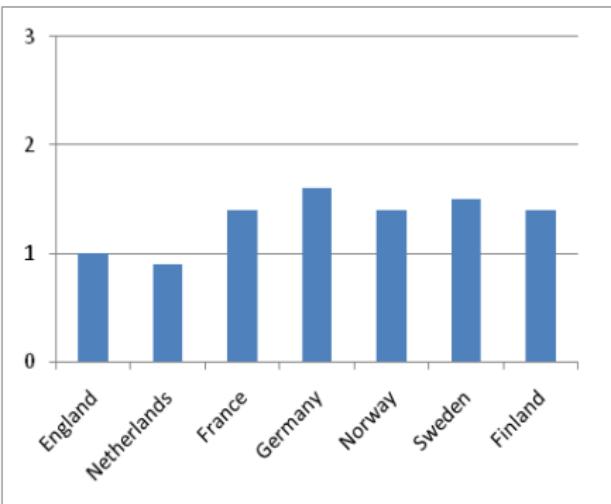
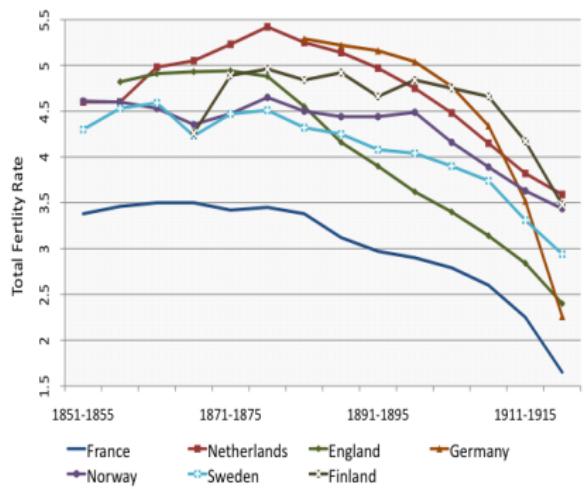
- The cost of educating a child increases and the elasticity of child quality with respect to the cost of child quality is smaller than one in absolute value

$$\partial n / \partial \tau^e < 0 \text{ if } [\partial e / \partial \tau^e][\tau^e / e] > -1$$

## Human Capital Formation and the DT - England



## Growth Rates 1870-1913 and DT



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- Cross Section of Countries (1960-1999): adverse effect on net fertility of an increase in productivity in advanced stages of development, when education demand dominates (Lehr 2009)

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- England (1580-1871) Adverse effect of family size on children's literacy.  
(Klemp-Weisdorf 2016)