Will Poland Catch up with the Industrial Leaders?

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October 23, 2003

Need Theory of Evolution of Income Levels

Theory must be consistent with a number of facts.

But, theory dictates which facts.

Relative TFP are the prime determinant of relative income levels of countries.

The talk today concerns the key mapping from policy arrangement to relative TFP

Labor Market Distortions also Important

Countries	GDP	Hours	GDP/H	Welfare
Germany	100	100	100	100
France	100	100	100	100
Japan	100	140	70	80
U.S.	140	140	100	120

Reason for Lower Incomes

We know why labor supply is low in France, Germany, and Italy – High effective tax rates on labor income.

An open question is why productivity is lower in Japan then in Western Europe and the United States.

In the process of addressing the question “Will Poland Catch Up?” I will address this question.

Pre- 1800 Economy

Relatively constant living standards across countries and time.

Theory has a fixed factor crucial in producing energy – this factor I call land, but it also includes sites for water and wind power.

Land used to grow food for people and horses and to grow trees to be burned for energy.

Increases in TFP offset by population increases.

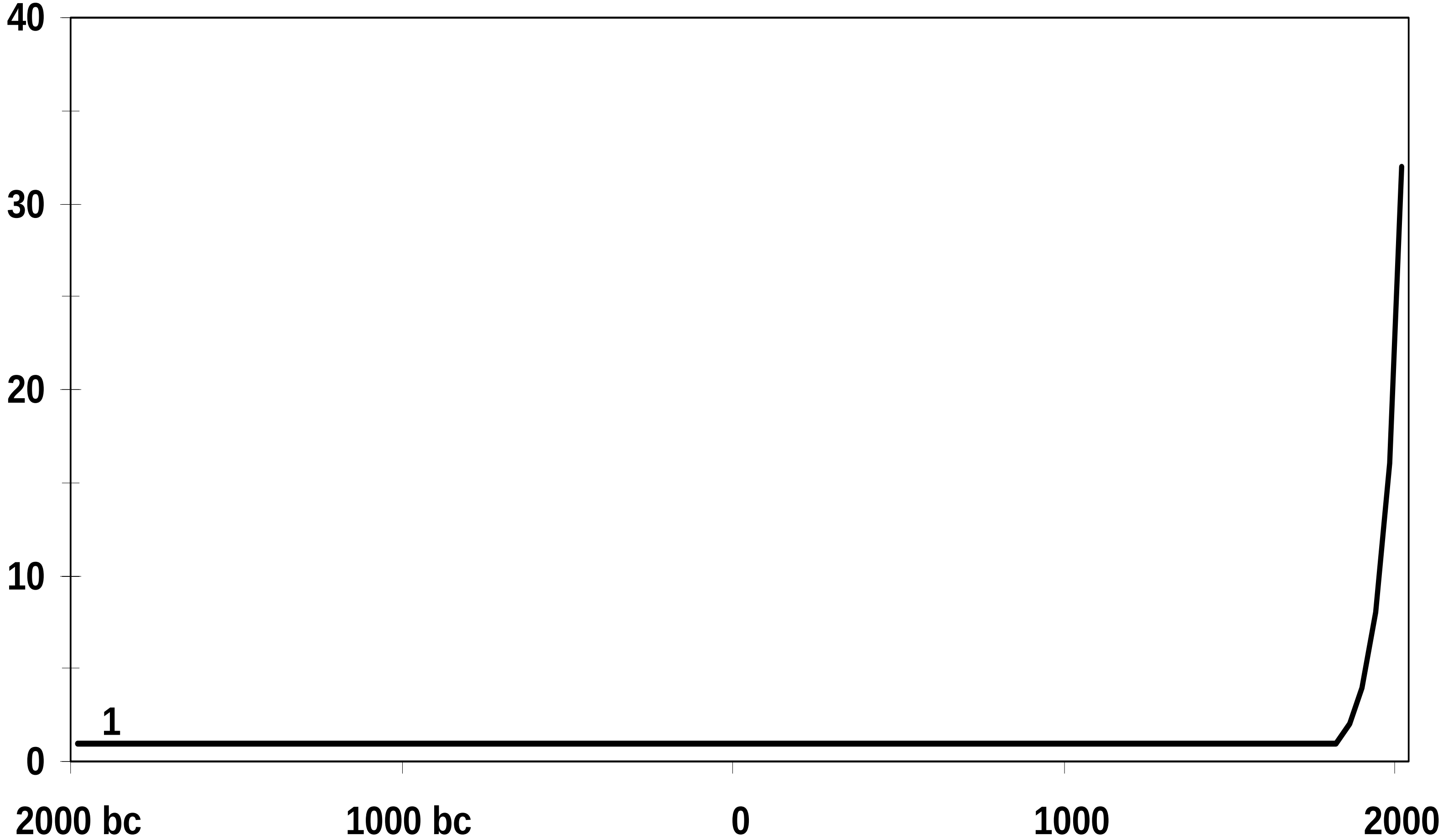
Modern Economic Growth

Transition from Malthusian stagnation to modern economic growth started about 1700 in the UK and latter in other countries – much latter in some countries.

Modern economic growth is characterized by the well know growth facts. K/Y, C/Y, H/N, r, and growth rate constant.

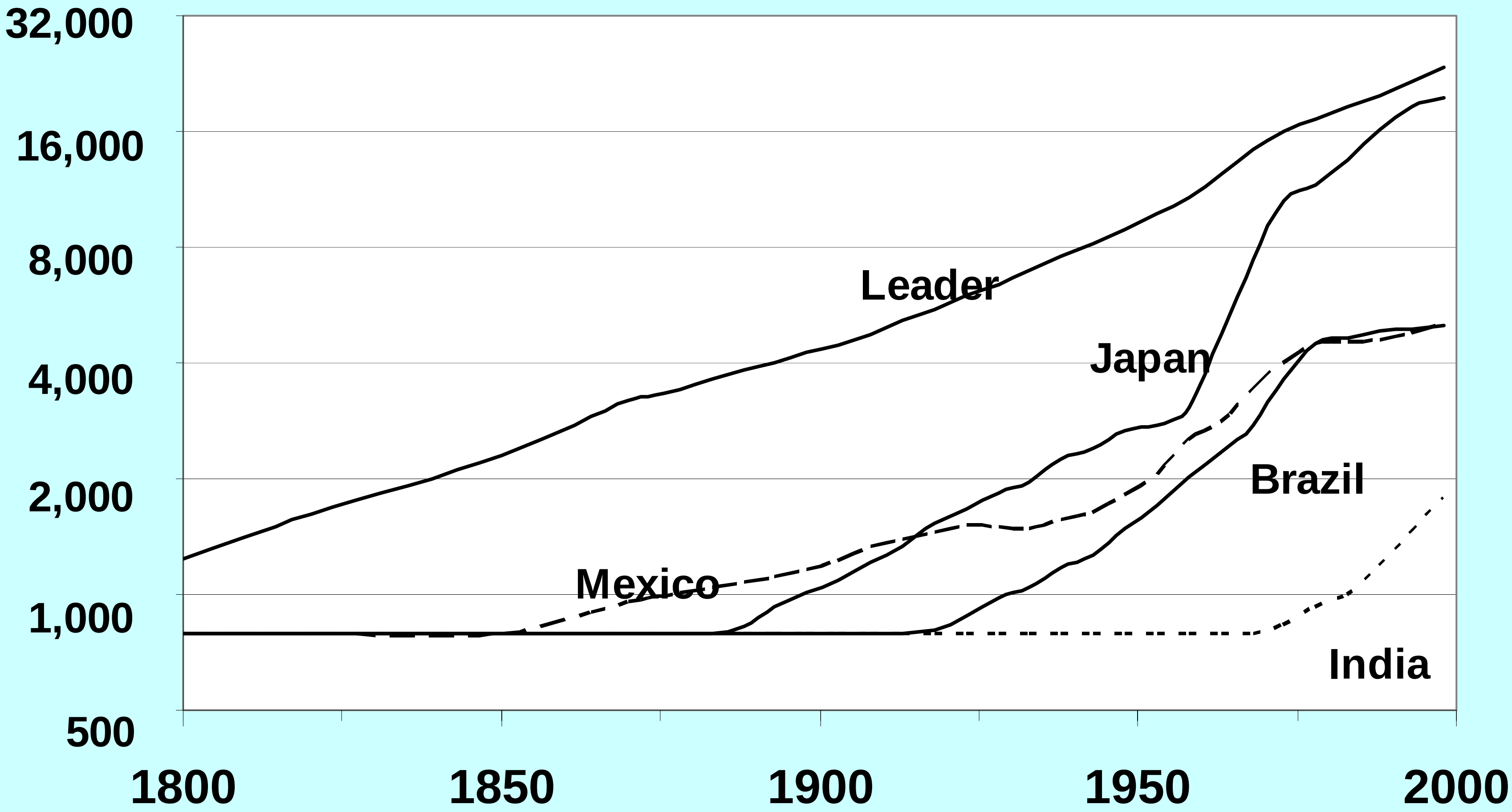
The transition took over a hundred years for those that first made the transition – faster for late starters.

Leader's Per Capita GDP Relative to Pre-1800 Level



Different Countries Start at Different Times

Per Capita GDP Trends (1990 U.S. $)



Modern Economic Growth Model __________________

Stand-in household's willingness to substitute

$$\sum \beta^t N_{it} (\log c_{it} + \alpha \log(1 - h_{it}))$$

Stand-in firm's ability to substitute

$$y_{it} = A_t E_{it} \, k_{it}^{\theta} \, h_{it}^{1-\theta}$$

Total Factor Productivity

$$A_t E_{it}$$

There is a Tested Theory

Stand-in household and stand-in firms the same whether country is Japan, the United States, France, Mexico, Chile, Germany, or I bet, Poland. (See Kehoe and Prescott volume on "Great Depressions of the Twentieth Century, *RED* January 2000)

Tax labor market policies can and no differ, but the factor giving rise to most of international income differences is E, the efficiency factor.

Poland will catch up if its *E* catches up to the leaders *E*.

U.S. and U.K 1865-1928

U.S. per capita GDP 70 percent of U.K. in 1865

Positions reversed in 1928

Question: Why?

Hypothesis: The U.S. was a set of economically sovereign states. Once transportation prices fell as the result of the development of a highly competitive rail system with multiple routes between cities, these competing states became highly economically integrated.

Reasons why Arrangement Fosters Higher *E*

1. **Export industries in a state face elastic demand; implies employment increases when efficiency increases; thus no vested interests in inefficiency.**

2. **There is no centralized mechanism to block the adoption of more efficient production processes in all the member states.**

3. **Localities which protect vested interests of untraded goods, new houses, lose out to other localities where housing prices are lower.**

Another Reason for Lower Barriers

States without groups that will be adversely affected by the introduction of some technology and with groups that will benefit want the better technology adopted there.

Example: Toyota in 1985 located an auto plant in Tennessee introducing just-in-time-production in the U.S. A powerful construction industry wanted the construction project. Politicians wanted more jobs. The same thing happened in Wales in 1990.

Still Another Reason for Lower Barriers

Foreign competitor makes long term investment to get a toe hold. Then its suppliers and employees have a vested interest in that firm succeeding.

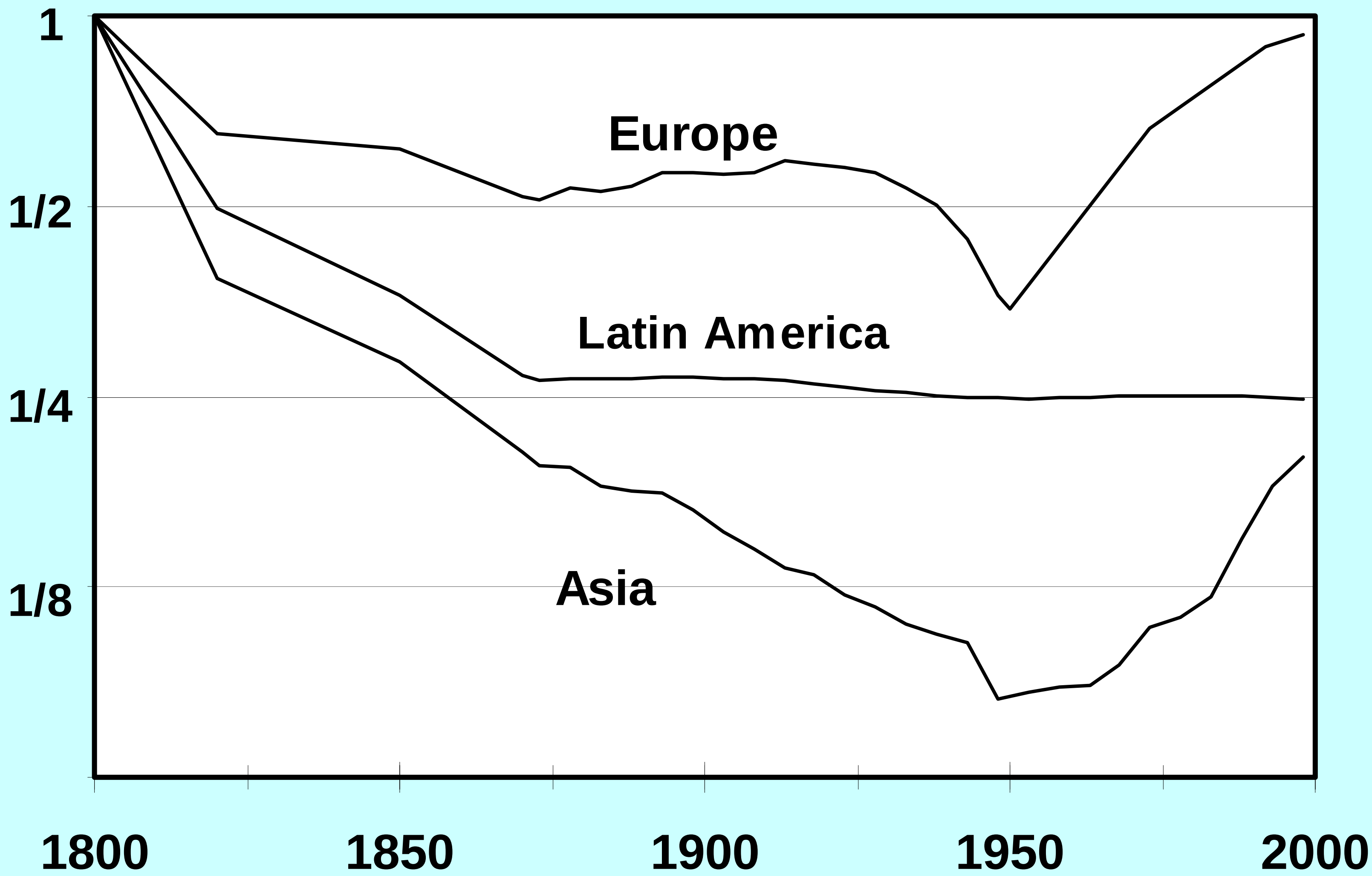
Example: Wal-Mart in Mexico. Long time before the big investment is profitable.

Need confidence that investment will not be expropriated.

Wal-Mart has the organization capital and it will take a long time for Mexican competitors to catch up, but they will.

Catching up: When and Where?

Income: Fraction of the Leader, 1800-1998



Why did Original EU Countries Catch Up ?

(Belgium, France, Germany, Italy, Netherlands)

The measure is productivity, that is output per hour?

Answer: Like U.S. these countries became an economically integrated competitive association of sovereign states where property rights of other members are protected within a country's borders.

Fact: Labor Productivities

Year	Original EU
1870	62
1913	53
1929	52
1959	53
1973	78
1983	84
1993	102
2002	101

What about other Western European Countries ? (Austria, Finland & Sweden who joined EU in 1995; Switzerland)

Year	Others Relative to Original
1900	103
1913	99
1938	103
1957	106
1973	96
1983	85
1993	81

What about Asia Catching up?

Hong Kong had a system with economic freedom imposed by the British.

Singapore had an authoritative government that imposed economic freedom.

S. Korea and Taiwan had to accept economic freedom given defense consideration.

McArthur imposed a system on Japan that worked well and was continued.

What about Asia Catching up? (Cont.)

People in Malaysia seeing neighbors doing well blocked their politicians from granting protection to industry insiders with vested interest in inefficiency.

A set of economically integrated sovereign sates is developing in Asia.

China established a system with provinces having some economic sovereignty in 1978. The Chinese economy experienced rapid growth thereafter.

Why didn't Latin America Catch Up?

Latin America not economically integrated set of sovereign states with protected property rights for foreigners.

If it became one, it would catch up.

Some L.A. states probably will do a lot of catching up, namely ones that become integrated with either NAFTA or the EU.

Brazil could if its member states enjoyed greater economic sovereignty.

Will Poland Catch Up?

YES !