Sources of Economic Growth

UNIVERSITY OF ICELAND

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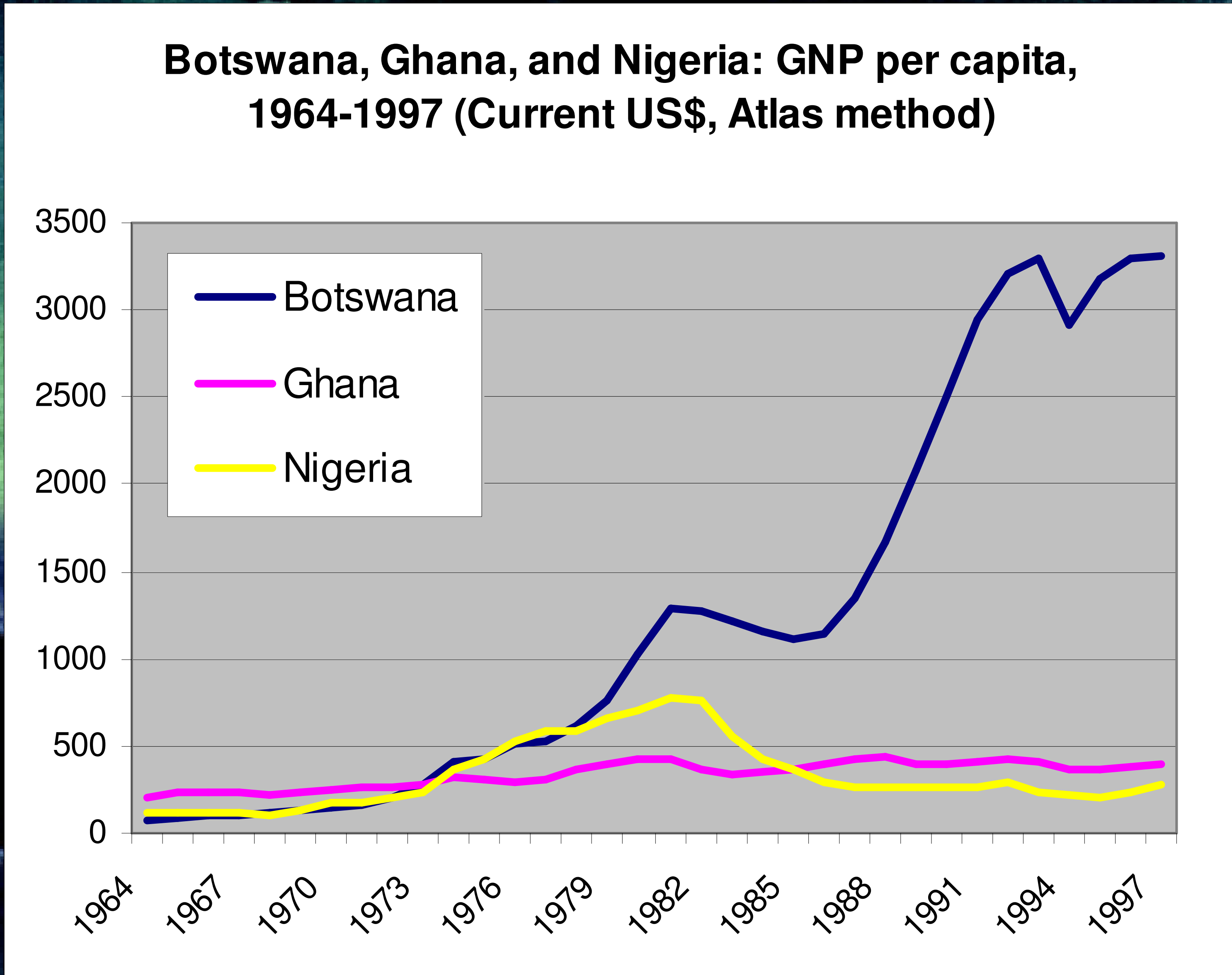
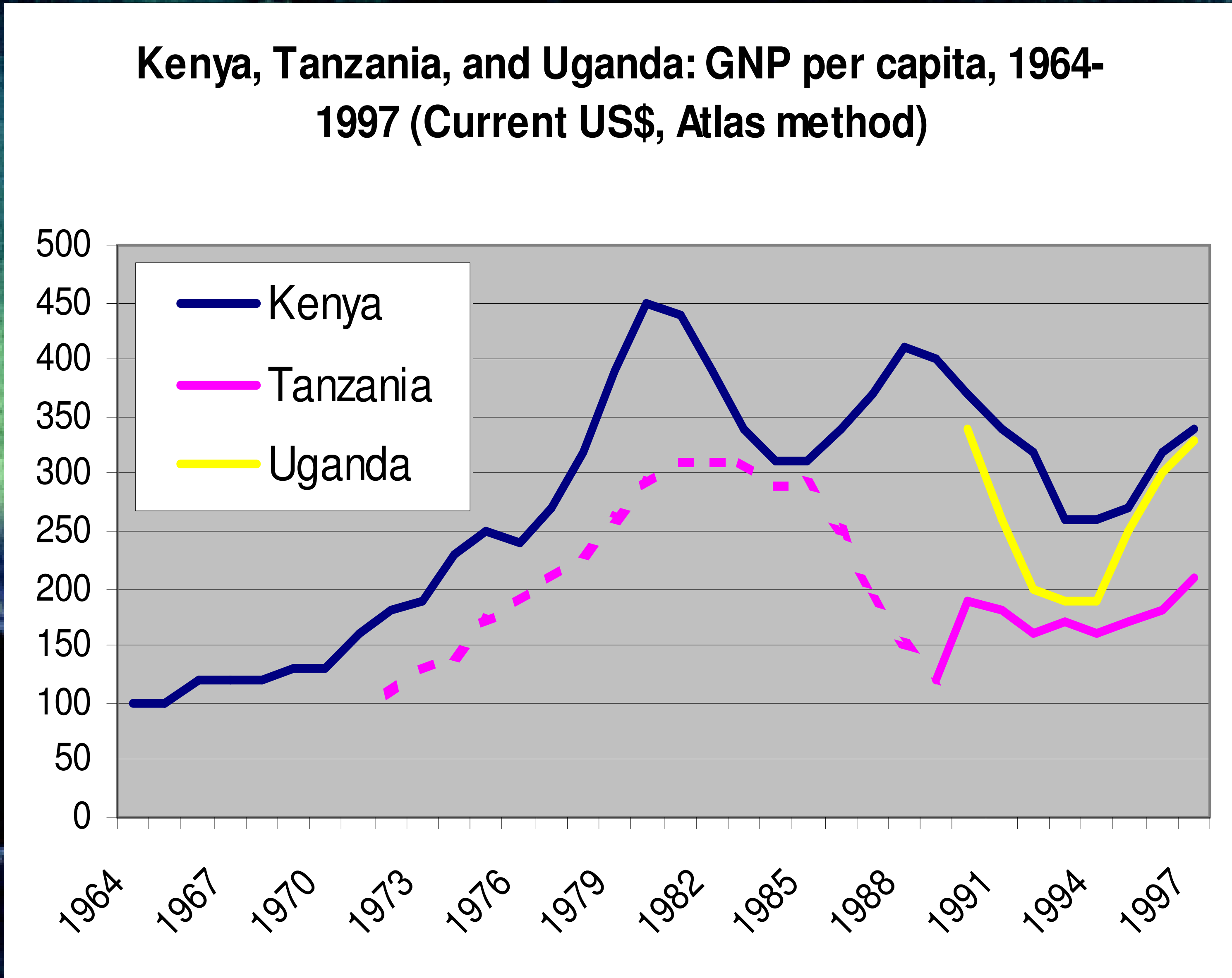
Growing Together, Growing Apart

Example 1

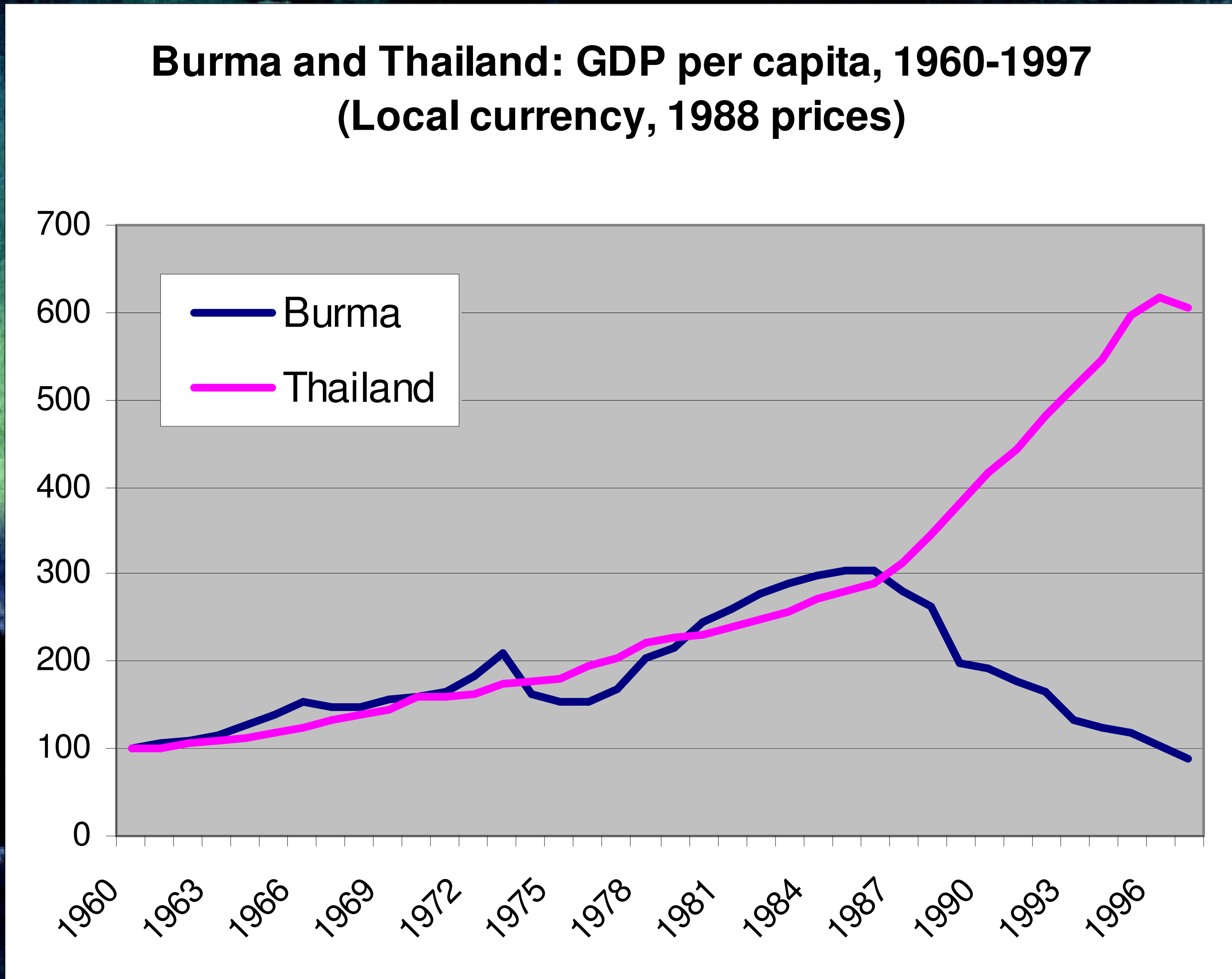

Botswana, Ghana, and Nigeria: GNP per capita, 1964-1997 (Current US$, Atlas method)
3500
3000
2500
2000
1500
1000
500
0
Botswana
Ghana
Nigeria
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

Example 2

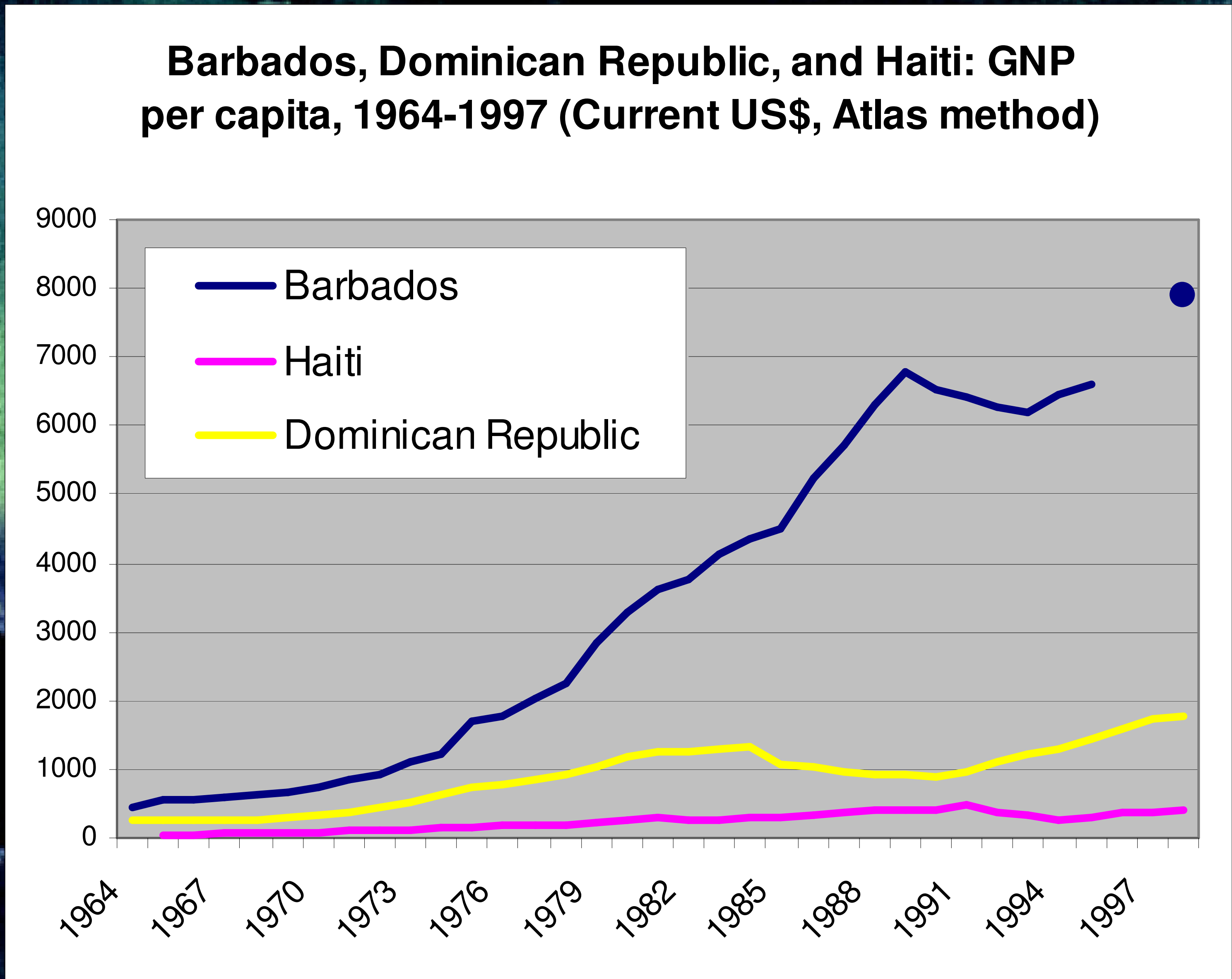


Kenya, Tanzania, and Uganda: GNP per capita, 1964-1997 (Current US$, Atlas method)
Kenya
Tanzania
Uganda
500
450
400
350
300
250
200
150
100
50
0
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

Example 3

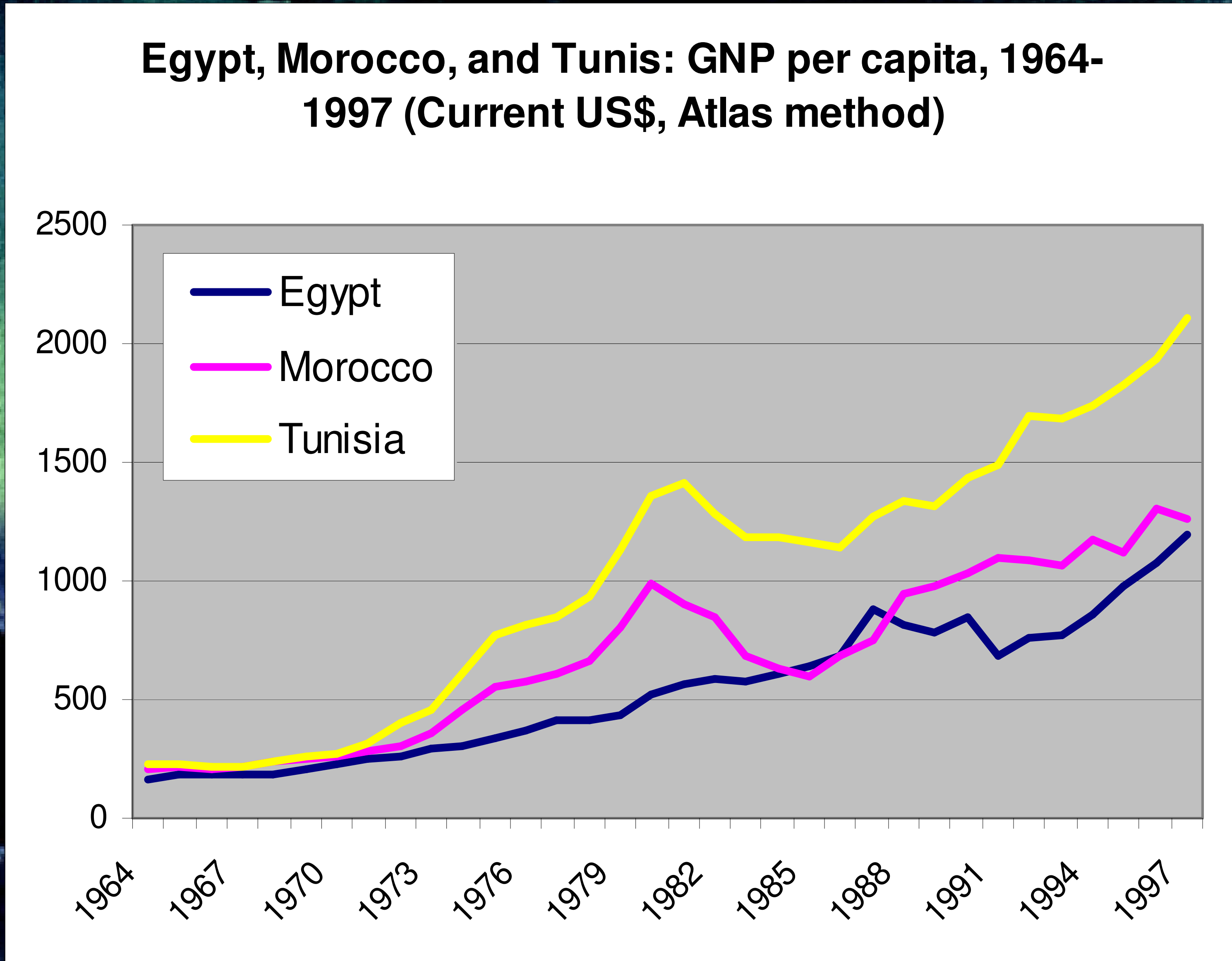

Burma and Thailand: GDP per capita, 1960-1997
(Local currency, 1988 prices)
700
600
500
400
300
200
100
0
Burma
Thailand
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996

Example 4

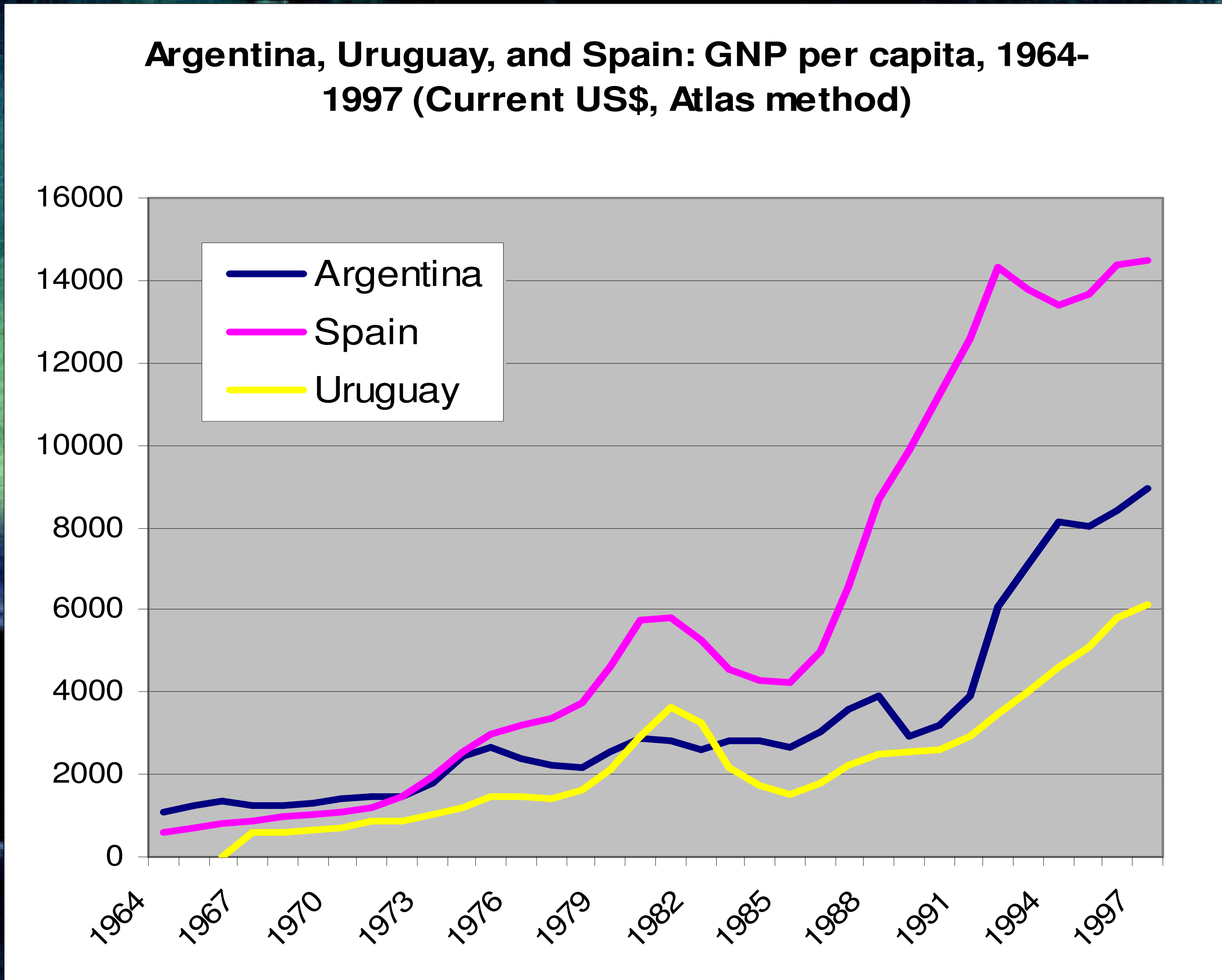


Barbados, Dominican Republic, and Haiti: GNP per capita, 1964-1997 (Current US$, Atlas method)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Barbados
Haiti
Dominican Republic
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

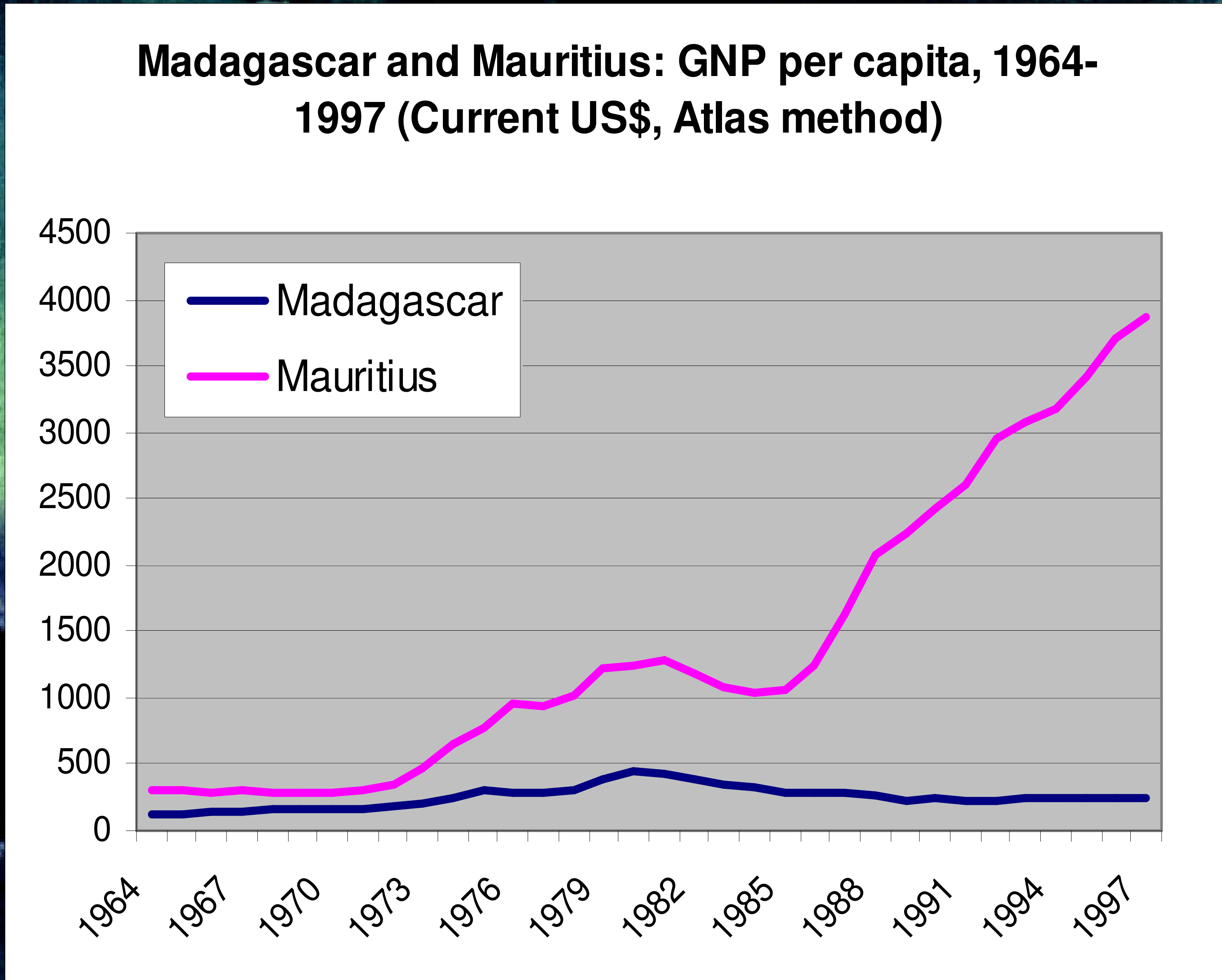
Example 5


Egypt, Morocco, and Tunis: GNP per capita, 1964-1997 (Current US$, Atlas method)
2500
2000
1500
1000
500
0
Egypt
Morocco
Tunisia
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

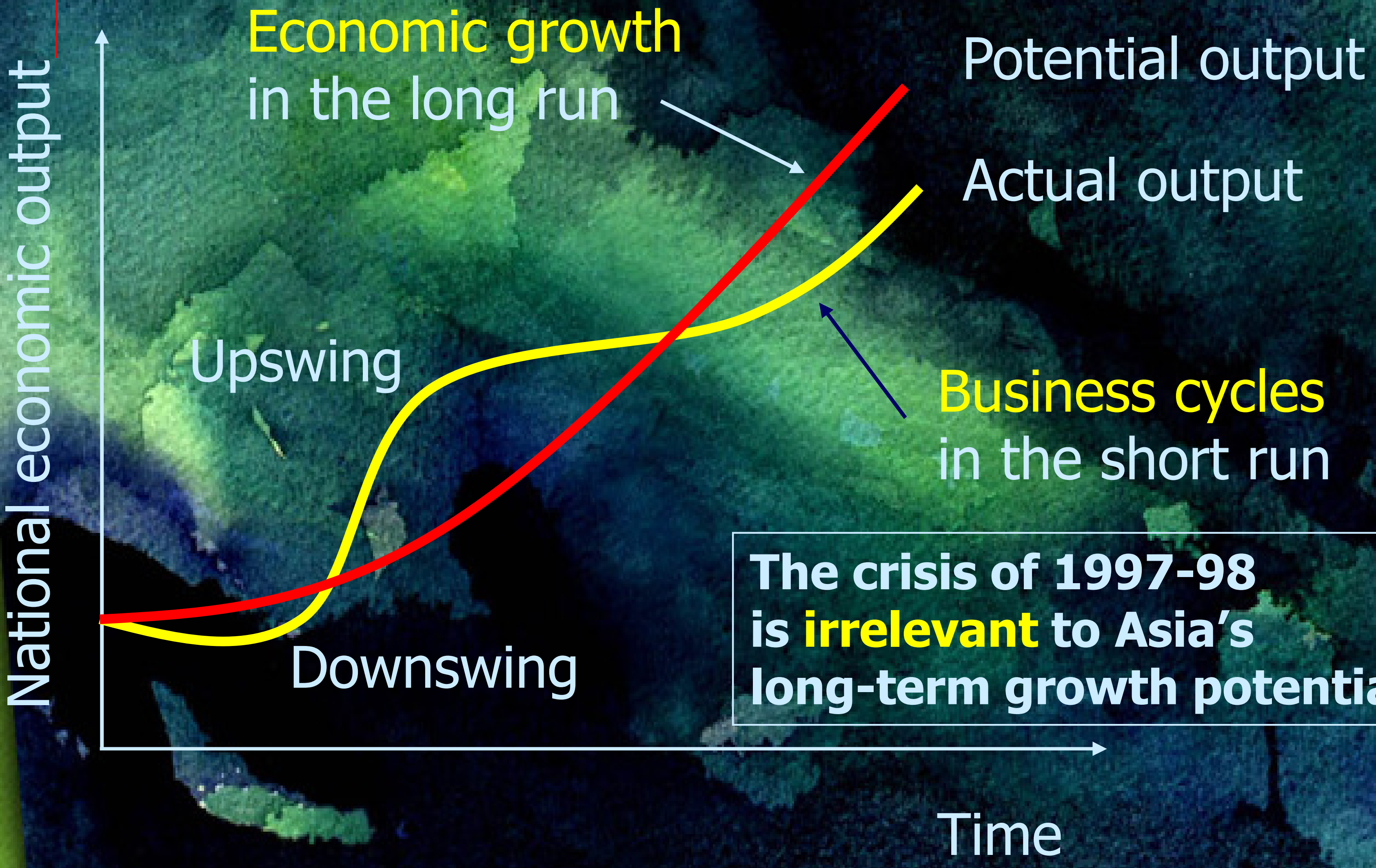
Example 6


Argentina, Uruguay, and Spain: GNP per capita, 1964-1997 (Current US$, Atlas method)
16000
14000
12000
10000
8000
6000
4000
2000
0
Argentina
Spain
Uruguay
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

Example 7


Madagascar and Mauritius: GNP per capita, 1964-1997 (Current US$, Atlas method)
Madagascar
Mauritius
4500
4000
3500
3000
2500
2000
1500
1000
500
0
1964
1967
1970
1973
1976
1979
1982
1985
1988
1991
1994
1997

Economic Growth:
The Short Run vs. the Long Run



The crisis of 1997-98 is irrelevant to Asia's long-term growth potential.

Economic Growth: The Short Run vs. the Long Run

- To analyze the movements of actual output from year to year, viz., in the short run
  - Need short-run macroeconomic theory
    - Keynesian or neoclassical
- To analyze the path of potential output over long periods
  - Need modern **theory of economic growth**
    - Neoclassical or endogenous

The Neoclassical Theory of Exogenous Economic Growth

Traces the rate of growth of output per capita to a single source:

Technological progress

Hence, economic growth in the long run is immune to economic policy, good or bad.

"To change the rate of growth of real output per head you have to change the rate of technical progress."

ROBERT M. SOLOW

The New Theory of Endogenous Economic Growth

Traces the rate of growth of output per capita to three main sources:

- **Saving**
- **Efficiency**
- **Depreciation**

"The proximate causes of economic growth are the effort to economize, the accumulation of knowledge, and the accumulation of capital."

W. ARTHUR LEWIS

Exogenous vs. Endogenous Growth

The neoclassical view

that economic growth in the long run is merely a matter of technology does not throw much light on the spectacular growth performance of Asia since the 1960s.

The new view

that long-run growth depends on saving, efficiency, and depreciation is more illuminating.

Besides, it's not really new, because Adam Smith knew this (1776).

A Simple Model of Endogenous Growth

Four building blocks:

- $S = I$

  Saving equals investment in equilibrium.

- $S = sY$

  Saving is proportional to income.

- $I = \Delta K + \delta K$

  Investment involves addition to capital stock.

- $Y = EK$

  Output depends on quality and quantity of capital.

A Simple Model of Endogenous Growth

Implication:

- $g = sE - \delta$

Rate of economic growth equals

- **Saving rate**

  times

- **Efficiency**

  minus

- **Depreciation**

Endogenous Growth in the Harrod-Domar Model

You may recognize the endogenous growth model as a reinterpretation of the Harrod-Domar model

where growth depends on

A. the saving rate

B. the capital/output ratio

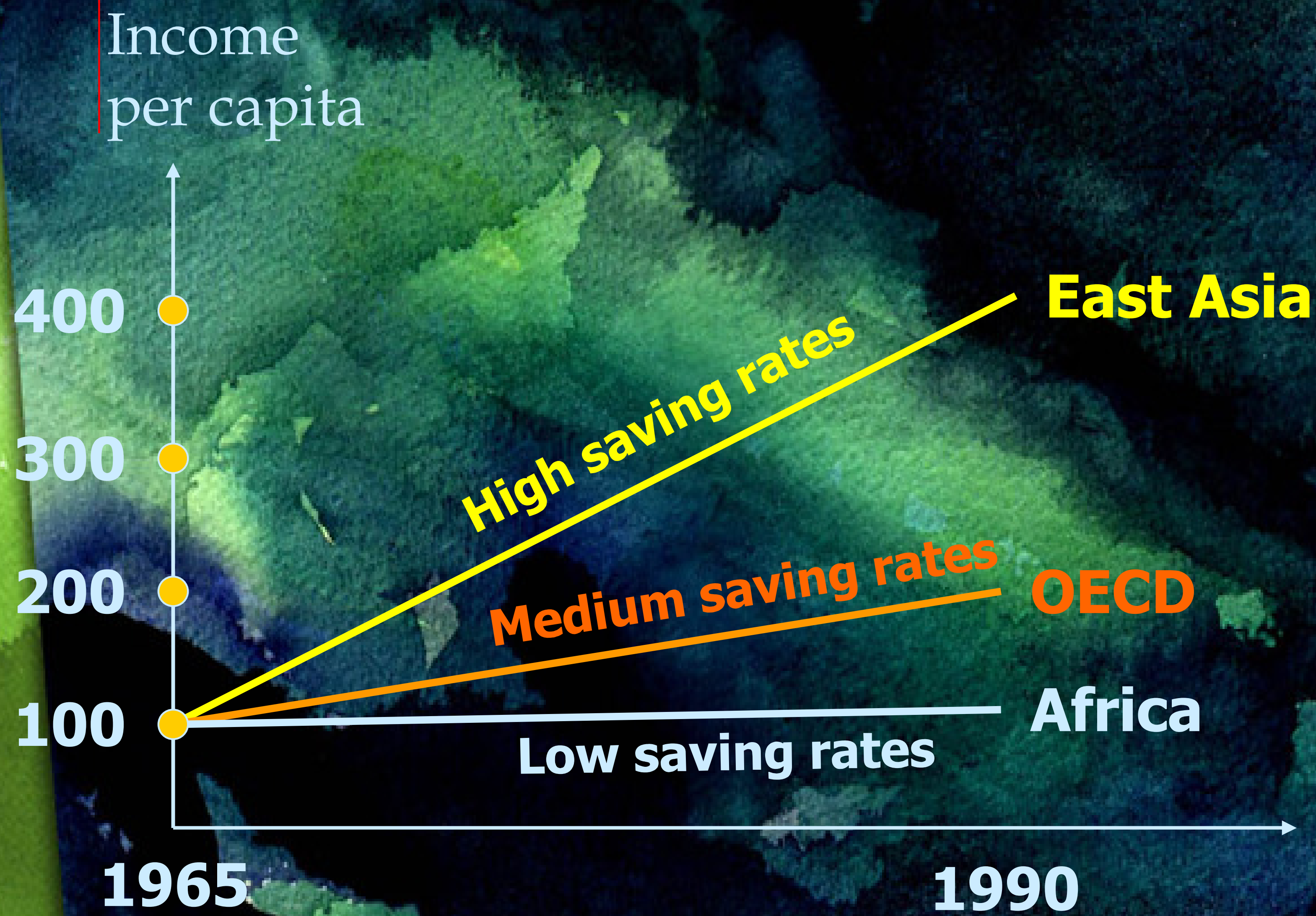
C. the depreciation rate

Sources of Endogenous Growth

Saving

- Fits real world experience quite well
  - No coincidence that, in East Asia, saving rates of 30-40% of GDP went along with rapid economic growth
  - No coincidence either that many African economies with saving rates around 10% of GDP have been stagnant
  - OECD countries: saving rates of about 20% of GDP
- Important implication for economic policy:
  - Economic stability with low inflation and positive real interest rates encourages saving, and thus is good for growth.

Sources of Endogenous Growth



Sources of Endogenous Growth

Depreciation

- ✓The effect of depreciation on growth is related to that of saving on growth.
- ✓Unprofitable investment in the past reduces the quality of capital and thus makes it depreciate more rapidly, necessitating more replacement investment to make up for wear and tear.
- ✓The more national saving has to be set aside for replacement investment, the less will be available for the buildup of new capital.

Sources of Endogenous Growth

Efficiency

- Also fits real world experience quite well
  - Technical progress good for growth because it allows us to squeeze more output from given inputs.
  - But that is exactly what increased **efficiency** is all about!
  - Thus, technology is best viewed as an aspect of general economic efficiency.
- Important implication for economic policy:
  - Everything that increases economic efficiency, no matter what, is also **good for growth**.

Sources of Endogenous Growth

Five sources of increased efficiency

1. Liberalization of prices and trade increases efficiency, and thus is good for growth.
2. Stabilization reduces the inefficiency associated with inflation, and thus is good for growth.
3. Privatization reduces the inefficiency associated with state-owned enterprises, and thus ...
4. Education makes the labor force more efficient.
5. Technological progress also enhances efficiency.

The possibilities are virtually endless!

Sources of Endogenous Growth

This is good news.

- If growth were merely a matter of technology, we would not be able to do much about it …
  - … except to follow technology-friendly policies by supporting R&D and such.
- But if growth depends on saving and efficiency, there are things that we can do, in the private sector as well as through the public sector, to foster rapid economic growth.
- Because everything that is good for saving and efficiency is also **good for growth**.

What to Do to Encourage Economic Growth

Maintain strong incentives to **save**

- Keep inflation low and real interest rates positive
- Maintain financial system in good health
  - so as to channel saving into high-quality investment

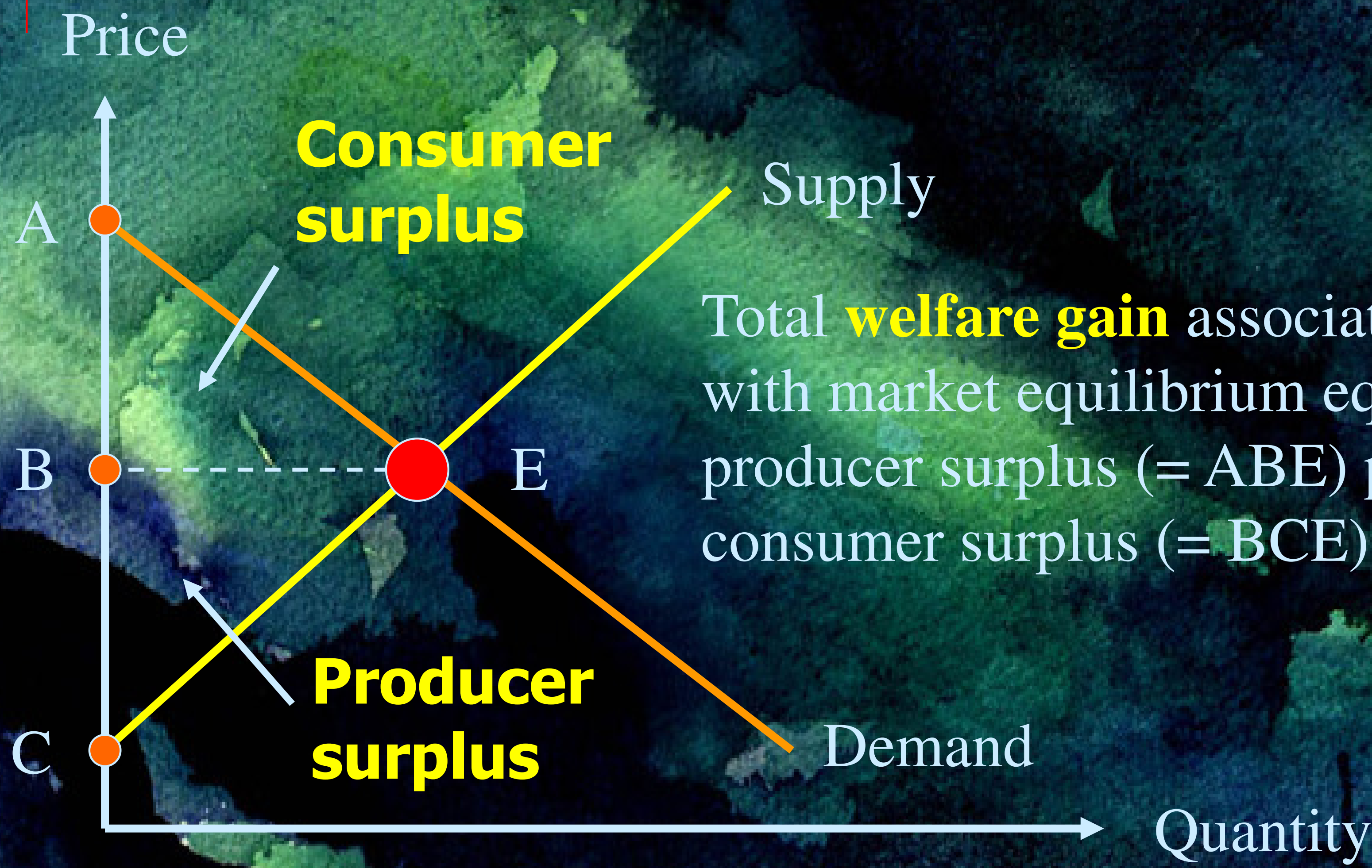
Place strong emphasis on **efficiency**

1. Liberal price and trade regimes
2. Low inflation
3. Strong private sector
4. More and better education
5. Limited natural resources

Liberalization and Economic Growth

- Liberalization of prices means that markets, not bureaucrats, are allowed to set prices.
  - Mixed market economy is more efficient than central planning.
    - ✓ Compare former Soviet Union with the US and Europe
- Liberalization of trade allows specialization according to comparative advantage.
  - Free trade is more efficient than self-sufficiency.
    - ✓ Compare North Korea with Hong Kong and Singapore
- More efficiency is good for growth.

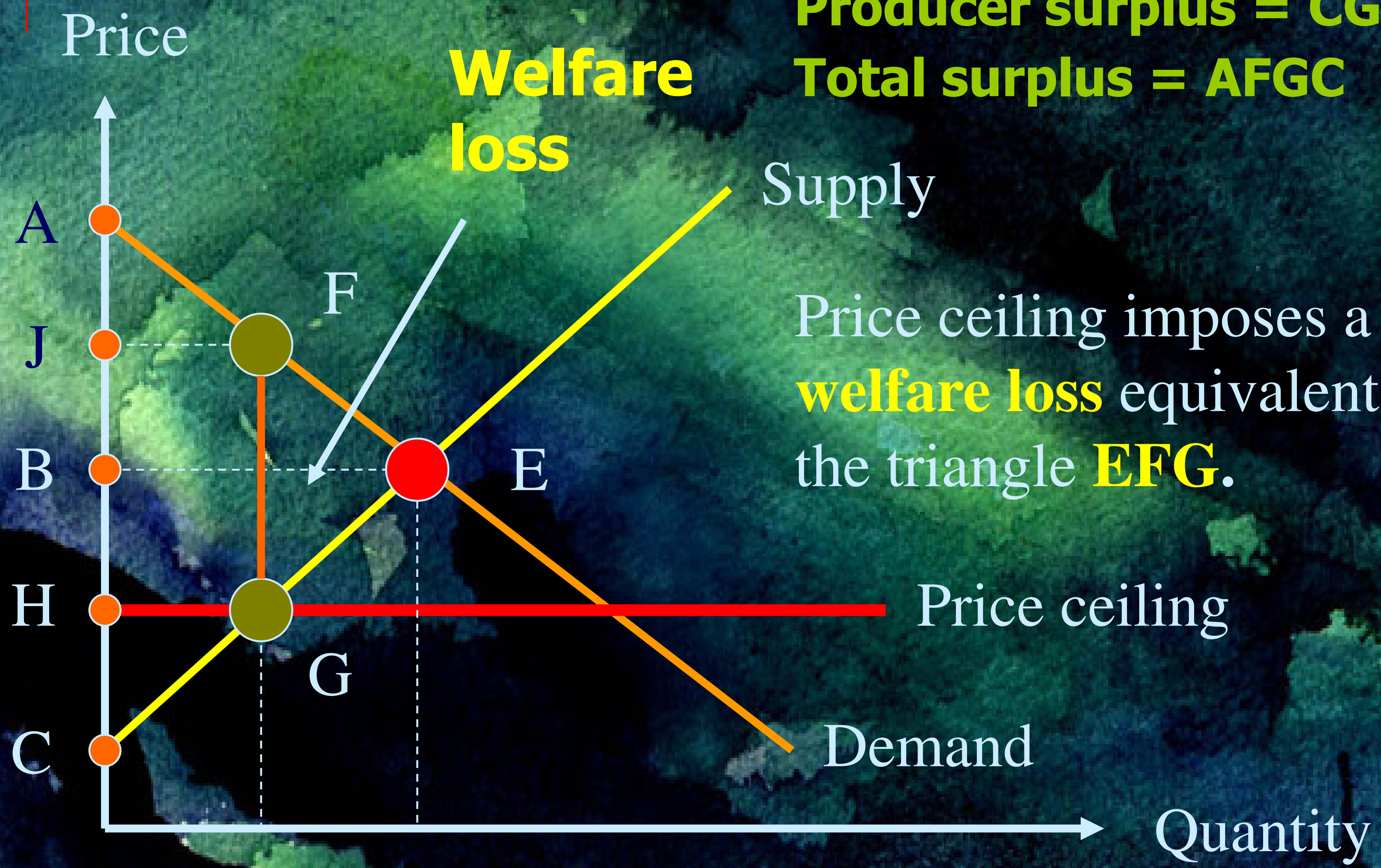
Market equilibrium and economic welfare



Total **welfare gain** associated with market equilibrium equals producer surplus (= ABE) plus consumer surplus (= BCE).

Market intervention and economic welfare

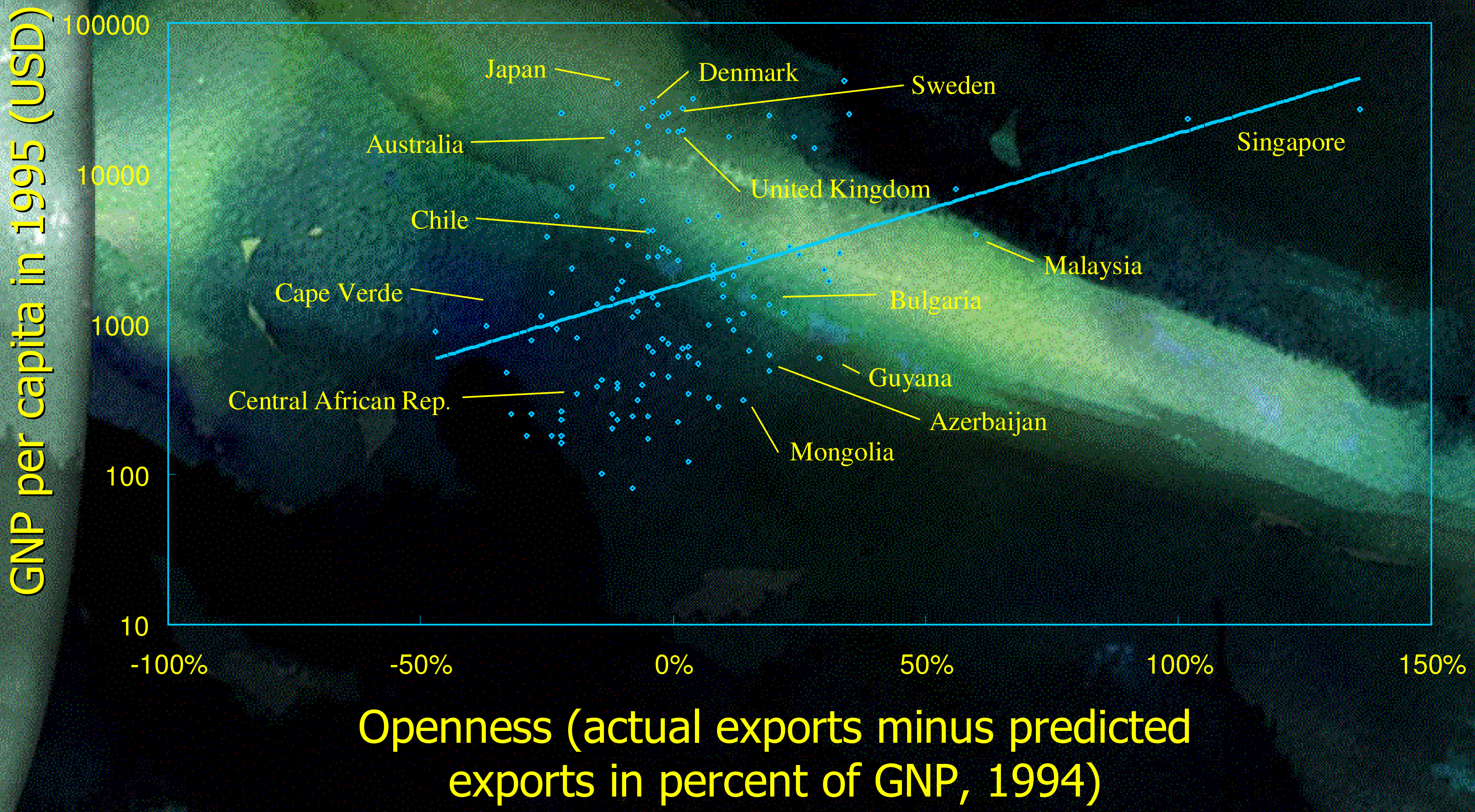
Consumer surplus = AFGH
Producer surplus = CGH
Total surplus = AFGC



Price ceiling imposes a **welfare loss** equivalent to the triangle **EFG**.

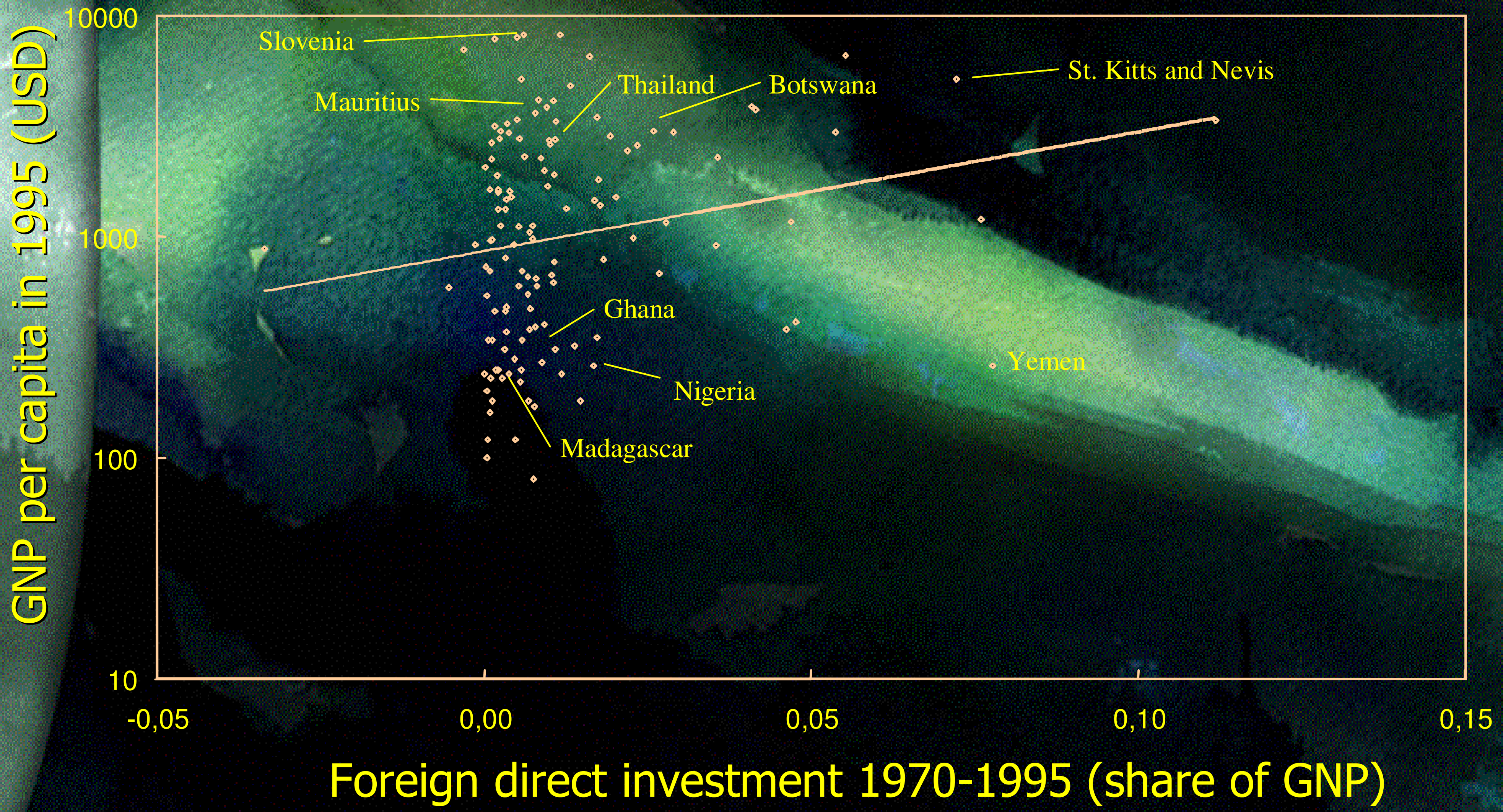
What is the evidence?

Increased Openness Goes Along with Higher Income



More evidence

More Foreign Investment Goes Along with Higher Income



Stabilization and Economic Growth

Stabilization of prices means that distortions associated with inflation are reduced.

- Inflation distorts the choice between real and financial capital by punishing money holdings, and thus creates inefficiency in production.
- Inflation thus involves a tax, the inflation tax.
  - An inefficient tax compared with most other taxes.
- Inflation also creates uncertainly which tends to discourage trade and investment.
- Inflation also tends to result in overvaluation of currency, thus hurting exports and growth.

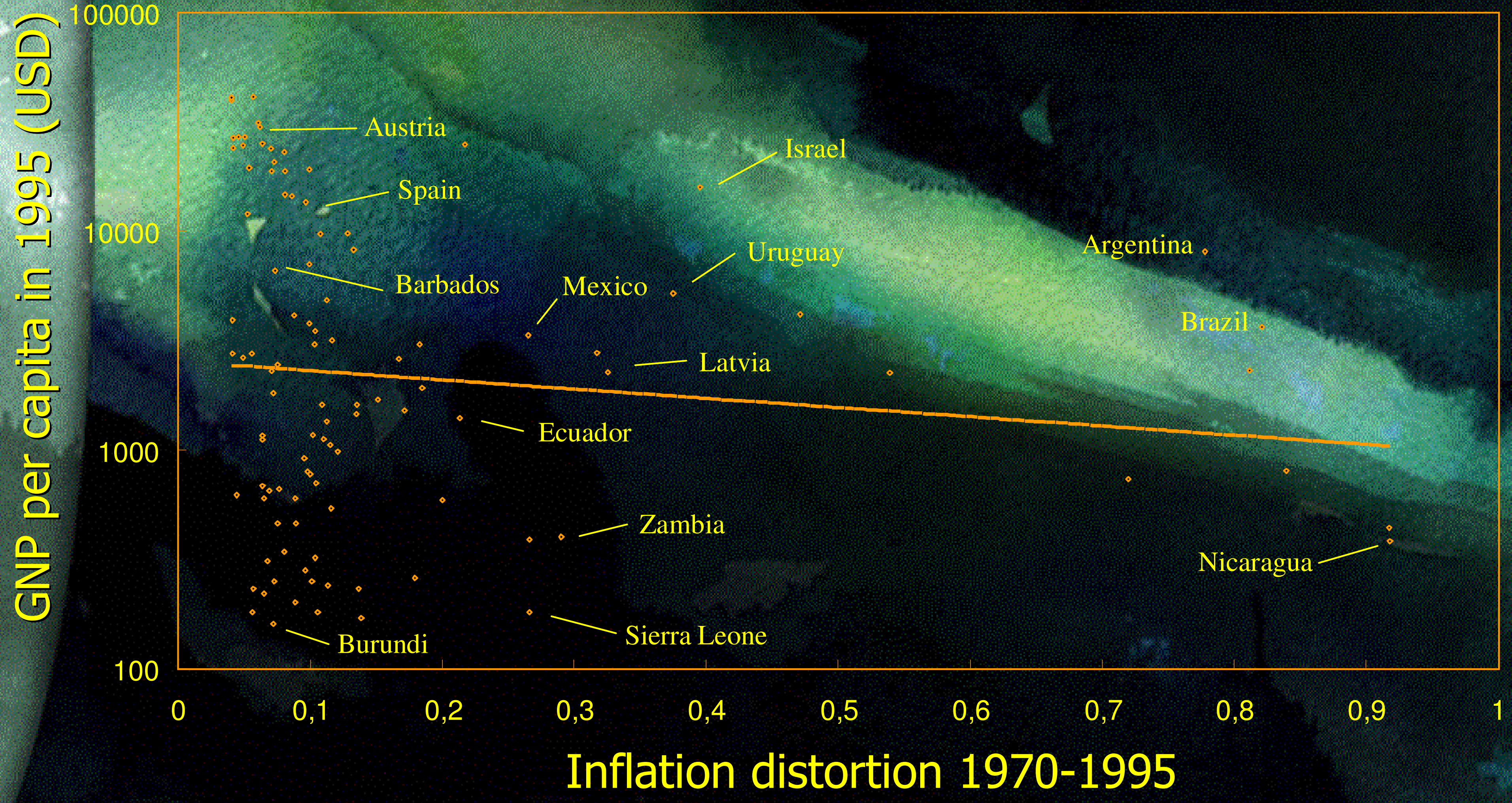
What is the evidence?

The effect on economic growth per capita of a decrease in inflation from 50% to 5% per year

	Number of countries	Period	Data	Effect on growth (in percent)
Fischer (1991)	73	1970-1985	Cross section	2.1
Gylfason (1991)	37	1980-1985	Cross section	2.0
Roubini and Sala-i-Martin (1992)	98	1960-1985	Cross section	2.2
De Gregorio (1993)	12	1950-1985	Cross section	0.7
Fischer (1993)	80	1960-1989	Cross section	1.8
Barro (1995)	100	1960-1990	Cross section	1.0-1.5
Gylfason and Herbertsson (1996)	145-170	1960-1992	Panel data	0.6-1.3
Barro (1997)	80-87	1960-1990	Panel data	1.3-1.8
Bruno and Easterly (1998)	97	1961-1992	Panel data	1.2
Gylfason (1999)	160	1985-1994	Cross section	2.4

More evidence

More Inflation Goes Along with Lower Income

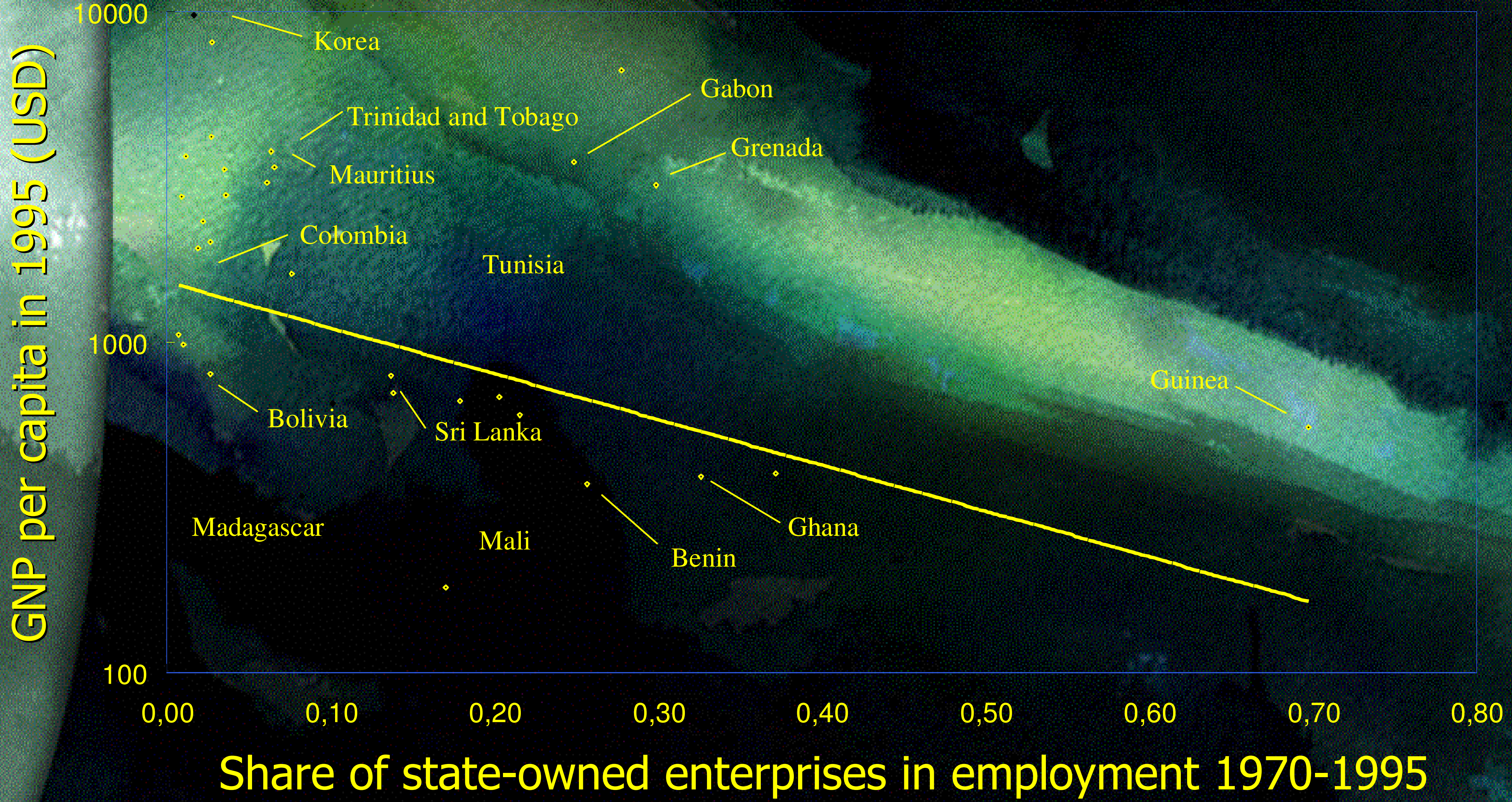


Privatization and Economic Growth

- Privatization means that profit-oriented owners and able managers are allowed to direct enterprises.
  - Profit motive replaces political considerations as the guiding principle of business operations.
    - Profit-maximizing owners generally want to appoint managers and staff on merit rather than on the basis of political connections, for example.
  - Private enterprise is generally more efficient than state-owned enterprises.

What is the evidence?

More State Enterprise Goes Along with Less Income



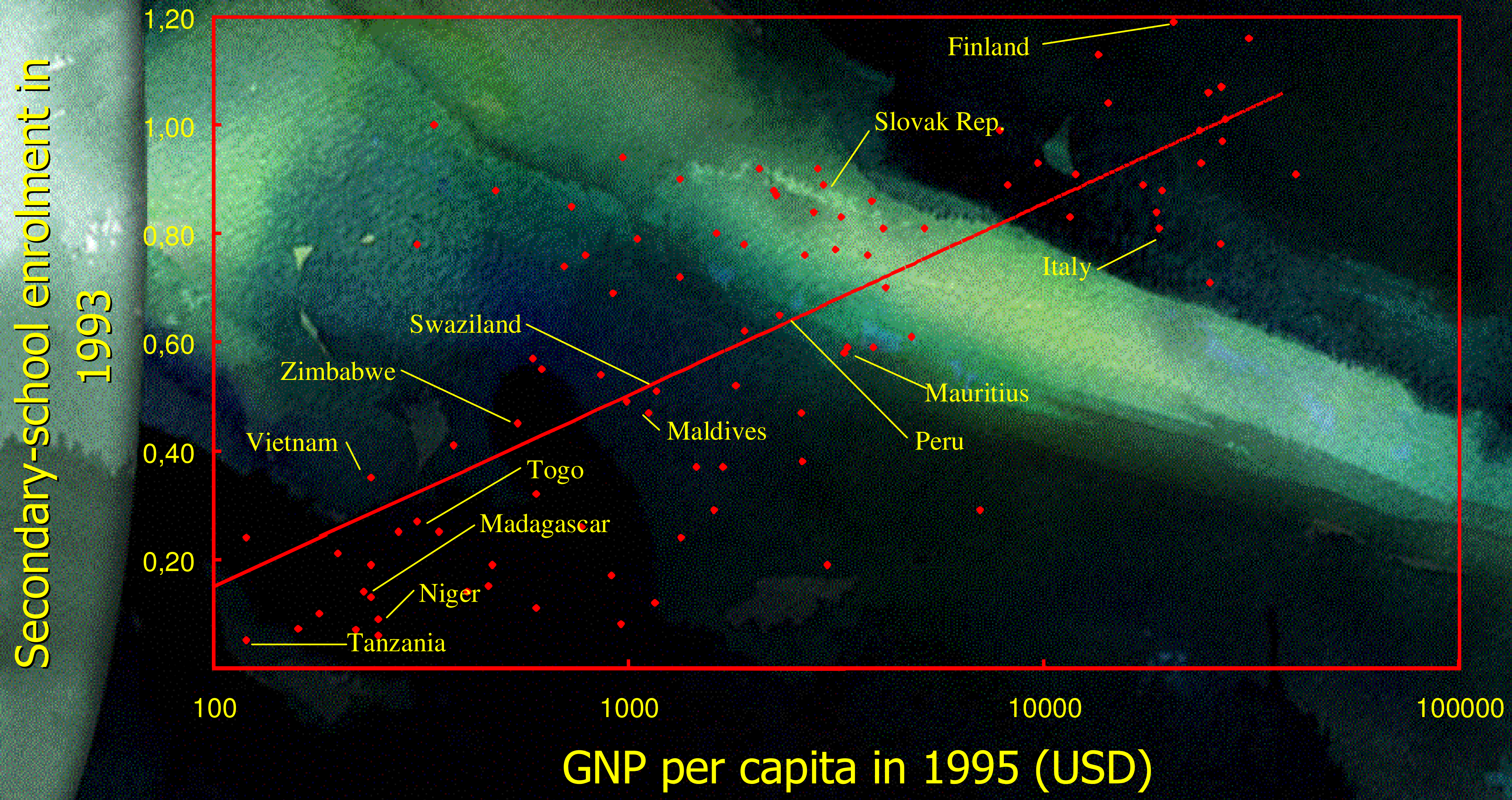
Education and Economic Growth

Education means a better trained and hence more efficient work force.

- Need to provide primary and secondary education to all, especially females
- Need to provide tertiary education to a greatly increased number of people
- Need increased public commitment to education
- This requires both increased public expenditure on education and probably also increased scope for private sector involvement in education.

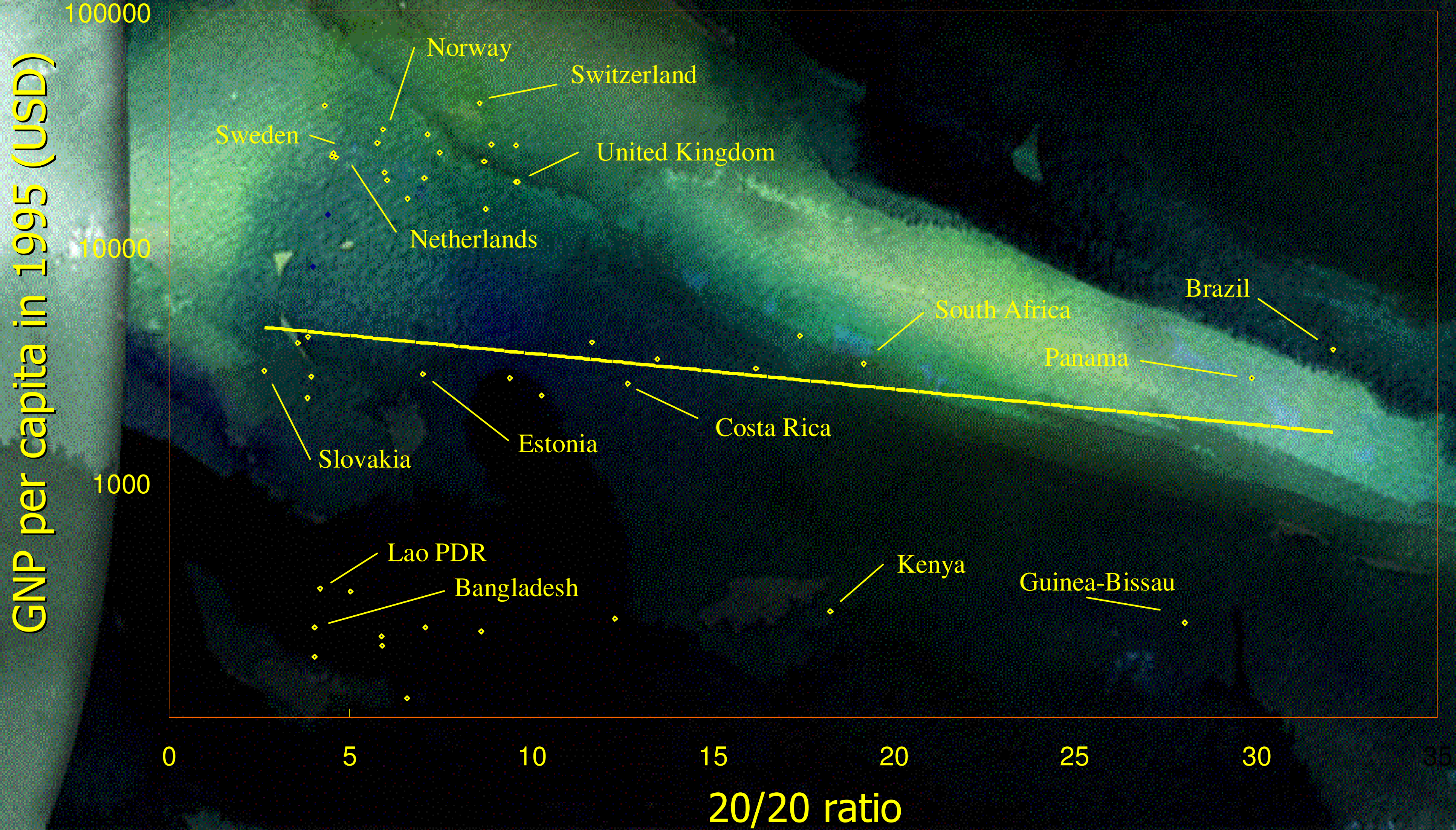
What is the evidence?

Secondary-School Enrolment Varies Directly with Income



Related evidence

Income and Inequality (20/20 Ratio)

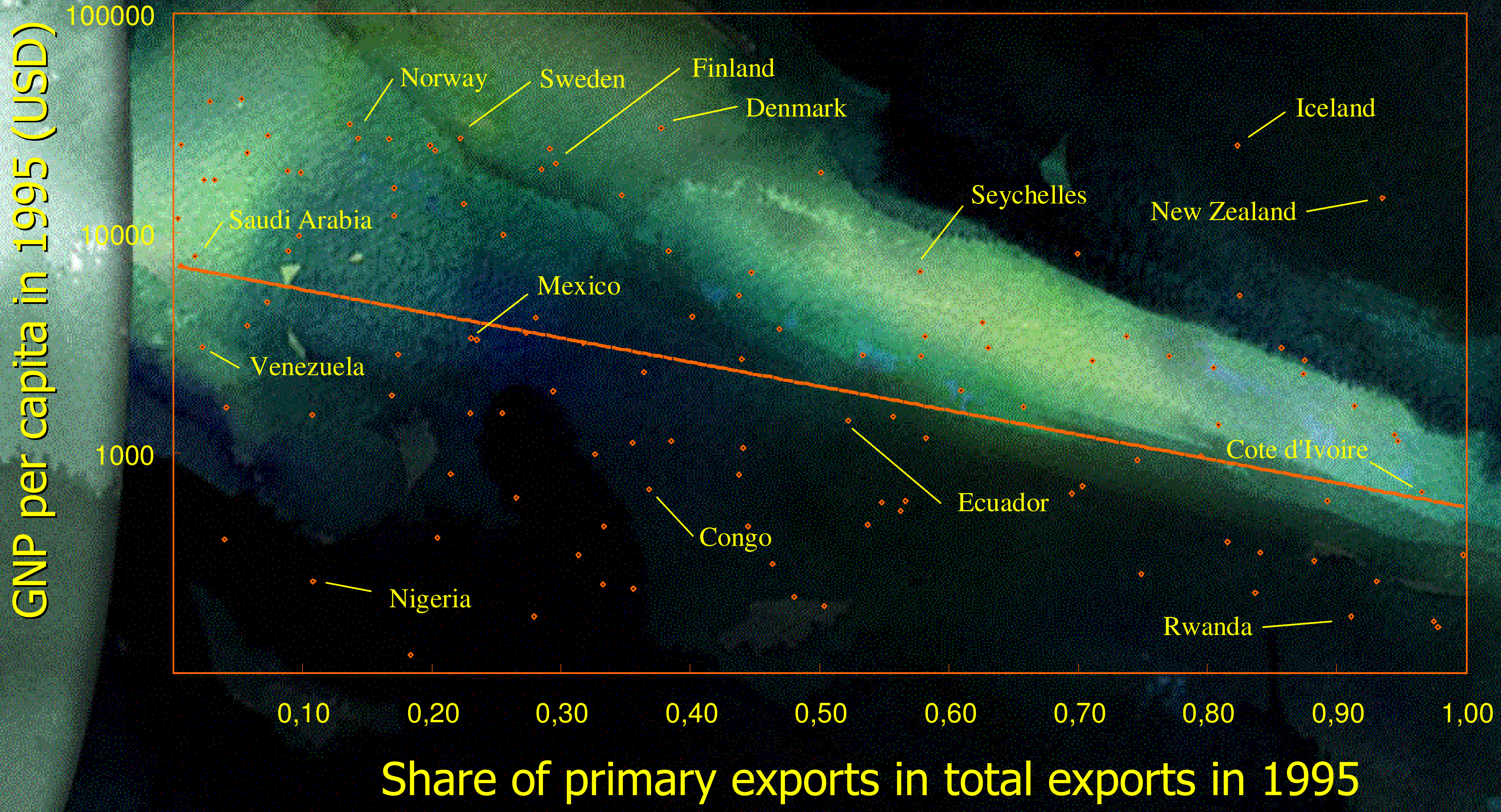


Natural Resources and Economic Growth

- Natural resources, if not well managed, may turn out to be, at best, a mixed blessing.
- Three possible channels
  - ✓ Education
  - ✓ Dutch disease
  - ✓ Rent seeking
- What is the evidence?

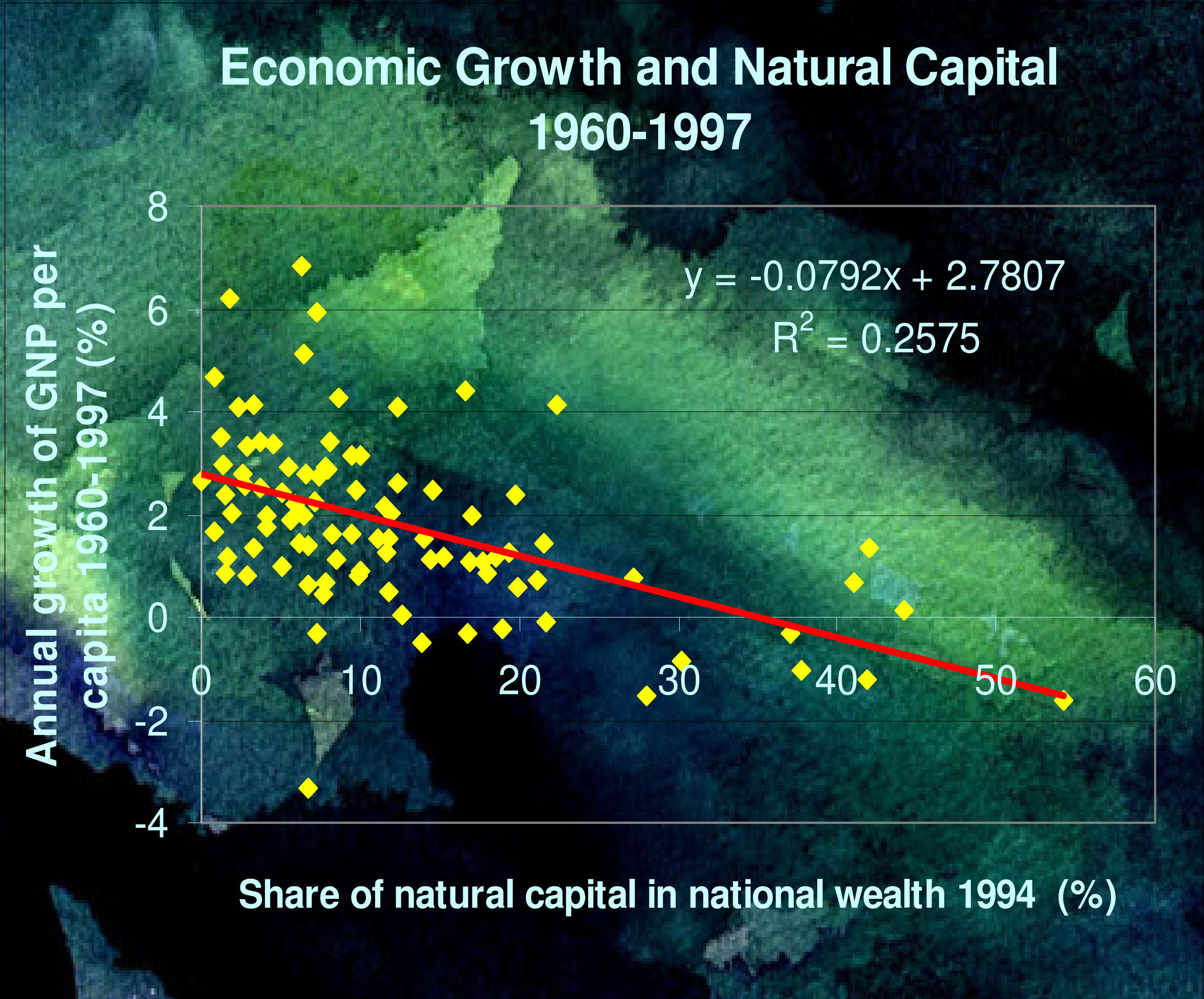
What is the evidence?

More Primary Exports Go Along with Less Income



More evidence

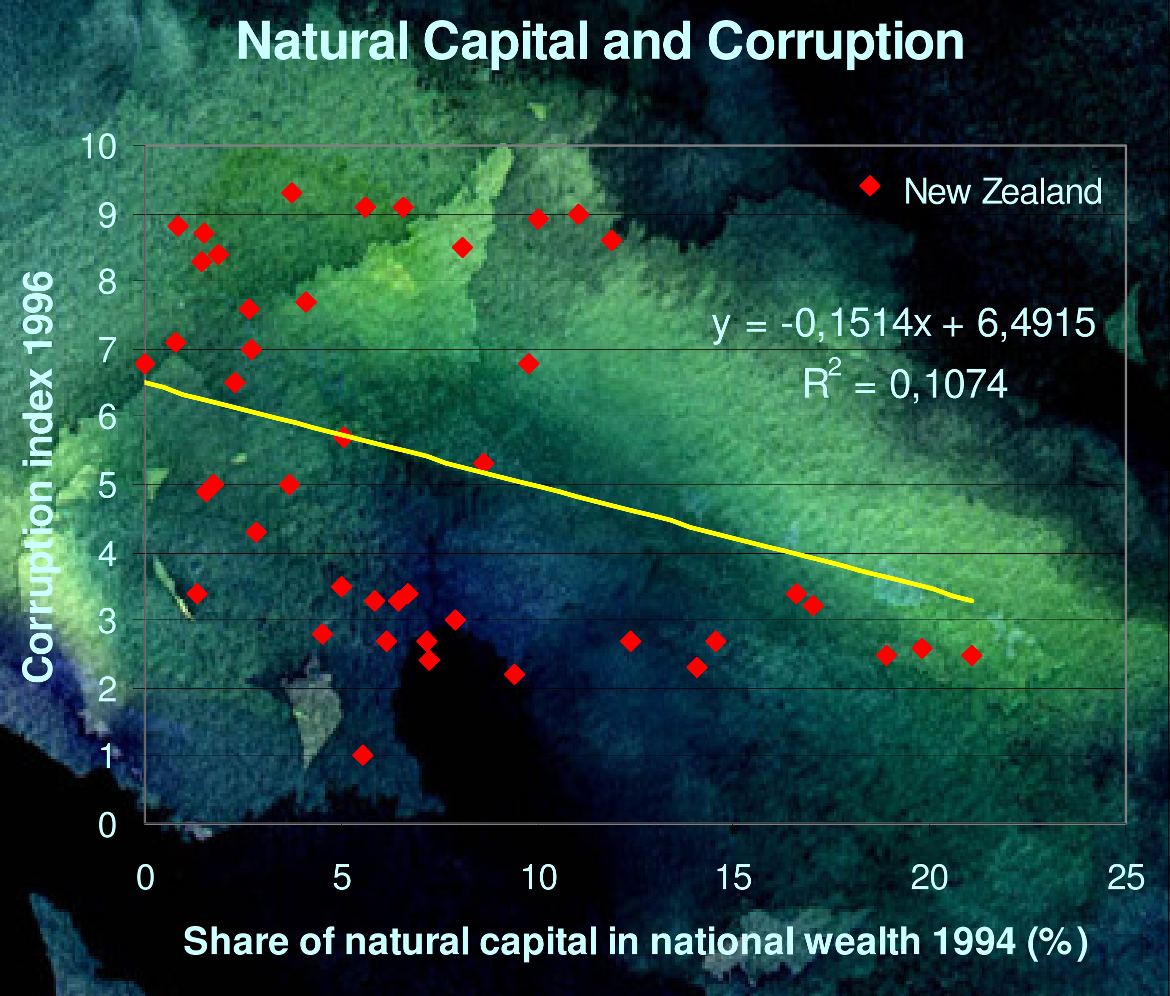
Natural Resources and Economic Growth



Abundant natural resources, if not well managed, appear harmful to growth.

Still more evidence

Natural Resources and Corruption



Abundant natural resources appear conducive to corruption.

In Conclusion

- **Much progress in economic policy and performance around the world in the 1990s**
- **Growth-friendly reforms have been widely embraced**
  - among ordinary people and politicians across the political spectrum, not only in Asia, but also, increasingly, in other parts of the world, including Africa
- **Therefore, the medium-to-long-term growth outlook for the world economy is bright**
  - as long as ….

In Conclusion

… economic and institutional reforms continue so as to preserve a healthy climate for saving, high-quality investment, and increased efficiency across the board

‘Reformers have the idea that change can be achieved by brute sanity’

George Bernard Shaw

To grow or not to grow is in large measure a matter of choice.