From growth models/empirics to growth strategy: an emerging consensus

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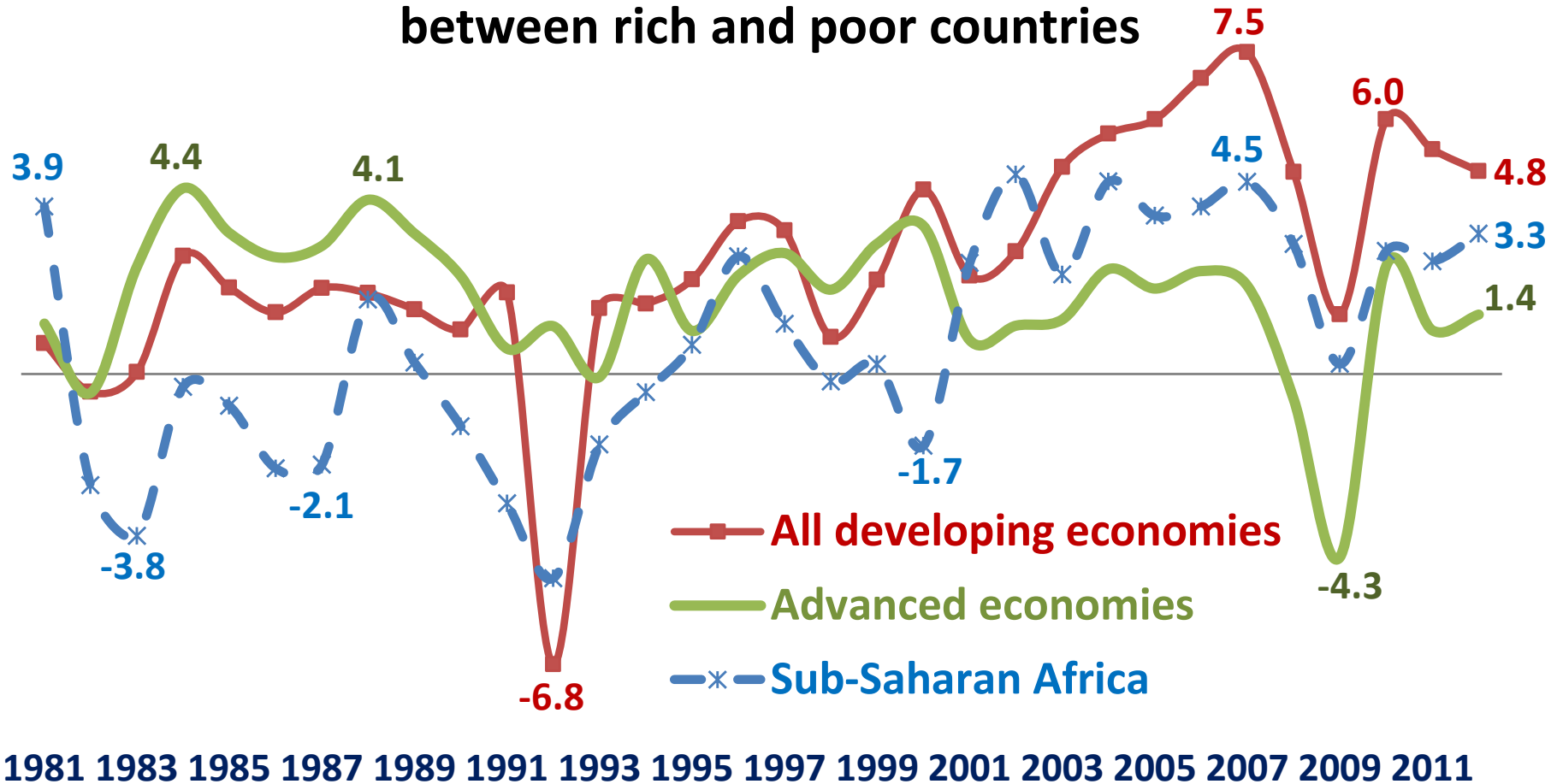
Economic Growth & Development

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Convergence: poor countries grow faster than rich countries

- Convergence of almost every thing except income: neoclassical growth theory predicts rapid convergence…. Even in closed economies with no trade or capital flows.

- Absolute convergence failed

- Capital flows (and labor flows) should make convergence instantaneous, but it was not

- Poor countries seem to stuck in poverty: poverty traps? Barriers to growth

Figure 3: A decade of faster growth shrinks gap between rich and poor countries

3.9

4.4

4.1

7.5

6.0

4.5

4.8

3.3

1.4

-2.1

-1.7

-3.8

-4.3

-6.8

All developing economies

Advanced economies

Sub-Saharan Africa

1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011

Source: Per capita GDP growth from IMF, WEO, September 2011 (2011 forecast)

Falling severe $1.25 a day poverty now to $2.00/day makes see *See Chandy & Gertz (Brookings, Jan 2011)*
www.brookings.edu/papers/2011/01_global_poverty_chandy.aspx

TABLE 1: REGIONAL AND GLOBAL POVERTY, 2005, 2010, 2015

	Number of poor (millions)			Poverty rate (% population)		
	2005	2010	2015	2005	2010	2015
East Asia	304.5	140.4	53.4	16.8%	7.4%	2.7%
Europe and Central Asia	16.0	8.4	4.3	3.4%	1.8%	0.9%
Latin America and Caribbean	45.0	35.0	27.3	8.4%	6.2%	4.5%
Middle East and North Africa	9.4	6.7	5.4	3.8%	2.5%	1.9%
South Asia	583.4	317.9	145.2	40.2%	20.3%	8.7%
Sub-Saharan Africa	379.5	369.9	349.9	54.5%	46.9%	39.3%
World	1,337.8	878.2	585.5	25.7%	15.8%	9.9%

Source: Authors' calculations

Barriers to growth

- Poor institutions, property rights, credit markets etc. (corruption, misuse of aid)
- Resource curse.. Nigeria, Venezuelas
- Capital and trade flows: handmaidens
- Debt crises… many debt crises
- In Africa especially: poverty traps, low savings, low public investment, poor health rapid population growth…

Slaying the dragons

- Absolute convergence 2007-2008
- Reversal of fortune (China and India)
- Capital and trade flows: working in reverse
- Debt crises… odious debt
- In Africa especially: poverty traps, low savings, low public investment, poor health rapid population growth…

Flying Geese Justin Lin

Figure 5
Asian 'wild geese flying' pattern

Structural Transformation in East Asia
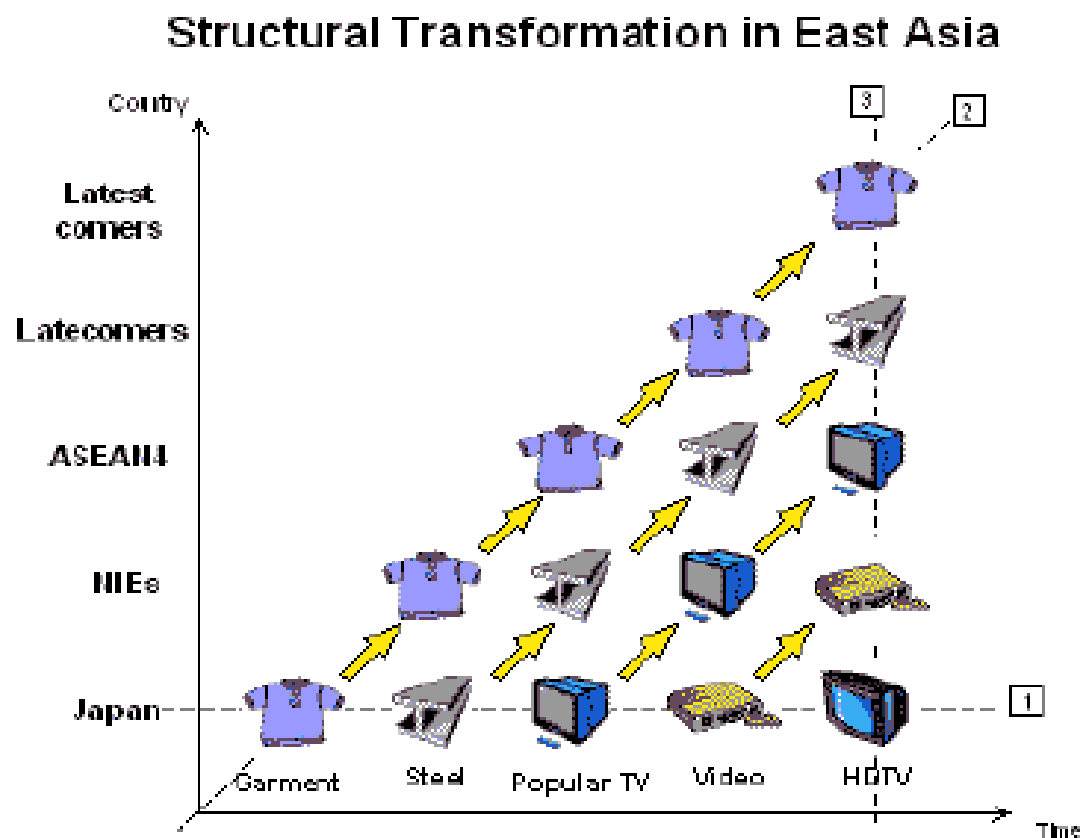
Geese still flying (Akamatsu)

Table 1

Geese still flying in Asia: country rankings in selected industries, 1992 and 2008

Country	Live animals		Pharmaceuticals		Footwear		Iron & steel	
	1992	2008	1992	2008	1992	2008	1992	2008
China	1	1	2	3	1	1	3	1
India	5	4	3	1	4	2	4	4
Japan	3	3	1	2	5	5	1	2
Korea Rep.	2	5	4	4	2	4	2	3
Thailand	4	2	5	5	3	3	5	5

Country	Plastics		Electrical machinery, parts		Television receivers		Toys	
	1992	2008	1992	2008	1992	2008	1992	2008
China	3	1	3	1	3	1	1	1
India	5	5	5	5	5	5	5	5
Japan	1	2	1	2	1	2	2	2
Korea Rep.	2	3	2	3	2	3	3	4
Thailand	4	4	4	4	4	4	4	3

Note: Rankings established from data at the two-digit level for exports in the WITS database.

Source: World Bank, WITS database.

Geese still flying (Akamatsu)

Table 2
Flying geese and the international division of production: Asian economies with a revealed comparative advantage in footwear, 1962–2000

RCA in Footwear								
1962	1965	1970	1975	1980	1985	1990	1995	2000
Japan	Japan							
China	China	China	China	China	China	China	China	China
	Taiwan, China	Taiwan, Ch.	Taiwan, Ch.	Taiwan, Ch.	Taiwan, Ch.	Taiwan, Ch.		
	S. Korea	S. Korea	S. Korea	S. Korea	S. Korea	S. Korea		
		Pakistan						
				Philippines	Philippines	Philippines		
					Thailand	Thailand	Thailand	Thailand
						Indonesia	Indonesia	Indonesia
						India	India	India
							Vietnam	Vietnam
							Sri Lanka	Sri Lanka
								Myanmar
								Bangladesh
								Fiji
								Cambodia

Other L-MICs /LICs

LICs enter

Note: Revealed comparative advantage is calculated as the share of footwear in the economy's exports divided by the share of footwear in global exports. The comparative advantage of a particular economy is 'revealed' when this ratio is greater than 1. All economies in the table except China are ranked by income level.

Source: UN COMTRADE data.

Summary

- Flying Geese (Justin Lin)
- Slain Dragons (barriers to growth overcome)
- From tigers to lions: boom spreads to Africa
- Monkeys jump between trees (industrial policy vs. free trade)
- Growth miracle? Africa can make MDG 1… if current growth continues and we focus on poverty gap.

Compare Sachs et al. (2004) to Africa's Pulse September 2011 (world bank)

FIGURE 1

Weak growth in high income countries

Projected growth

Developing countries

High-income countries

Preliminary forecast
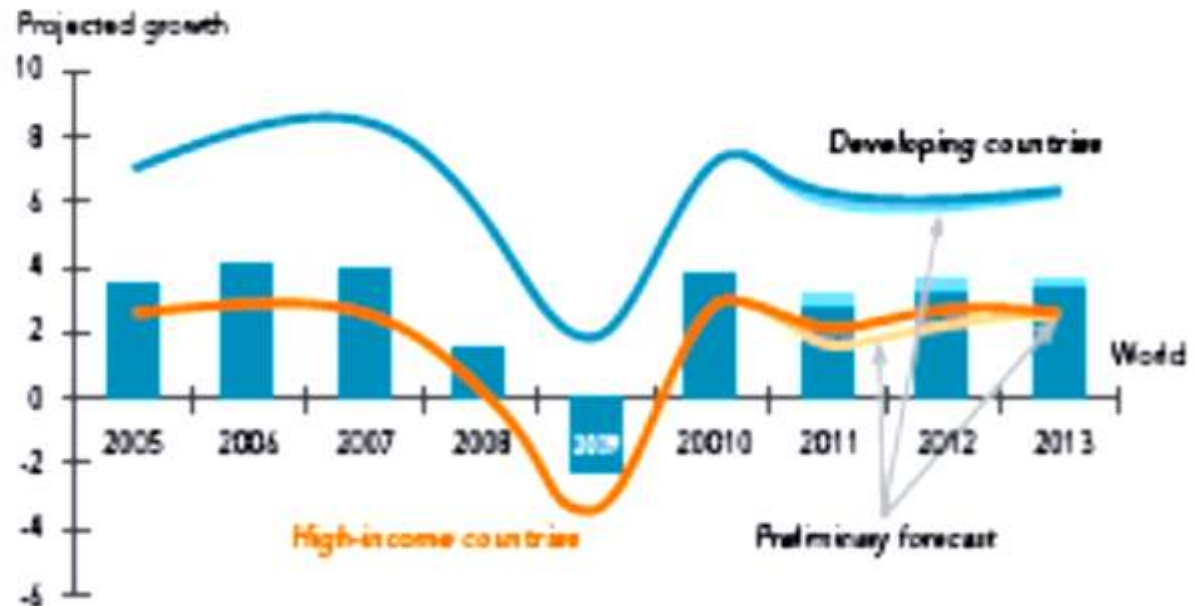
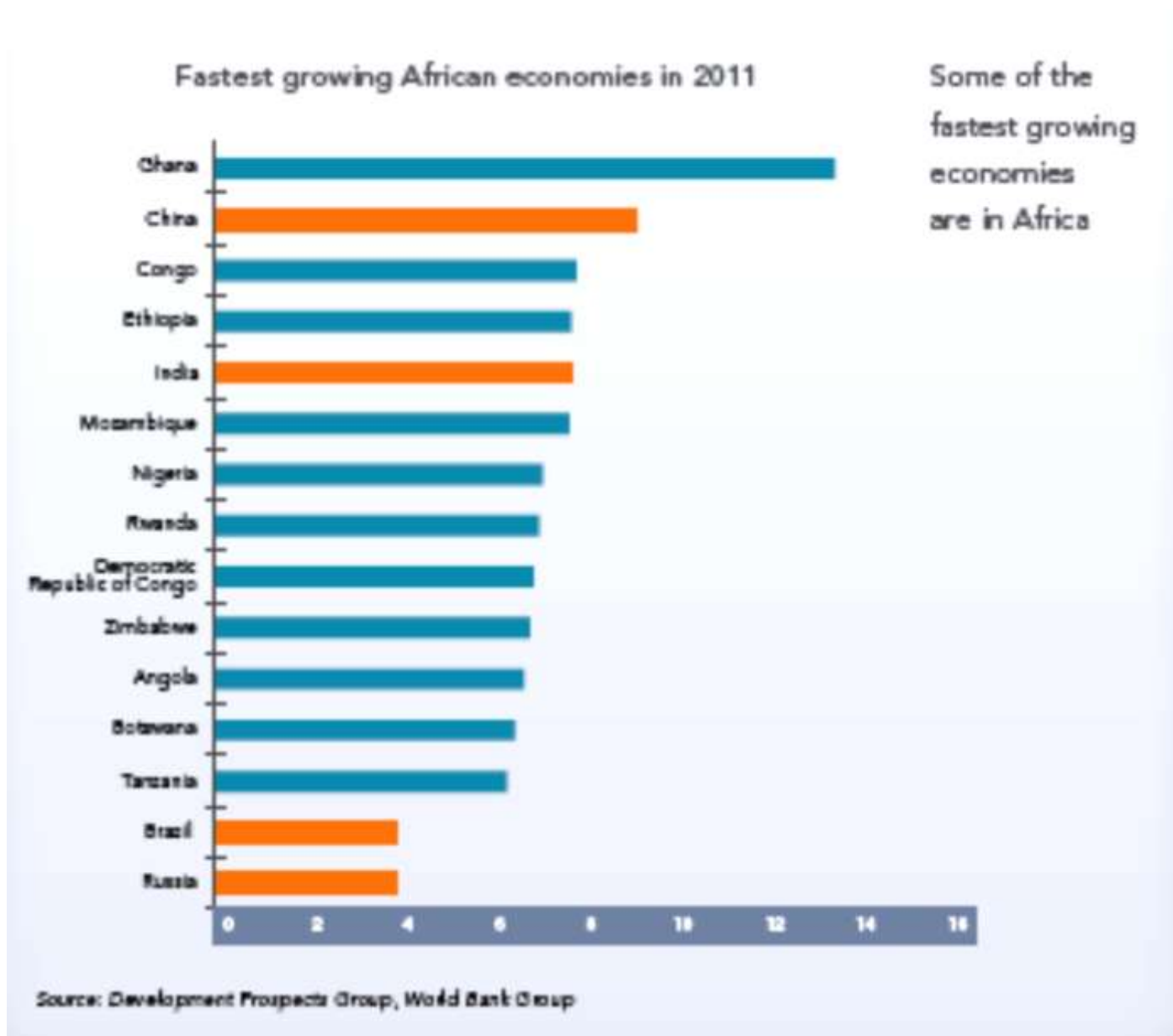World

Source: Global Economic Prospects (June 2011), World Bank

Compare Sachs et al. (2004) to Africa's Pulse September 2011 (world bank)

FIGURE 2, 3

Growth in Sub-Saharan Africa remains robust

Percent growth in GDP

Compare Sachs et al. (2004) to Africa's Pulse September 2011

Fastest growing African economies in 2011

Some of the fastest growing economies are in Africa

Source: Development Prospects Group, World Bank Group

Food prices rise, but not everywhere

FIGURE 12 — Prices of key staples in Africa

African countries show heterogeneity in food price movements

Source: Price Watch, FEWS NET, August 2017

Today

- Conditional vs. Absolute convergence
- Three growth models
- Poverty traps
- Trade vs. industrial policy
- Rapid growth despite resources boom

New issues:

Migration, microfinance and climate change

Generic poverty trap from Banerjee and Duflo (2011) Poor Economics Chapter 1

S-Shape Curve and the Poverty Trap

Development imperatives

1. Climate change: adaptation vs. mitigation, migration vs. development

2. Food and commodity price increases (landless poor) slowing growth in yields per hectare.

3. High fertility rates: world population now 7 billion...

4. Migration and remittances... works (Kerala) but driven by 1-3 could be politically destabilizing.

Development outcomes

- Arab Spring: convergence in education and health (life span) governance

- Food and commodity price increases (landless poor)

- High fertility rates: world population now 7 billion…

- Migration and remittances… Kerala

- China and India: commodity prices

Consensus on growth strategies: post East Asian miracle (institutions?)

Early Washington Consensus
- Trade liberalization
- Open capital account??
- Macroeconomic stability
- Privatization

Sachs-Warner Index:
- Tariffs < 10%, quotas <40%
- BMP < 20%
- Non-socialist government
- No export monopoly

Post EA miracle consensus
- Weak RER
- Macro stability
- Exports and FDI
- EPZ + socialism works too

Africa w/poverty traps:
- **Levers for growth**
- **Macro stability, weak RER**
- **Aid OK, resource rents?**
- **Aid can break poverty trap**
- **Debt relief?**

What about institutions?

Institutions fundamental but,

- Country specific (Rodrik) hard to change
- May be endogenous (Resource curse- Collier)
- Correlated with Geography (Sachs- malaria, landlocked)
- Some work-arounds: (Collier– ISA, military, EPZs)
- Asset redistribution shocks

Not essential as there are other levers for growth (Johnson et al.below)

- Trade- EPZs
- Competition, open capital markets
- FDI- new technologies
- Education
- Political coalitions (Marshal plan)
- Black and white cats both hunt mice… (China, HRS, etc.)
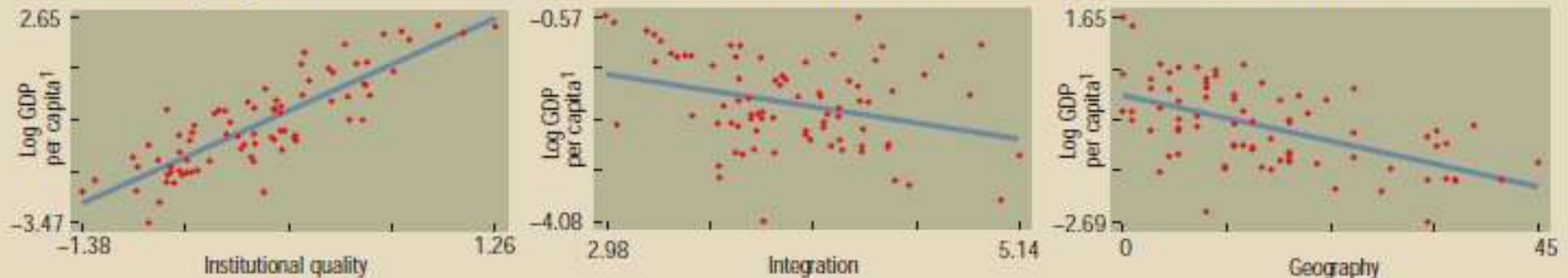
Rodrik and Subara

Chart 2

Institutional quality scores high

Institutional quality can boost income significantly, while global integration and geography, on their own, do not.

As institutional quality rises, so does income ...   **but increases in integration may not help**   **... nor does a more benign geographic location.**

Source: Authors

Note: The graphs capture the causal impact of each of the determinants on income, after controlling for the impact of the others. The indicators of integration and geography used are the ratio of trade to GDP and distance from the equator, respectively. For further details, see Rodrik, Subramanian, and Trebbi (2002).
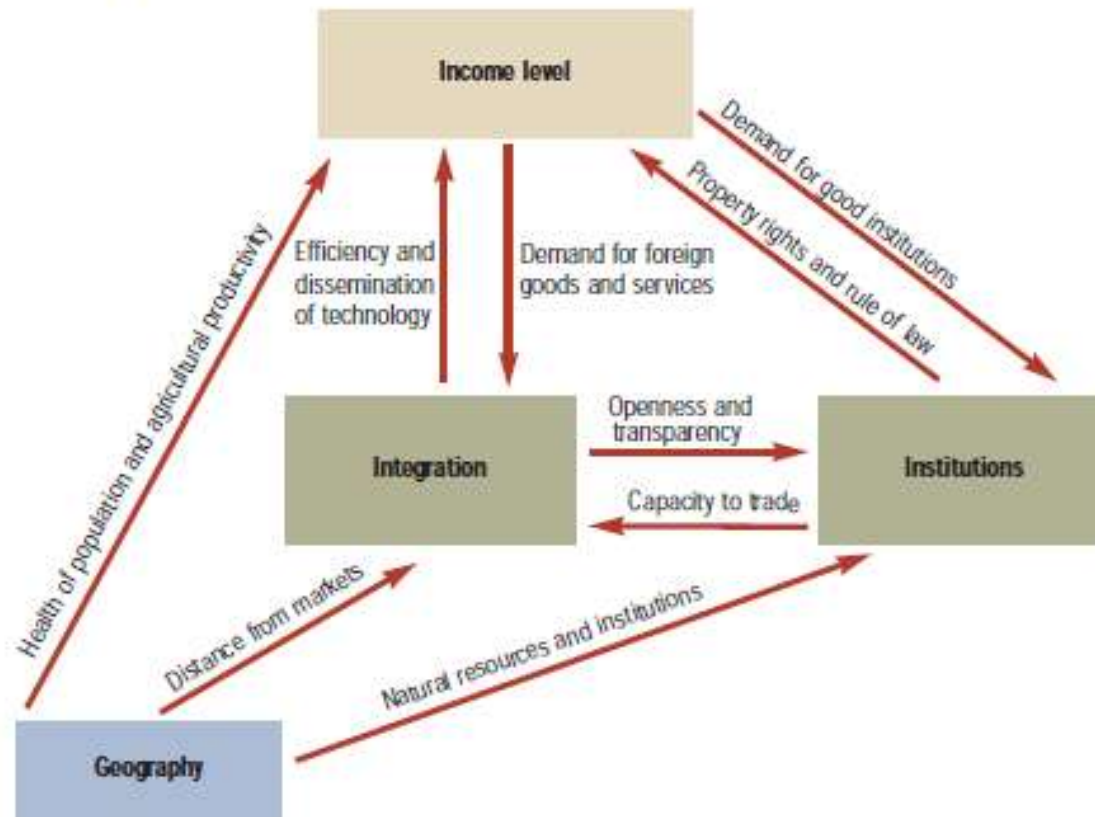
[1]Expressed in terms of purchasing power parity, 1995.

Rodrik and Subramanian (2003) F&D

Chart 1
The "deep determinants" of income

Development and its determinants are related in multiple and complex ways, making the task of determining and quantifying causality difficult.

Levers for growth in Africa

Showing promise

Some African countries show strong potential when compared with developing countries that have previously managed sustained growth.[1]

| | Measures of Broad Institutions | | Economic Outcomes | | | Potential Policy Levers | | | | | | |
| | Economic institutions | Political institutions | Growth | Export performance | | Key characteristics of recent sustained growth cases, with weak initial institutions | | | | | | |
	Investment risk[2]	Constraint on the executive[3]	Average past 10 years[4] (percent)	Exports to GDP[5]	Manufacturing exports to GDP[5]	Trade openness[6]	Currency over-valuation[7]	Inflation[8]	Primary education[9]	Secondary education[9]	Aid to GDP[5]	Costs of entry[10]
Burkina Faso	9.0	3.0	1.6	5.3	1.2	0.50	1.5	2.03	43.6	n.a.	11.9	3.3
Ethiopia	7.0	3.0	4.0	7.9	0.9	0.83	−19.0	17.78	63.9	19.0	16.6	4.3
Ghana	6.8	4.0	1.9	27.5	4.8	1.00	−17.0	26.7	81.4	37.7	9.4	1.0
Mali	7.5	5.0	1.7	26.0	0.16	1.00	8.6	−1.4	57.0	n.a.	11.8	2.3
Mozambique	8.5	4.0	5.7	9.9	0.68	1.00	−3.7	13.4	98.9	13.3	32.0	0.7
Senegal	8.0	6.0	1.3	21.2	6.3	0.00	13.2	0.0	75.3	18.7	7.7	1.2
Tanzania	7.5	3.0	1.3	9.3	1.4	1.00	130.2	3.5	69.9	n.a.	12.2	2.3
Uganda	9.0	3.0	4.1	7.6	0.6	1.00	25.6	7.8	136.4	n.a.	11.1	1.1
Average	7.9	3.9	2.7	14.3	2.0	0.79	17.4	8.7	78.3	22.2	14.1	2.0
Sub-Saharan Africa	7.5	3.7	1.4	26.0	5.6	0.48	12.6	12.9	90.9	38.8	11.1	1.4
Sustained growth countries (SGCs)	6.4	2.1	6.5	22.4	5.7	0.65	−13.5	9.1	96.0	34.3	5.1	0.2
Developing world	8.3	4.4	1.6	28.9	13.2	0.44	−6.1	8.3	99.0	60.4	7.0	0.7

Source: Compiled by authors.

[1]Data are for the most recent period available, except for the SGCs. For the SGCs, see note to each column.

[2]The risk rating, from the International Country Risk Guide Economic Rating, is the sum of three components (contract viability, payment delays, and profit repatriation) and varies from 0 (high risk) to 12 (low risk). For SGCs, data refer to the mid-1980s.

[3]The measure, which is an assessment of the operational independence of the chief executive of the country, varies from 0 (no constraint) to 7 (maximum constraint) and is from the Polity IV database. For SCGs, data refer to the start of the growth episode (T).

[4]For SGCs, values are averages over the period T to T+7 (World Bank's World Development Indicators).

[5]For SGCs, values are averages over the period T to T+5 (World Bank's World Development Indicators).

[6]The measure combines five criteria—tariffs, nontariff barriers, black market premium, state monopoly over exports, and socialist economic system—for determining openness. It is based on Sachs and Warner (1995) as updated by Romain Wacziarg and Karen Horn Welch. It varies from 0 (closed regime) to 1 (open regime). For SGCs, values are averages over the period T to T+5.

[7]The measure is the percentage overvaluation of the real exchange rate in 2000. Overvaluation is measured as the deviation of a country's actual exchange rate from a benchmark rate related to a country's per capita income measured in purchasing power parity terms. For SGCs, values are averages over the 10-year period from T−5 to T+5.

[8]For SGCs, data refer to the most recent period (IMF's International Financial Statistics).

[9]Measured as the gross enrollment ratio (World Bank's World Development Indicators). For SGCs, data refer to the year T.

[10]From World Bank Doing Business Database, and measured as the costs in U.S. dollars per capita of starting a business. For SGCs, data are for the most recent period.

Chart 1

No holding them back

Many of the countries that experienced sustained growth started with weak institutions.

CHL = Chile
CHN = China
DOM = Dominican Republic
EGY = Egypt
IDN = Indonesia

KOR = Korea
LSO = Lesotho
MYS = Malaysia
SGP = Singapore
THA = Thailand

TUN = Tunisia
TWN = Taiwan Province of China
VNM = Vietnam

Sources: World Bank, World Development Indicators database, and Polity IV.
Note: The following notation applies to all the charts: countries with weak initial institutions are represented by country codes in the case of sustained growers and by circles in the case of unsustained growers, and countries with strong initial institutions by triangles (see text for definitions). T refers to the start of the growth acceleration as identified in Hausmann, Pritchett, and Rodrik, (2004), or to 1970 for countries without accelerations. The growth rate is the average from T to the most recent period for which data are available.

Competitive RER

Chart 2

Getting the currency right

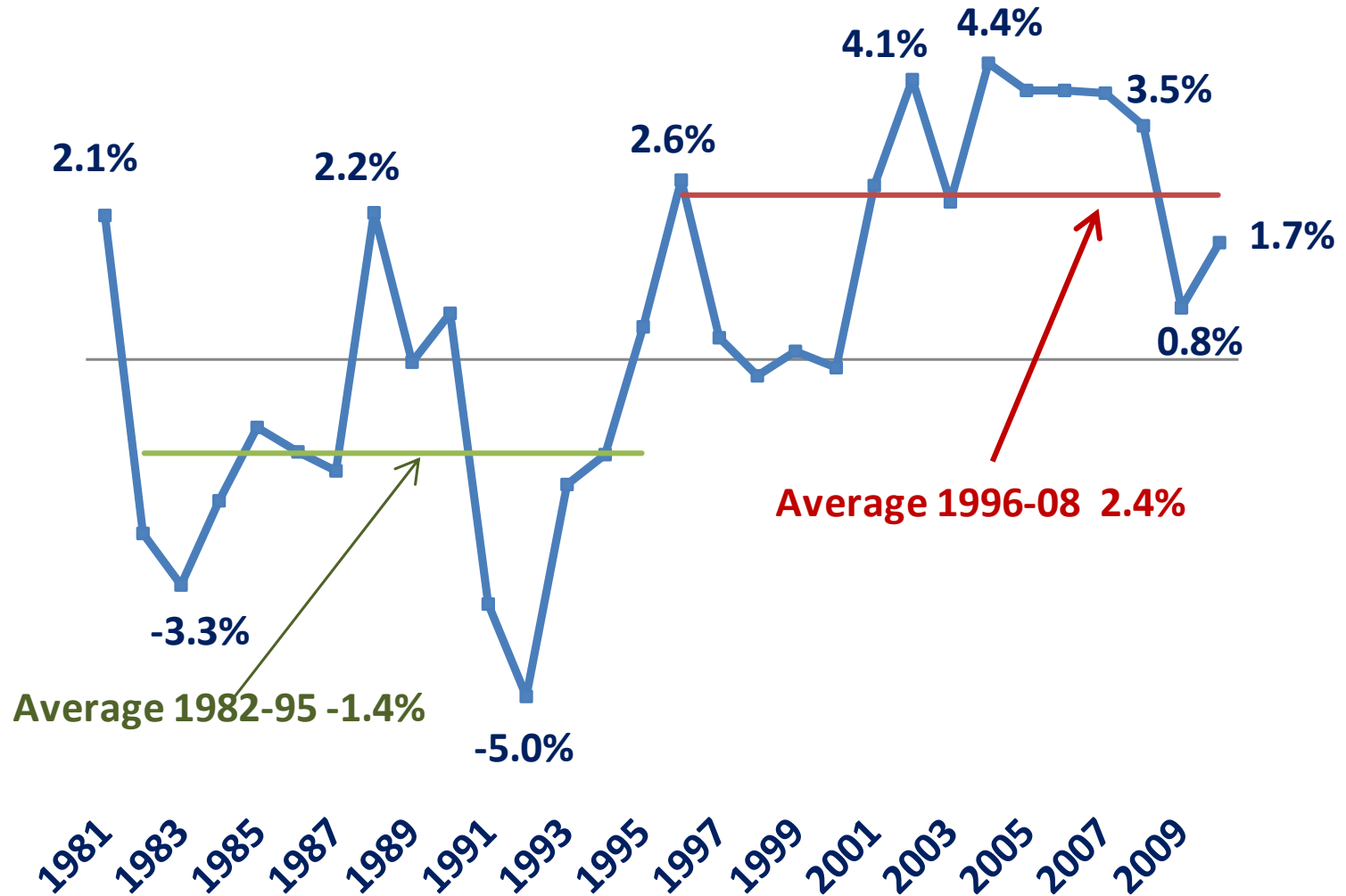The sustained growers avoided prolonged bouts of currency overvaluation.
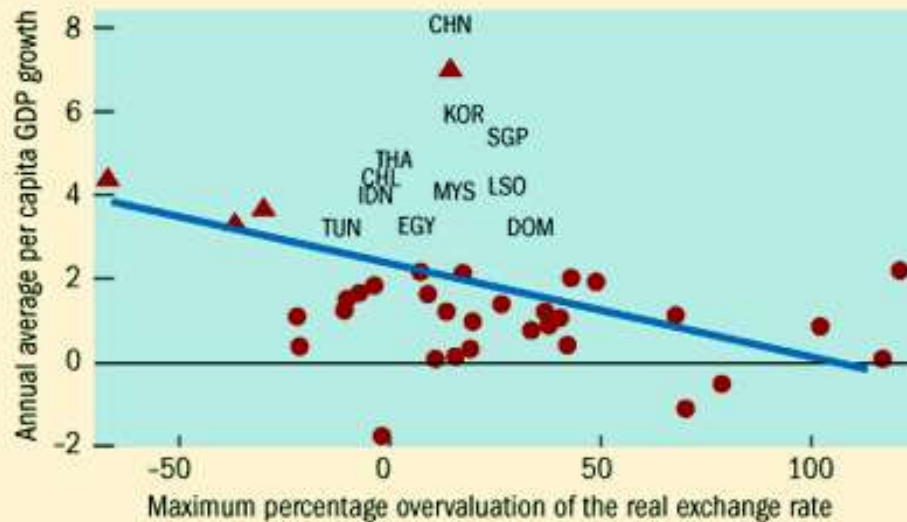
CHL = Chile
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EGY = Egypt

IDN = Indonesia
KOR = Korea
LSO = Lesotho
MYS = Malaysia

SGP = Singapore
THA = Thailand
TUN = Tunisia

Sources: World Bank, World Development Indicators database, and IMF staff estimates.
Note: Overvaluation is measured as the residual from a regression of the real exchange rate against per capita income, measured in terms of purchasing power parity.

Figure 1 SSA Per capita GDP Growth rate

2.1%

2.2%

4.1%

4.4%

3.5%

2.6%

1.7%

0.8%

-3.3%

Average 1996-08 2.4%

Average 1982-95 -1.4%

-5.0%

1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009

Source: IMF WEO April 2010 Database (population weight average GDP per capita) not including Liberia, Eriteria,

References

- *References:*
- *Acemoglu, Daron, and Simon Johnson, 2005, "Unbundling Institutions,"* Journal of Political Economy, *Vol. 113 (October), pp. 949–95.*
- *Berg, Andrew, Carlos Leite, Jonathan D. Ostry, and Jeromin Zettelmeyer, 2006, "What Makes Growth Sustained?" manuscript (January) (IMF).*
- *Hausmann, Ricardo, Lant Pritchett, and Dani Rodrik, 2004, "Growth Accelerations," NBER Working Paper 10566 (Cambridge, Massachusetts: National Bureau of Economic Research).*
- *International Monetary Fund, 2003,* World Economic Outlook, *September (Washington).*
- *Rodrik, Dani, Arvind Subramanian, and Francesco Trebbi, 2004, "Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development,"* Journal of Economic Growth, *Vol. 9 (June), pp. 131–65.*
- *Sachs, Jeffrey, and Andrew Warner, 1995, "Economic Reform and the Process of Global Integration,"* Brooking Papers on Economic Activity, *Vol. 1, pp. 1–118.*
- *World Bank, 1993,* The East Asian Miracle: Economic Growth and Public Policy *(Washington).*