



Economics

(a Non-Economist's views)

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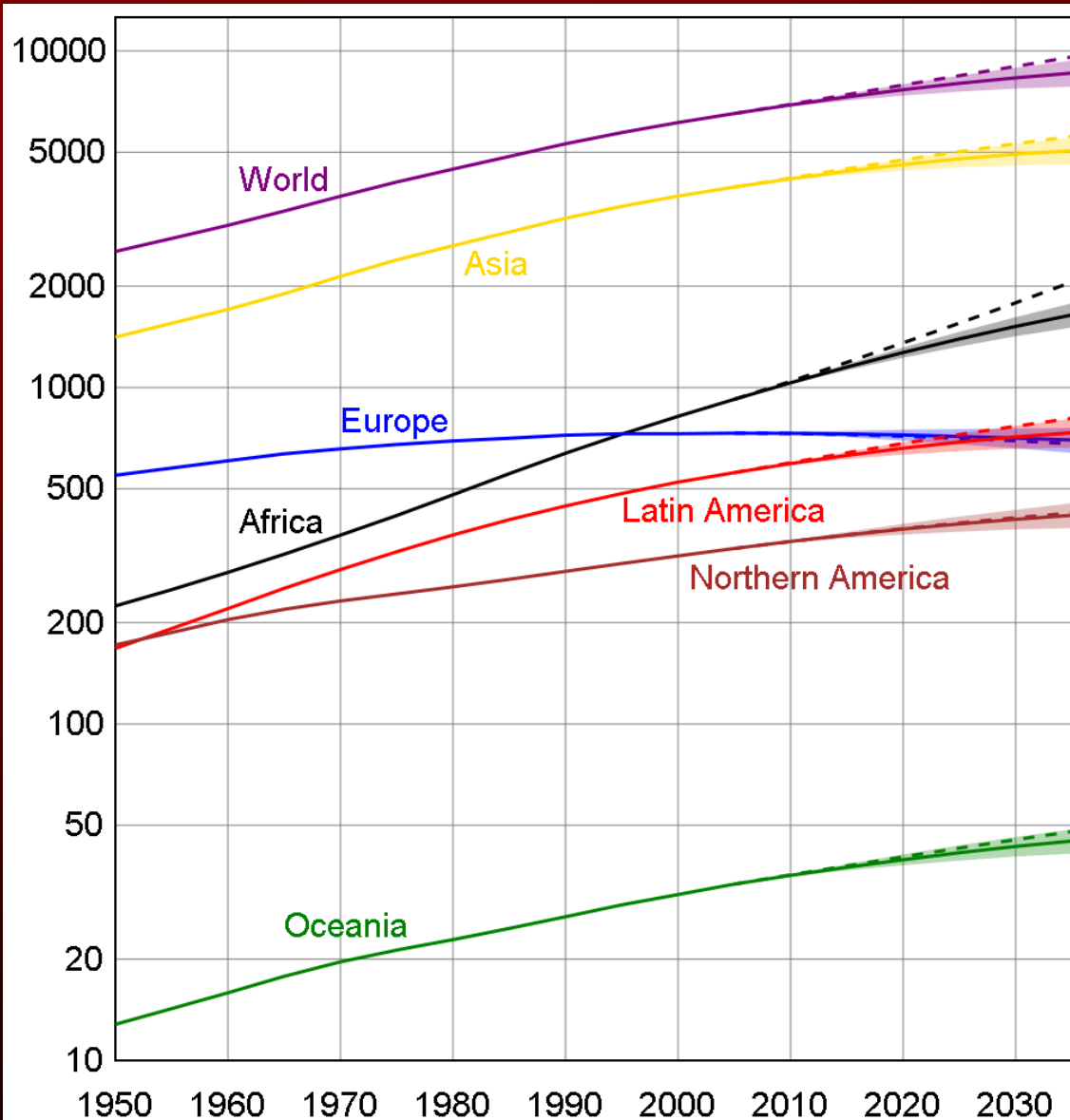
{Final Projects}

- Pick something YOU are interested in, and do a final paper on this
 - Meant to be your thinking, analysis, or even prototyping, not just a literature review
 - Can focus on technical, policy, social, or any issue of technology for developing regions
 - Use a tool, methodology, or framework for your study (as applicable)

A Stylized Skim through Economics

- Things to look out for
 - Learn the jargon
- Formal frameworks
 - Microeconomics, macroeconomics, finance, etc.
- Techno-economic (project) valuation

Global Population



Population 2007-09-19

1. China	1,323,607,597
2. India	1,133,843,283
3. USA	301,730,016
4. Indonesia	235,317,962
5. Brazil	190,430,440
World	6,619,111,398

Sources: UN Data; GeoHive

Economics – Global

Statistics

- GDP (PPP) US\$65.95 trillion (2006 est.)
- GDP (Currency) \$46.76 trillion (2006 est.)
- GDP/capita (PPP) \$10,200 (2006 est.)
- GDP/capita (Currency) \$7,178 (2006 est.)
- Annual growth 4.0% (tty*); 2.1% (1950-2003)
per capita GDP (PPP) [tty – trailing 10 years till
2002]

Distribution (2004 Est.)

GDP:	Agriculture:	4%	Labor	40.7%
	Industry:	32%		20.5%
	Services:	64%		38.8%



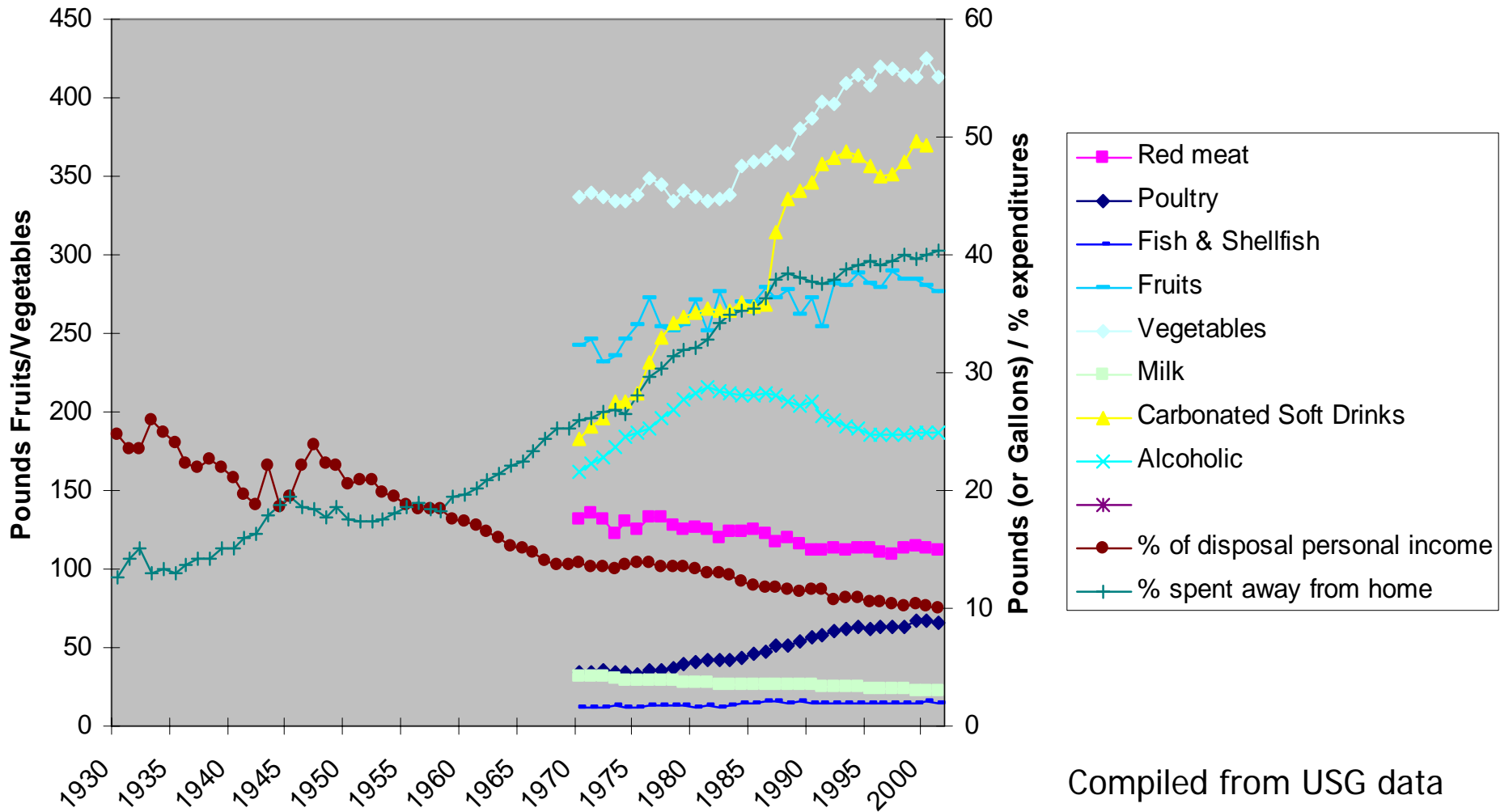
Relative value of money

- Market exchange rate
 - What you buy and sell currency at
- Purchasing Power Parity (PPP)
 - Factors in differences in cost of living for a “basket of goods”
 - The \$1/day for absolute poverty is using a PPP number!
- What’s the Big Mac Index?

Economics is about tradeoffs – Consider Food

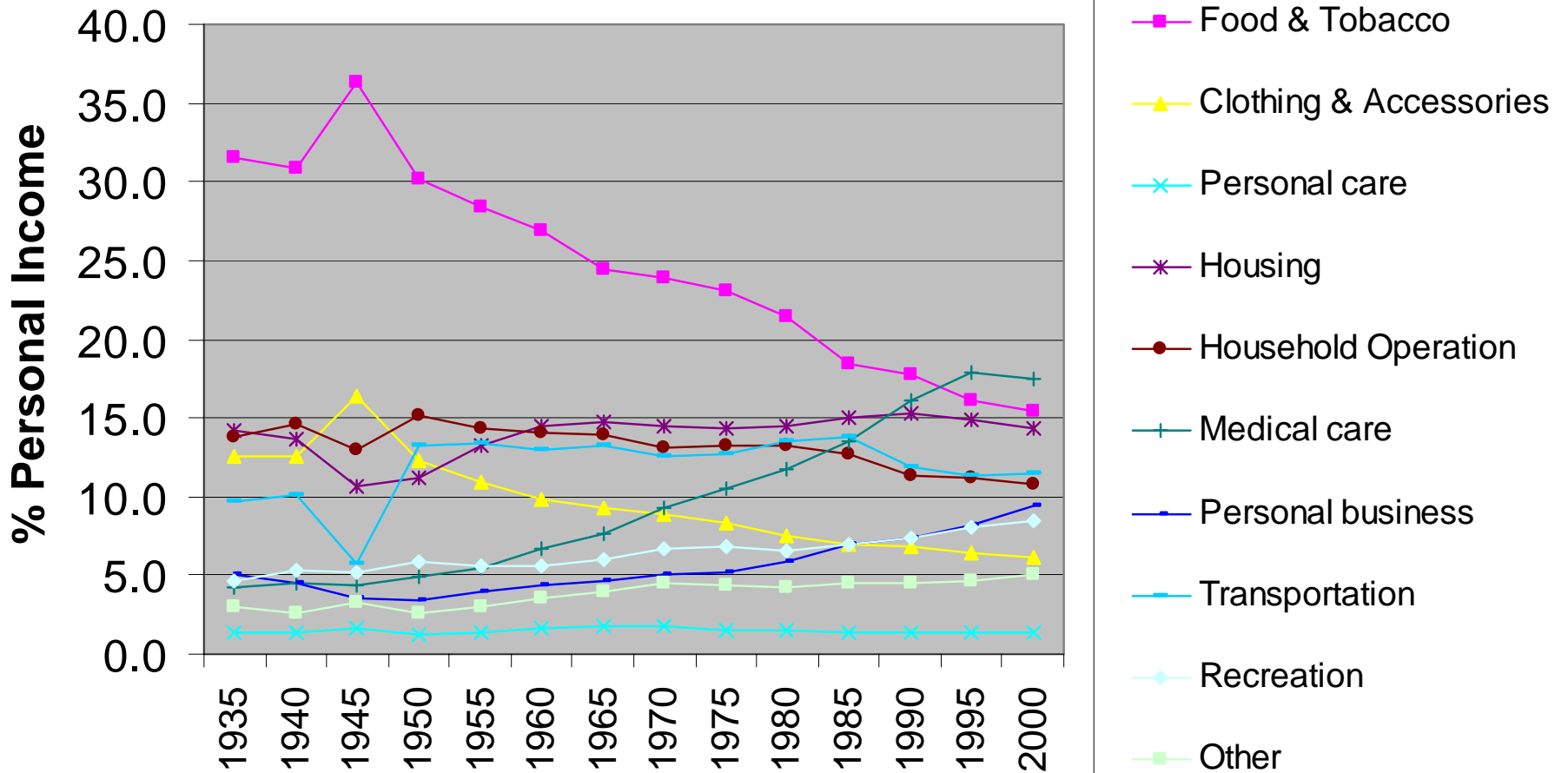
- Diets in the US have changed – for the worse
- But we're spending less money for the food
- In other countries, calories might be available but not nutrients
- UN states there are more overweight than underweight people now
 - Poverty in the US is associated with obesity, not under-nutrition

US Food Changes



Compiled from USG data

US Personal Expenditures



Compiled from USG data

Economics and Development

- People just need more money (?)
 - Need to remember inflation – can't “print money”
 - Real money is “deflated” to match inflation (compared to nominal)

- Need to spend money better (?)
 - Not limitless
 - How to optimize and prioritize
 - Utilitarian
 - Greatest good for greatest numbers
 - Libertarian
 - No Interventions – do as you wish as long as it doesn't hurt others
 - Egalitarian
 - Equality

 - What are markets?

New Models of Developing Countries

- Economist Robert Wade talks of a 1:3:2 world
 - 1st group – Developed
 - 2nd group – Developing
 - 3rd group – Failing to develop

2nd group has higher growth rate than 1st; 3rd has lower
- Political Scientist Atul Kohli characterizes countries as
 - “Neopatrimonial state,”
 - Ruler treats state resources as his own
 - Cohesive-capitalist state (E. Asia)
 - Fragmented-multiclass state
 - (In-between (parts of L. America))

Role of the State

- Much of the world had (and has) State Owned Enterprises (SOEs)
 - Some activities are not even companies, but Govt. Departments (e.g., Dept. of Telecom)
- Markets (and the belief they are better) are growing
 - Privatization
 - Not the same as competition!
 - Type I and Type II (selling off to highest bidder or letting new entrants emerge)

What's the Role of Government In a Market World?

- **NOT AS**
 - Producer (left to private enterprise)
 - Allocator / controller (“command and control”)
- **Consumer**
 - Worked in Andhra Pradesh, India, for Fiber to the Village
- **Regulator**
 - Create level playing field
 - Set up transparent rules of the game
 - Standards
 - Is a regulator required in a “free market”?

Role of Innovation

- Source of much of economic growth
 - Services in the economy
 - Source of more of the JOBS
 - Small companies matter

US 2003 figures (Census Bureau)

Size of Firm	Fraction of total US employees
1-19	25.0%
20-99	29.8%
100-499	25.2%
500-999	6.7%
1000+	13.3%

- It's also the growth of jobs that's higher for small firms



Economics and Analysis

- **Macroeconomics**
 - Money supply, interest rates, inflation, exchange rates, deficits, etc.
- **Microeconomics**
 - Supply and Demand, market clearing prices
- **Development Economics**
 - Transfers, comparative advantage
- **Financial Economics**
 - Returns
- *Etc.*

“Utils” – Measure of Utility

- Artificial measure of tradeoffs amongst producers and consumers
 - Money is used as for intermediation (“common currency”)
- Challenges
 - Rationality
 - Time periods (discounting)
 - Risk tolerance

Wealth, Development and “Happiness”

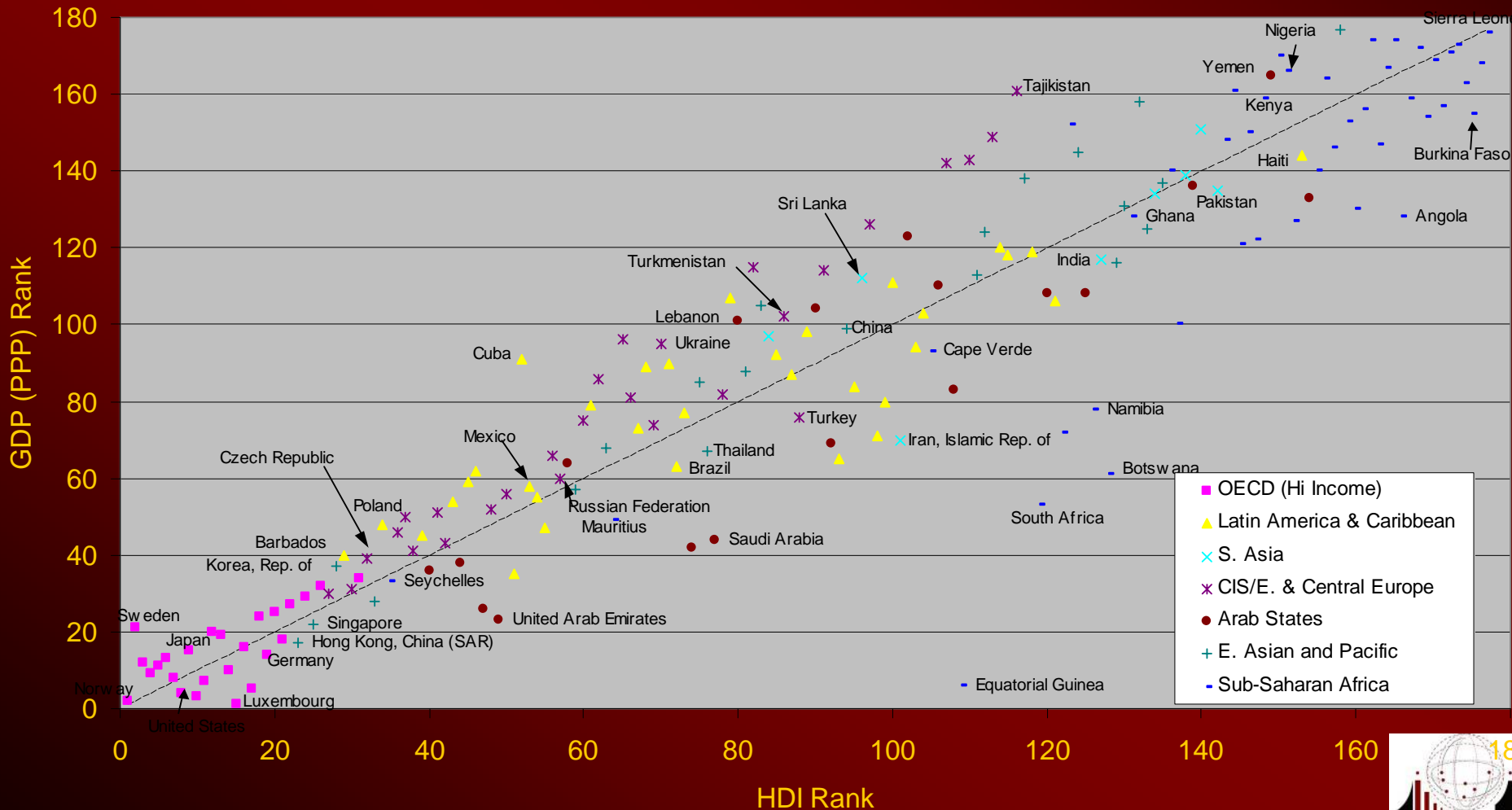
- (Reportedly) Wealth doesn't relate to happiness *AFTER* a minimum level of wealth
- Subjective measures
 - Is “happiness” relative?
 - Locally, “in-peer,” or globally?

Money and Value

- (Discuss) - Larry Summer's statement on shipping wastes to developing countries
- Thought experiment: smoking in the US
 - Viscusi has calculated that smoking leads to a net positive financial gain for states
 - Litigation Settlement
 - Excise taxes
 - Earlier death reduction of pension obligations
- Are traditional economic measures accurate or sufficient?

Human vs. Economic Development

* Rank means lower number is better



Created from HDR 2004 Report Data



Economic Theories of Development

- Capital Fundamentalism
 - Need to invest (savings rate) for growth
 - If domestic funds are lacking, aid is the solution
- Solow (1957) studied all the inputs (labor, capital, etc.) and outputs and found there was unexplained growth
 - This residual was due to TECHNOLOGY

Growth Models

- Entire global system is predicated on growth
 - Real growth, ideally per capita
 - Demands increased productivity
 - Are there limits?
 - Malthusian view (population growth is exponential)
 - Innovation view (e.g., Julian Simon) – Materials substitution
- Developing countries often have centralized planning
 - 5 year plans
 - Socialistic history
- Subsidies, cross-subsidies and interventions are not merely socialist
 - Real estate insurance pricing in Florida – regulated to make it artificially affordable (think hurricanes)

Growth and Sustainability

- Environmental sustainability is already in question
- Economic Sustainability
 - BOTH sides are key
 - Supplier
 - Consumer
 - Diminishing returns often seen after some point
 - Continued growth requirements – more resources and more transfers
 - Aid based economics is problematic

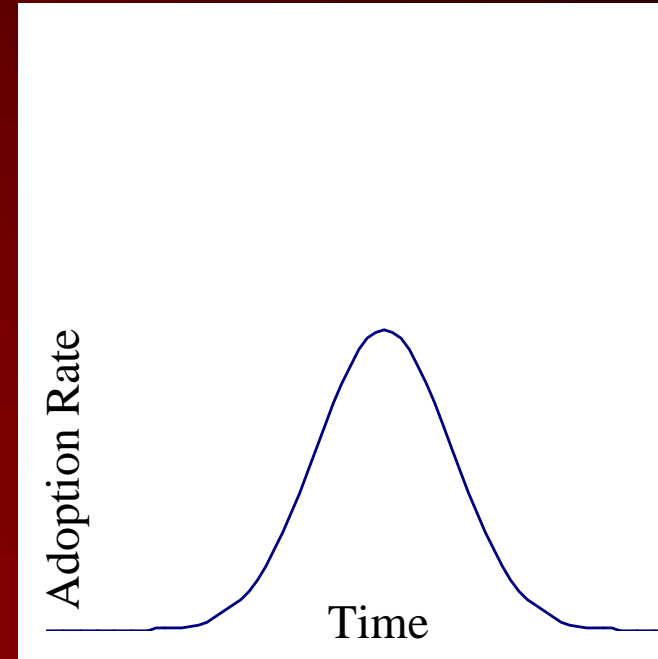
Technology and Productivity

- o Role within economy
 - Increasing share of services (~2/3)
- o Adoption of new technologies
 - Bell Curve
- o Schumpeterian destruction?
 - Disruptive technologies
- o New business models and market structures

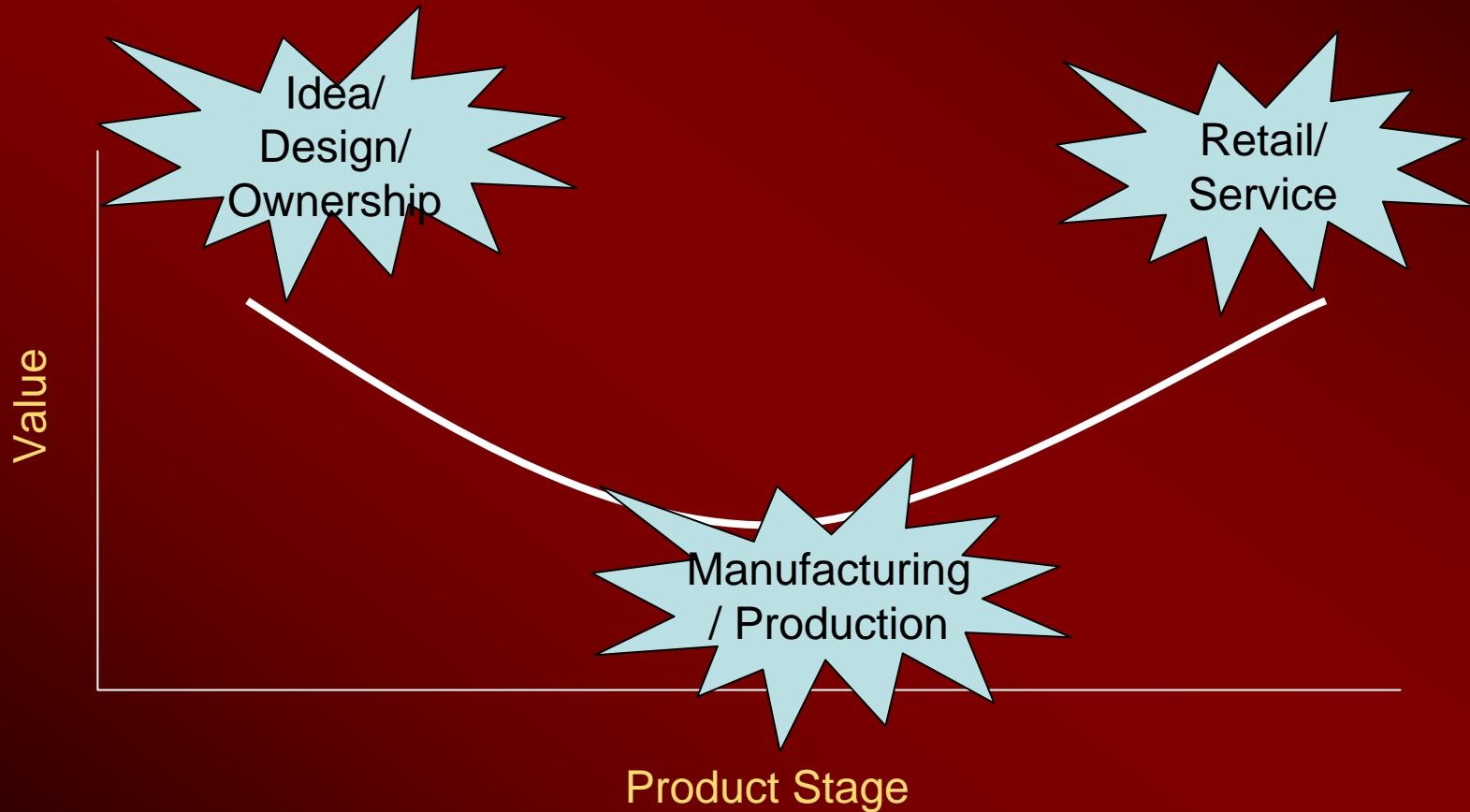
- Where is the market power?

- Fundamental Technologies
- New market creation
- Manufacturing
- Implementation
- Retailing
- Servicing

• *Issues of barriers to entry, commoditization, etc.*



“Smiley-Faced Curve” of Value



(A generalization if not simplification)