CREATING A LEARNING SOCIETY

A New Approach to Growth, Development, and Social Progress.

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Two themes

• Successful and *sustained* growth requires creating a learning society.
  – Especially in the 21st century, as we move to a knowledge economy.

• Markets on their own will not do this
  • There needs to be systematic interventions by the government
On the importance of Creating a Learning Society

• The transformation to “learning societies” that occurred around 1800 for Western economies, and more recently for those in Asia, appears to have had a far, far greater impact on human well-being than improvements in allocative efficiency or resource accumulation.
  • For hundreds of years standards of living had remained essentially unchanged
• Since Solow, we have recognized that the most important determinant of growth is technological change
  – Recognized earlier by Schumpeter, but Solow gave us first quantification
  – Our focus should be on the impact of policies on technological change, learning
Gaps in knowledge

- In case of developing countries, focus on diffusion of knowledge
  - From developed to developing country
  - What separates developing from developed countries is as much a gap in knowledge as a gap in resources

- But even in developed countries, large gaps between productivity of best and other firms
  - Undermines concept of an aggregate production function
Market failure

- Markets, on their own, are not efficient in promoting innovation.
  - Since Arrow, recognized that markets by themselves do not yield efficiency in the production and dissemination of knowledge
    - Knowledge as a public good
    - Spillovers/externalities
    - Other imperfections (capital markets, imperfect competition) inherently associated with innovation
  - Changed presumption from Smith’s invisible hand
    - Production of knowledge/learning different from production of conventional commodities
    - Results consistent with Greenwald-Stiglitz theorem
      - Whenever information is imperfect/asymmetric, risk markets imperfect markets are not (constrained Pareto) efficient
      - Information is similar to knowledge, so result not surprise
Government policy

- The policies that promote a transformation to a learning society are markedly different than those traditionally advocated by economists, which focus on improving the static efficiency of resource allocation and the accumulation of capital.

- Including policies that constituted the Washington Consensus.

- Indeed, from the perspective of creating a learning society, those policies may be counterproductive.
Long recognized conflict between static and dynamic perspectives

- Intellectual property restricts use of knowledge (a distortion—knowledge is a public good), and can even contribute to monopoly.
- Willing to accept because dynamic benefits outweigh static costs
  - May be negative dynamic benefits (US)
- Important to have a “developmentally oriented” intellectual property regime
  - With poorly designed IP regime, dynamic benefits less than the costs
  - TRIPS (regime of WTO) is NOT developmentally oriented
  - But important for countries to make full use of latitude given by TRIPS
Implies that a central question of growth and development should be:

- What should governments do to promote growth through learning (technological progress)?
  - Question is especially salient because such policies may be in conflict with conventionally advocated policies

- Book looks comprehensively at factors affecting learning
  - Education system
  - The economy’s innovation system, including IPR and technology policy
  - Macro-economic policies, including exchange rate policy
  - Industrial and trade policies
  - Investment policies
Multiple dimensions

• How they affect capabilities of learning
• How they affect incentives to learn (motivate learning)
• How they facilitate learning and catalyze it
  • Including mindsets that are conducive to learning
    • Importance of the Enlightenment
• How they impose impediments to learning
• How does learning occur
  • Especial attention to learning by doing
• Learning to learn

• This lecture will focus on role of education system and trade and industrial policies
Based on
I. Education

- Needs to focus on “learning to learn”—life long learning
- Only small part of learning occurs in “formal” schooling
- Have to understand role of formal schooling vs. “life long learning”
  - Relationship changing with increasing pace of innovation, changes in labor market
  - Relationship changing with ability to access “knowledge” on internet
    - Need to know how to access, evaluate, and analyze knowledge base which is readily available
- Changes in technology are allowing changes in learning
Changes in education on the job

• Less provision of education by employers
  • With greater labor mobility
• Greater uncertainty about nature of future jobs

• Implying greater need for individuals to have access to relevant continuing education
Learning perspective has changed thinking about education in developing countries

- Importance not just of primary education but secondary and tertiary
- Learning skills that enable individuals to learn in the contexts in which they live
  - With many continuing to live in rural sector, a rural-based education—not just qualifying individuals for urban jobs

Among central messages of WDR *Knowledge for Development*
II. New perspectives on trade

• Standard theories
  – Focus on comparative advantage
  – One-time gain from liberalization, opening up markets

• Technology-based learning theories
  – Focus on diffusion of technology from developed to less developed countries
  – And spillovers from one sector to other
  – And learning within any sector
    • Within all countries, there are large differences between average and best practices
    – Suggesting large scope for “learning”
  – Localized learning—localized to technologies
    – Similar technologies can be used across sectors
Dynamic comparative advantage—comparative advantage is endogenous

- With learning by doing affected by what a country produces

- Central then is understanding the structure of learning within an economy—including within and across sectors
  - Many processes, practices, and institutions entail cross-sector learning/increases in productivity
    - Inventory control processes
    - Labor management processes
    - Computerization
    - Financial services
Infant industry argument

- Infant industries—economies of scale

  - Losses during “learning phase” serve as entry barriers, putting developing countries at disadvantage
• In fact, learning by doing itself provides little basis of industrial policy

  – Consider a two-country, two-product Ricardian world with Cobb-Douglas utility functions, with one product with learning and the other stagnant (learning internalized in country)

  – Consider equilibrium in which “developed” country specializes in dynamic sector

  – With competition, full benefits of learning are shared with developing country through price declines
Infant *economy* argument for protection

- The industrial sector (broadly understood, including modern services) may not only exhibit a larger learning elasticity, but also more spillovers to the rural/agricultural sector
- Markets fail to take into account of these externalities on their own
- Korea provides an example of effective use of such policies
Other market failures endemic to “learning”

• Two cases:
  • Learning external to the firm
    • Failure to take into account learning benefits to industry as well as spillovers
  • Learning limited to the firm
    • Natural monopoly
    • If there were no cross-sectoral spillovers, rational firm would take into account all learning benefits
    • But distortion from monopoly power

• In both cases, in general, market equilibrium not efficient
*Advantages of industrial sector*

- Large—high returns to scale
- Long-lived—high returns from continuity (learning to learn)
- Stable—high returns from completion
- Concentrated—high rates of diffusion
*Strong industrial sector is basis for:*

- More research—
  - More resources and incentives for research and development
  - More internalization
  - Greater ability to support public research and development
  - More human capital formation, including public support for human capital accumulation

- The development of a robust financial sector

- Learning to learn and cross-border knowledge flows

**Implication:** Rate of productivity increase related to (relative) size of industrial sector.
Policies

• Optimal to impose some subsidies, even if taxes to finance subsidies are distortionary

• Optimal subsidies lead to expansion of those sectors that have larger societal learning benefits, taking into account both direct learning and cross sectoral spillovers.
  – If the learning elasticity of some sector is much larger than that of others, and there is some sector that is a substitute for the high-learning sector, then it may pay to tax that sector, in order to encourage learning in the high-learning sector

  – Book provides precise formulae (analogous to Ramsey formulae) for optimal subsidies and taxes
Trade protection is an alternative

- Especially relevant where government cannot raise revenues through taxation to finance subsidies
- Quotas, tariffs can encourage industrial sector
Industrial policy in the presence of WTO constraints

• Exchange rate policy may be an effective alternative
  – Lowering exchange rate below “equilibrium” (trade balance) leads to larger industrial sector and faster learning and trade surplus
  – Avoids the problem of “picking winners”
  – Avoids the problems posed by WTO restrictions

• Even pays to have a *perpetual* current account surplus
  – Surprising — “capital” that one never uses
  – But learning benefit exceeds the opportunity cost of funds
• But even if it were not desirable to do it *forever*, it may be an important element of development strategy
  – Problem with using steady-state models
Extensions

- Trade policy can affect factor prices, and therefore the level of investment, and therefore the level of learning
  - More than offsetting the social costs of distortion
Learning to learn

- We have focused on “learning,” but even more important is “learning to learn”
  - Industrial and trade policy can enhance an economy’s learning capacities
- Introduces complex strategic questions
Political economy objection

• Ideal government intervention might improve matters
  – But real world interventions do not

• Political economy objections may be true—but conclusion based on political analysis, not economic analysis
  – Political analysis often more simplistic than economic analysis
  – Moreover, liberalization is also a political agenda
    – Not “perfectly applied”
    – Asymmetric application can have adverse welfare effects
Political economy objections

− Critique of infant economy argument in particular
  − Government can’t pick winners
  − Infants never grow up
  − Better ways of providing assistance than protection—direct and transparent subsidies

• Replies to critiques
  • Almost every successful country has had “industrial policies”
    • US from 19th century (telecommunications, agriculture)
      • Today mostly through Defense Department
      • Including Internet and biotech
        • With private sector playing central role in bringing innovation to market
      • Successful countries learned how to manage “political economy” problems
• Point of industrial policies is not to pick winners, but to identify externalities and other market failures
  • With imperfect capital markets, can’t borrow to finance initial losses
  • Imperfections of capital markets are endemic (asymmetries of information)
    • Especially in developing countries
• Besides, we don’t reject “monetary policy” simply because there have been failures
Design of industrial policy has to reflect capacities and capabilities of government

Broad-based export subsidies (as in East Asia) may be a desirable way of promoting industrial sector (including through exchange rate policies)
III. Other implications of new theory

- Theory of the firm
  - Not based on transactions costs (Coase)
  - Knowledge moves more freely within firms than across firm boundaries
  - Resource allocations within firm are typically not based on prices, or even contracts
  - Trade-off between “learning” and “allocative efficiency”
IV. General lessons

• Another example of 2\textsuperscript{nd} best economics

• But whenever one talks about innovation, one is in the world of 2\textsuperscript{nd}-best economics
  – Credit/revenue constraints are also likely to be particularly important
  – Imperfect competition/increasing returns to scale
  – Risk, with imperfect risk markets
  – All elements of standard Schumpeterian economics
  – Should be at the center of endogenous growth theory and growth policy
General lessons

• Policies often based on simplistic models
  – Simplistic models consistent with simplistic ideologies
  – And used by special interests to advance particular policy agenda
  – Trade and capital market liberalization can make everyone worse off (Pareto inferior trade and liberalization) if there are imperfect risk markets (Newbery-Stiglitz, 1982)
V. Growth, learning and innovation: To what end?

- Much of innovation in advanced industrial economies has been directed towards saving labor
  - But in many developing countries, labor is in surplus, and unemployment is the problem
  - Labor saving innovations exacerbate this key social problem
• It is natural resources/the environment which is “underpriced”
  – And innovation needs to be directed at saving resources and protecting the environment
  – Cannot just “borrow”/adapt technology from the North
  – Need a new “model” of innovation
• These environmental impacts are important for all countries, but especially for developing countries

• What matters is not GDP, but the quality of life, “well-being” and individual capabilities
  – What that entails—and how it can be increased—should and can be a subject of rational inquiry
  – Has been an area in which Sen has made major contributions
  – Subject of Sen-Fitoussi-Stiglitz International Commission on the Measurement of Economic Performance and Social Progress
V. Social transformation and the creation of a learning society

• Perceptions (beliefs) affect actions (choices) and are shaped by cognitive frames.

• The categories that shape cognition are social constructions.

• Because belief systems affect the equilibrium, e.g. by shaping perceptions, elites have a strong incentive to influence people’s beliefs.
  – In contrast, in a RE equilibrium cognitive frames play no role.
• **Those in “power” typically do not control all the determinants of the evolution of beliefs**
  – Cultures are always contested.

• **The general beliefs about the world are a state variable that determine which beliefs are acceptable.**

• How such belief systems change—and how those (like governments) who seek to deliberately change belief systems—is thus a core part of developmental analysis

VI. Democracy and the creation of a learning society

- Ideas concerning human rights and democracy have been among the most important in shaping what is and is not acceptable.

- Democratic ideals question authority.

- Same frame of mind which is so essential for creating a dynamic, learning economy and society.

- A more open society generates more ideas, a flow of “mutations,” which provides not only excitement, but the possibility of dynamic evolution, rather than stasis.
Non-inclusive growth can lead to a failure to create a learning society

- Unfortunately, even if in the long run, a more dynamic society benefits most members of society, in the short run, there can be (and normally will be) losers
  - Trickle-down economics doesn’t work
  - WC policies were often anti-poor (worse than failure to be pro-poor)

- Democratic processes can be shaped, and there are incentives on the part of some to maintain existing inequities

- Democratic processes can then lead to the antithesis of an open and transparent society
The political economy of inclusiveness and openness

• Critique of non-inclusive growth goes beyond that it is a waste of a country’s most valuable resource—its human talent—to fail to ensure that everyone lives up to his or her abilities

• Government needs to play an important role in any economy, correcting pervasive market failures, but especially in the “creative economy”

• In a society with very little inequality, the only role of the state is to provide collective goods and correct market failures

• When there are large inequalities, interests differ
  – Distributive battles inevitably rage
  – To prevent redistribution, role of government is circumscribed
  – But in circumscribing government, ability to perform positive roles is also circumscribed
Adverse dynamic

• More inequality—more circumscribed government

• Leading to more inequality

• In the long run—more unstable, lower growth

• Some fear that US has now embarked on this adverse dynamic
  – Less equality of opportunity, more inequality, than some countries of “old Europe”
VII. General principles of a learning society have broad implications

For entire economic regime:
- Financial and capital market liberalization
  - Affects ability to learn how to allocate capital
- The design of monetary policy and institutions
- Intellectual property regimes
- Investment treaties,
- Taxation, and expenditures on infrastructure, education, and technology
- Legal frameworks for corporate governance and bankruptcy
Objective of this lecture

• A new lens through which one can examine these and other policy choices facing developing countries in the coming years

• Countries might like to pretend that it could avoid matters of industrial policy—following the neoliberal doctrines that these are matters to be left to the market

• But they cannot

• The choices they make in each of these arenas will inevitably shape the economy, politics and society, for better or for worse, for decades to come.