

# EE 462 Development Macroeconomics (1 / 2012)

## Lecture 8 Industrialization Policy

Read Ray chapter 5, 17

Murphy et al. “Income Distribution, Market Size, and Industrialization, QJE 89.

Murphy et al. “Industrialization, and the Big Push,” JPE 89.

# Discussion topics

- Ideas of the Big Push, coordination failure from Murphy et al.
- History and expectation
- History and development

# Big Push

- Why do poor countries still poor or remain unindustrialized? What is the economics of underdevelopment? What can we do about it?
- Can government intervention accelerate the process?
- Old idea for industrialization constraints: small domestic market size and costly trade, firms do not adopt new technology.
- New idea: some industrial sector can generate strong spillover that give rise to the possible coordination of investment across sectors or give a big push..
- Similar to idea of Rosenstein-Rodan, big push, coordinated investments across sectors

- In Rosentein-Rodan (1943): to bring farm labor to factory, a firm pays wage premium. To do so, need to have enough sales to cover cost. If sales is too low for it to break even, investment does not occur. In contrast, if other firms producing different products all invest and expand production together, they can all sell to each other's workers and able to pay wage premium, and still break even.
- Coordination failure means the possibility that a country gets stuck in low-level equilibrium or development trap, where there is another good one.
- Independent action by firms alone are not enough.
- Why coordination failure occurs then. What does it take for multiple equilibria to exist?

- Murphy et al. (MSV) on “Industrialization and the big Push” proposes pecuniary externalities through aggregate demand spillovers, and leads to a take-off.
- Demand spillover means a shift in demand for goods in other sectors, thus creating money benefits to other sectors
- Before, no sector can cover fixed cost by doing alone.
- Big push does not require changes in factor endowments, technical change or preferences.
- A coordinated investment program can achieve industrialization of each sector at a lower cost than a country that industrializes piecemeal

- How IRTS can generate multiple equilibria? when IRTS affects the market size
- Suppose there are fixed costs to enter the market. Average cost declines as volumes increase.
- If IRTS cannot be used because of small market size, production is not efficient and income payment will be lower.
- The vicious circle starts: a poor country, and this causes a low demand for final products, a low demand for intermediates, price is high, more labor, low technology, low income, ....
- What if we have Small Open economy? We have no market size constraints in a free trade, thus there is no coordination failures.

- Assume IRTS, firms are monopolistic competition
- MSV proposes 3 mechanisms:
- 1. Changes in demand composition between sectors toward manufacturing (model with a factory wage premium): in this model, there are 2 equilibria: one with and one without industrialization. The idea is investment by one firm increases the size of the market for producers of other manufactures, even if its investment loses money. Or we can think of urbanization (demand more of manufactures) increases consumption of other manufactures.

- 2. Changes in demand composition over time  
(Dynamic model of investment): an investment that loses money nonetheless raises aggregate income in the second period. A firm that uses resources to invest at one point in time, but generates the labor saving at a later, decrease aggregate demand today and raises it tomorrow, thereby make investment for other firms which sell only in the second period more attractive.
- The idea is that the result of investment is to shift the composition of demand across periods in a way that makes the investments by other firms more attractive.
- There is a role for government in encouraging agents to invest or discouraging current consumption

- Thus, simultaneous investment by many firms can become profitable even when each loses money investing in isolation. The economy makes the big push to a better equilibrium.
- Similar to ideas about a self-fulfilling expectations of growth (no need to assume that investors are not rational: each makes optimistic projections or bullish investment)
- Vision of ASEAN Economic Communities: policies coordinate investment across countries
- Note that both models require market sizes and aggregate demand spillovers. Complementarities between industrializing sectors work through market size effects.

- 3. Investment in shared inputs or infrastructure (model of investment in infrastructure)
- Building a railroad often depends on the demand from potential users.
- In turn, these users can access much larger markets if they can cheaply transport their goods.
- When many sectors share costs of railroad, the railroad brings down all production costs of the other sectors. Normally, railroad might not get built. why:? How about training facilities (cannot stop stealing)
- Possible government intervention in creating infrastructure, because it serves many sectors, need large capital, and firms have no advantage over government.
- Welfare is higher in a new industrialized equilibrium in all models.

- Another paper by Murphy et al. on “Income Distribution, market size, and industrialization,: shows that an increase in agricultural productivity and export boom that raise income, increases in demand for manufactures, can lead to industrialization.
- Also, income generated by the industrial sector must be broadly distributed so that it creates large markets for domestic manufactures.
- As domestic markets become larger, increasing returns production technologies that could not break even in smaller market come into profitable use and industry expands.
- Great increase in agricultural productivity in Japan or Taiwan increase rural purchasing power, thus fostering industrialization.

- Boom of agriculture or exports is not sufficient to bring about any industrialization.
- Need to create more demand for manufactures
- Key is the distribution of income : An middle income class is the major source of the buying power for manufactures. In other words, income distribution is the determinant of market size
- Effects of income distribution on the extent of industrialization: in a poor country, poor income distribution or extreme inequality could be responsible for the lack of industrialization. Too few demand to cover the fixed costs. This suggests that a more populous country is easier to industrialize.

# History vs. Expectation

- In the previous argument, we assume that somehow history pins down the low equilibrium one, and makes it difficult for firms, individuals to coordinate to free from the trap.
- We allow that expectations could change the equilibrium. What prevents expectations from changing?
- Why can't we change expectations over night about technology or investment?

- For example, let the new equilibrium requires all labors to have skill and work for the IT. Everyone knows this.
- What's wrong with the new expectations?
- Everybody wants everybody else to go first. Going first means taking economic losses.
- The delay problem tells us why it is easier to generate a new fashion to pull an economy out of a coordination failure.
- Time lag, wage adjustment, free rider? (let others move first, the one who moves first loss)=> nothing changes.

# History and Development

- Historical development can influence future outcomes or development paths.
- First, social norms may or may not hinder productive change. Adhering to the norm is often like the bad equilibrium. The externality is created by the fact that as more individuals depart from the norm, it becomes easier for other individuals to depart from the norm as well. How about sufficient farming norm? Private tutoring?
- Second, history establishes a status quo. And the status quo can block many routes to development. This can determine whether a new policy can be undertaken. We assume that new policies have winners and losers, and that losers may not be enough compensated.. For example, if the government introduces a new dam. Nearly villagers have to be resettled. Lobbying by both sides occur.