

# **CLUSTER-BASED INDUSTRIAL DEVELOPMENT**

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# Pakistan at a Glance

- GDP as of Dec. 2013: **\$232 B**
- GDP Growth: **3.7%**
- GDP/Capita: **\$1,200**
- Population: **193.2 M**
- Public Debt as % of GDP: **51%**
- Unemployment: **6.2%**
- Inflation: **9.7%**
- **#108** best country for business

## RANKING

- Trade Freedom **124**
- Monetary Freedom **123**
- Property Rights **116**
- **Innovation** **74**
- Technology **115**
- **Red Tape** **85**
- **Investor Protection** **32**
- Corruption **112**
- Personal Freedom **99**
- Tax Burden **129**





## But **FORBES** made these comments:

- Official unemployment is under 6%, but this fails to capture the true picture, because much of the economy is informal and underemployment remains high.
- Over the past few years, low growth and high inflation, led by a spurt in food prices, have increased the amount of poverty.
- *One may think that economic growth will reduce poverty.*

# Fact:

- Economic growth has led to faster poverty reduction in Asia than elsewhere (Poverty Elasticity of Growth in Asia has been higher).



# There are exceptions, however.

- The Philippines had annual GDP growth averaged 4.9% in 2004-2009, but
- poverty incidence went up from 24.9% in 2003 to 26.5% in 2009.
- In India, the improvement in income inequality is so slow compared with the economic growth.



# Non-inclusive Growth

Prof. Cielito Habito,  
former DG of NEDA,  
Philippines

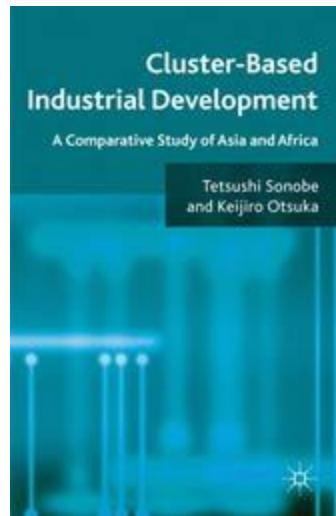
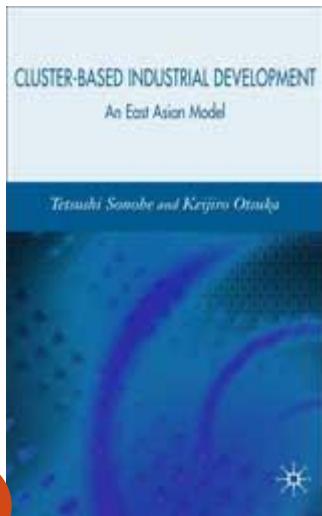


- **Narrow:** Growth is driven by a few high-growth sectors, such as business process outsourcing (BPOs), telecoms, real estate & a few geographic areas.
- **Shallow:** Export sector appears thriving but it has little linkage to the rest of economy.
- **Hollow:** “Jobless growth”; job creation lags far behind economic growth.
- Many developing countries share the same problem.

# **Dynamic economic growth is welcome, but it will be better if it is inclusive, too**

- The key to poverty reduction is **job creation for everybody**, not just for college graduates
- It is important to have **labor-intensive** industries developed.
  - Light manufacturing industries, such as garment, footwear, sporting goods, toys, and so on.
  - Some service industries, such as hospitality service, healthcare service, transportation service, etc.
- The question arises as to how to develop labor-intensive industries. To your surprise, very few economists have worked on this issue since 1980s.

# Have been working on this issue for 20 years



Have conducted more than 25 case studies of industrial development in different industries in 14 countries. East Asia, Southeast Asia, South Asia, Africa, ...

Sonobe and Otsuka, *Cluster-Based Industrial Development: An East Asian Model*, Palgrave Macmillan, 2006

Sonobe and Otsuka, *Cluster-Based Industrial Development: A Comparative Study of Asia and Africa*, Palgrave Macmillan, 2011

# A major finding

- The process of industrial development is similar among different industries in different countries, especially when the development is successful.
- One of the such similarities is that the development begins with many enterprises producing similar and closely related products (e.g., assemblers and parts suppliers) being located in a small area.
- Such areas are called **industrial clusters**

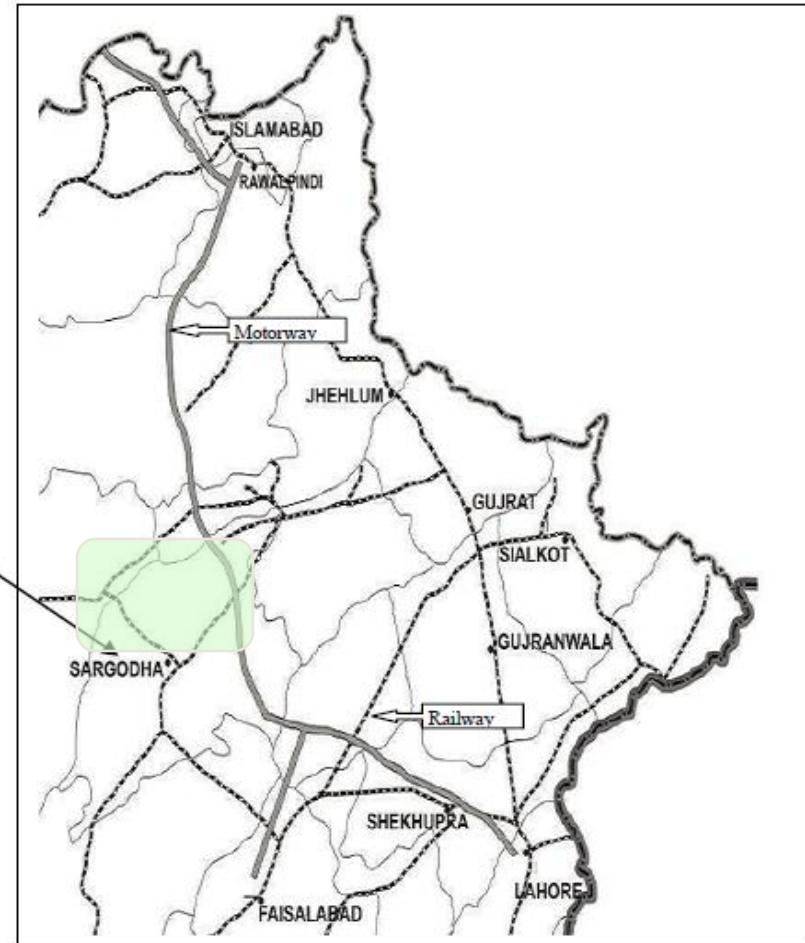
# Examples of clusters

- e.g., Sialkot is multiple clusters (surgical & dental instruments, etc), Silicon valley, Hollywood, Bollywood,
- In the era of Industrial Revolution, Manchester (textile), Birmingham (steel & machinery), Glasgow (ship-building), Philadelphia (textile), etc.
- In China, the number of clusters has increased dramatically as their economy has become increasingly market-oriented.
- There are many clusters even in sub-Saharan Africa.

# Why are there so many clusters?

- Of course, because clusters have advantages.
  - To start a business, one has to know how to produce the product, where to procure materials, and where to sell product ...
  - These things are mysteries for laypersons.
  - In clusters, however, “**the mysteries of the trade become no mystery but as it were in the air**” (Alfred Marshall).
  - Anyone can easily start a business there.
  - And this is a reason why clusters attract new businesses.
  - This feature makes cluster-based development **inclusive**.
- Among other advantages is the developed division of labor among enterprises. Is it inclusive, too?

# A case study in Sargodha by Babur Wasim Arif and Sonobe

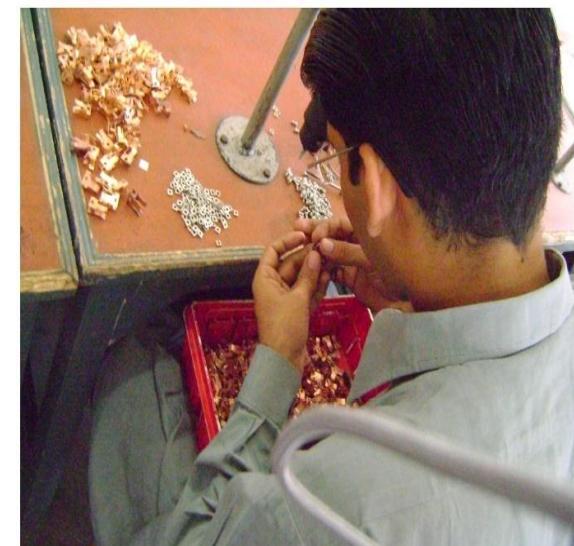


12 Figure 3.1: Location of study site (Diagram on the left is the map of Pakistan and diagram on right side shows the northern part of Punjab province)

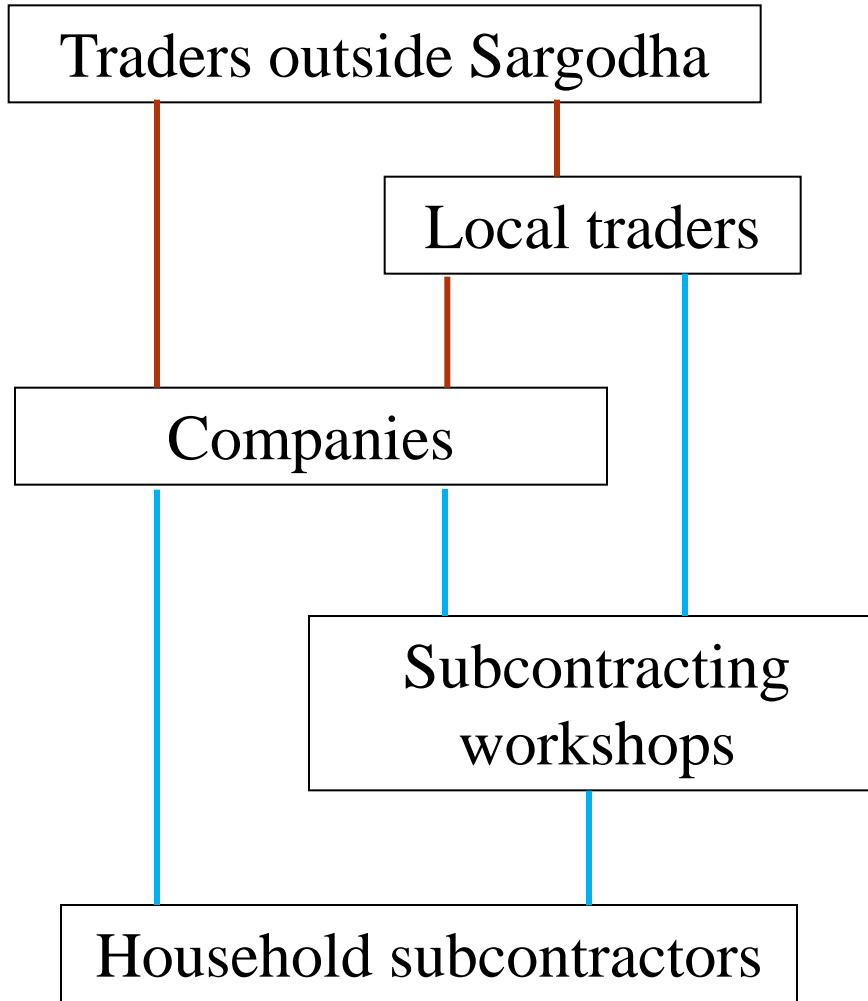
# Products



# Parts and assembly



# Putting-out and marketing



- Initiation in late 1960s
- There are about 1200 producers, and about 600 metal parts producers, die makers, suppliers of Bakelite powder, and traders of finished products (UNIDO, 2006)
- Division of labor between traders and producers and between assemblers and parts makers
- There is cooperation
- At the same time, there is competition which maintains the vitality of the cluster.

# Virtual Incubation in Industrial Clusters: A Case Study in Pakistan

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*Final version received August 2011*

**ABSTRACT** *In industrial clusters, transaction costs are kept low and free riding is discouraged by a community mechanism developed through dense and repeated interactions among entrepreneurs. In such environments, new entrants without established reputations and connections are put at a distinct disadvantage. This negative effect on new entry must be neutralised for an industrial cluster to expand. Using enterprise level data from Pakistan, this study finds that personal networks are indeed important for successful enterprise operation, which works to the advantage of incumbents, but that subcontracting plays the role of virtual incubation in nurturing new enterprises, reinforcing the cluster's dynamism.*

## I. Introduction

Industrial clusters of micro- and small-sized enterprises (MSEs) producing similar and related products abound throughout the world. Traditional explanations for the advantages and

# If cluster-based development is so good, and if it can get started without the help of government, a question arises

- as to why many industrial clusters fail to continue to grow larger and larger and instead become sluggish or stagnant?
- To answer the question, we need to know the **long-term process** of cluster-based industrial development, so that we can prescribe effective policies toward dynamic and inclusive economic growth.
- Here is our hypothesis, which has been repeatedly confirmed by not just our studies but an increasing number of studies by other researchers.

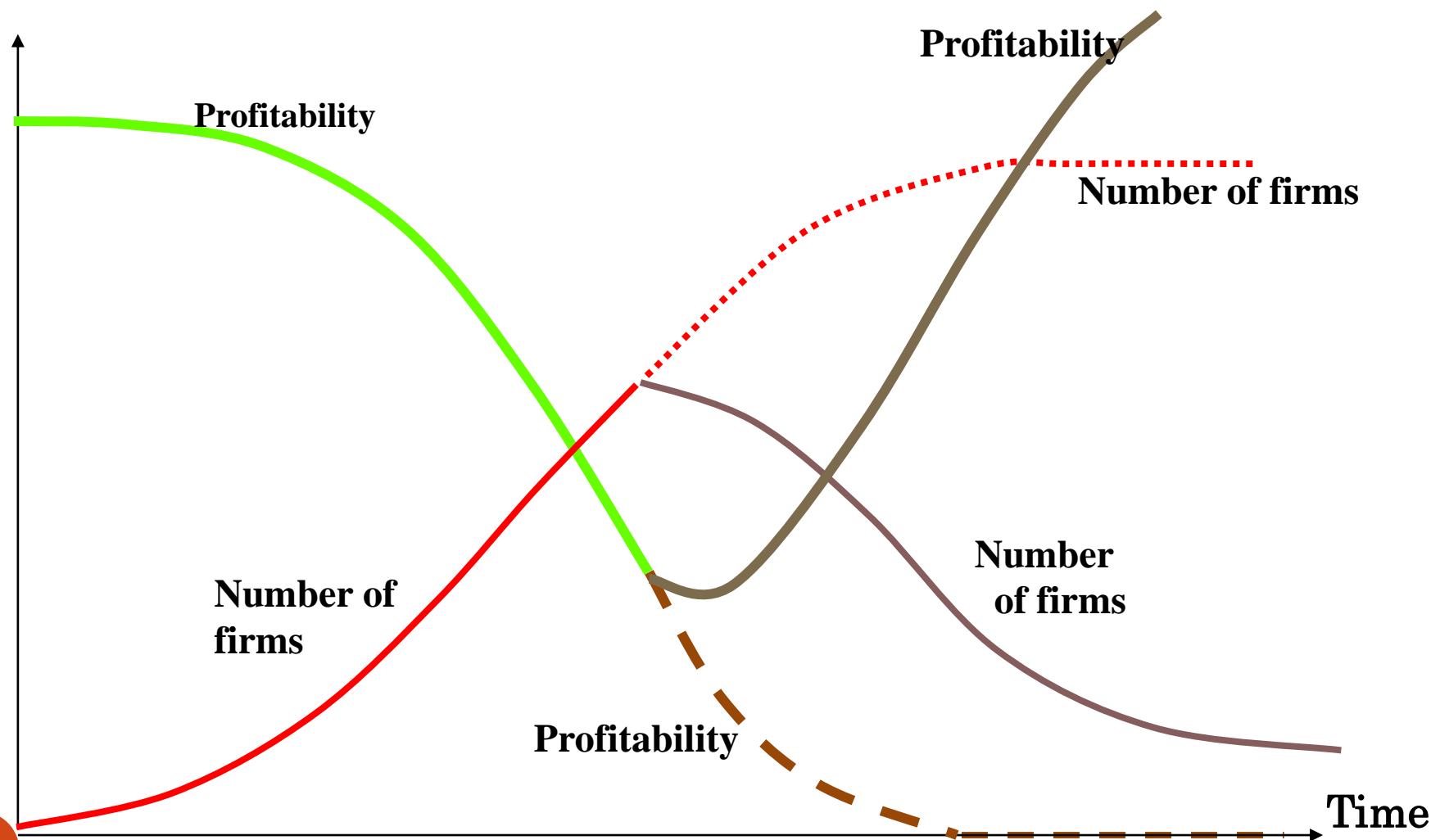
# Process of Cluster-Based Industrial Development

Stage	Typical Process of Development	
Initiation	1) Pioneer imitate foreign technology	2) Pioneer's success in business
Quantity Expansion	3) Emergence of followers (imitation of pioneer)	4) Expansion of production quantity
Quality Improvement	5) Declining profit	6) Improvement in product quality, marketing, management

7) Quality competition



# Another illustration of the same Patterns of Cluster development



# To enter the quality improvement phase,

- a) The quality of products have to be improved by employing engineers & skilled workers, and the quality must be maintained.... **Quality control**.
- b) Still, consumers will not immediately perceive the quality improvement. So, the innovative enterprises have to convince consumers ... **Branding & Marketing**.
- c) The innovative enterprises need special parts, which embody new ideas. To protect new ideas, it is important to develop **trust relationship** with suppliers.
- d) These enterprises embark on **exports, mass production, & merger** of smaller enterprises.
- e) A large number of workers have to be motivated to work efficiently and to acquire skills ... **Labor management**

The series of **multifaceted innovations** is nothing but a series of challenges for management.

# Everyone knows this is bad



# and this is better



# The problem, however, is that

- The owners and managers do not know how to motivate or encourage a number of workers to change their ways to make them more productive.



He is a university graduate. He has run his metalworking enterprise for 20+ years. He says he knows how to produce higher-quality products, but he complains:

He needs to learn management.

# This turns out to be a common problem

- Recently, an increasing number of economists, including myself, have conducted (randomized controlled) experiments of management training in developing countries.
- The most important finding is that typical managers know very little about those management practices which are standard at high performing companies.
  - The vast majority of managers believe that they are above the average! Of course, this cannot be the case.
- In developing countries, things are worse: managers there blame their poor technologies and uneducated workers, not their own poor management.

# In short, everyone should learn

- Dynamic and inclusive growth requires ample job creation,
- and hence the development of labor-intensive industries.
- For this purpose, the capabilities of workers and managers of these industries should be improved. To make the development sustainable, their capabilities should be improved continuously.
- In view of the multitude of managerial challenges, managers' continuous learning is of vital importance.
- To our surprise, however, managers has known management very little and few of them feel the need to learn!

# So, what to do first?

- The first thing to do is to induce business owners/managers to learn about management.
- But this is not easy because those who need to learn do not know the value of learning.
- So, the market mechanism does not work.
- My favorite industrial clusters, community mechanism, or other non-market institutions, do not help, either.
- The government should play a role in awareness campaign, public training, quality assurance of management consulting, etc.

# What to do next?

- If asked what else, everyone will think of financial assistance (i.e., provision of low-interest loans) and the provision of infrastructure.
- Be careful, however, because so much money has been wasted in these things.
- Provision of finance and infrastructure has high returns only when they are badly needed.
  - Finance businesses after they have improved management and start growing.
  - Provide industrial zones or parks with power supply and good roads to large cities and ports after initial clusters become too congested.

# **Before recommending a policy, we need to study ...**

- To find out better training methods, an innovative combination of microfinance & training & provision of infrastructure, etc.
- A relatively new research question is, how to scale up a promising pilot project to a nationwide program, without causing serious government failures, given the limited capacity of public administration, political instability, corruption culture, etc.

# Conclusions

- We need more and more studies and more applications of new knowledge to policies.
- We need young people who study and who understand research results and apply them to policies.
- GRIPS launched a new PhD program “State Building and Economic Development” (PhD in International Development Studies) last year.
- GRIPS is launching another new PhD program “GRIPS Global Governance (G-cube)” (PhD in Advanced Policy Studies) this year.

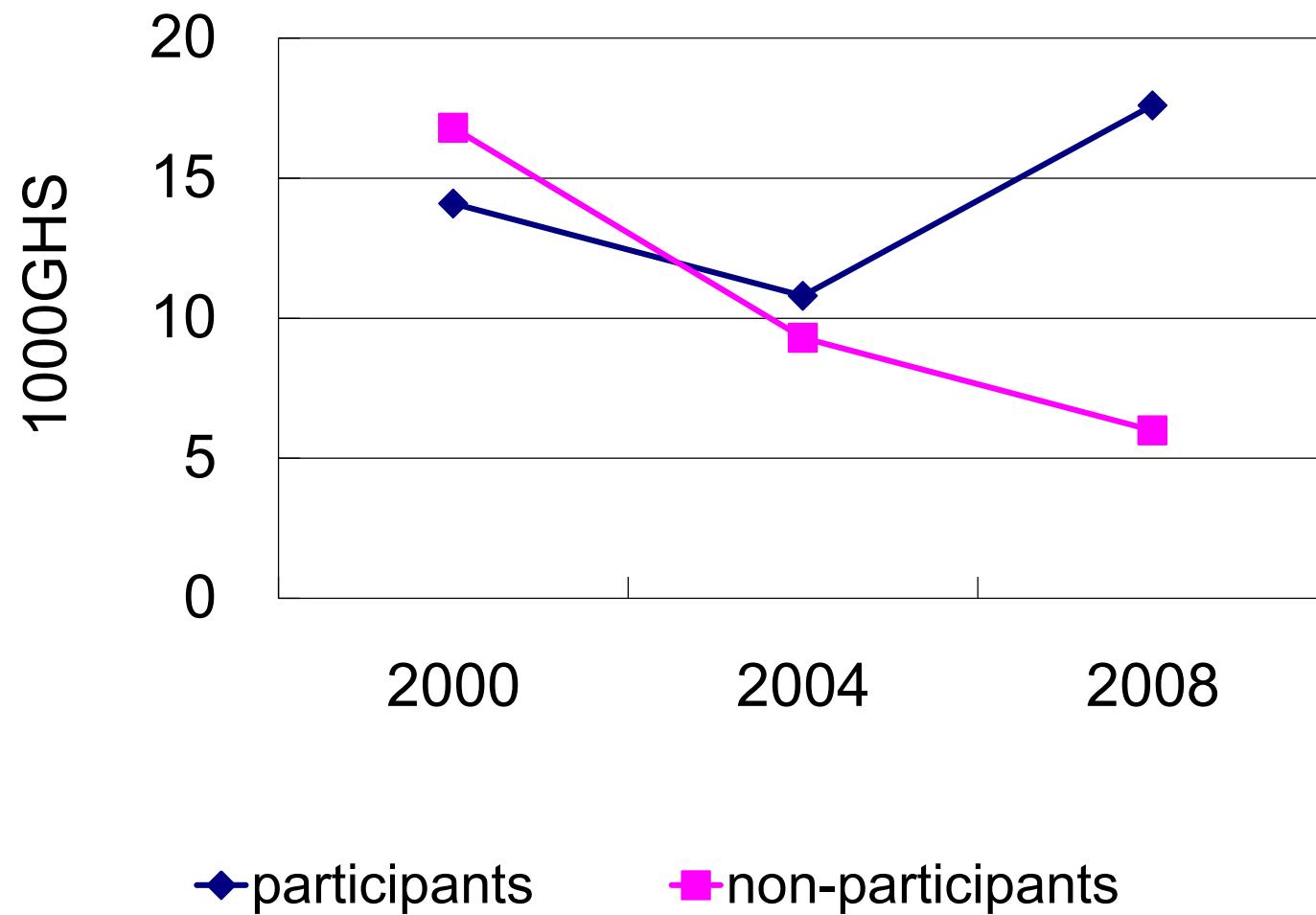
# **Thank You for your attention!**

Questions, comments and suggestions are welcome

# Management training in Ghana



Ghana: Annual gross profits of metal products manufacturers before and after the training program in November-December 2007



# Clinical records at a hospital in Tanzania



before (Aug.2007)



Mid.year ( Feb.2008)



After 1 year (Aug.2008)

# **FROM LAHORE AOTS**

## **Alumni Societies webpage**

- AOTS stands for the Association of Overseas Technical Scholarship, established in 1959 with the support of the Japanese Ministry of Economy, Trade and Industry.
- The main purpose of AOTS is to promote technical cooperation for the industrialization and development of developing countries and enhance mutual understanding and friendly relationship between those countries and Japan.
- To date, AOTS has trained nearly 97,000 persons in Japan from over 150 countries and regions. In addition, it has organized various training programs outside Japan involving nearly 13,000 participants from developing countries.
- AOTS has invited approximately 1550 Pakistan trainees to Japan and 1130 were trained in Pakistan under overseas training programs.
- The AOTS Alumni societies are non-profit private organizations founded by the participants of AOTS programs