

The 26<sup>th</sup> S&T Consultants Meeting of Executive Yuan  
Topic II :  
Enhancing the Plan and Use of Professional Human Resources  
to Ensure Industrial Technological Competitiveness

Case 1:  
Development Strategy of Taiwan's  
Professional Labor Up to Year 2015

Sponsoring Agency: Council of Labor Affairs (CLA)

Supporting Agency: MOI, MOEA, CEPD, DGBAS, MOE, NSC

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Minister of CLA

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# 《Outline》

- I. Background Introduction
- II. Problem Analysis
- III. Policy Recommendation
- IV. Discussion Focus

# I. Background Introduction

Quality and quantity of professional labor is the root of sustaining Taiwan's economic development. In the era of globalization and digitalization, the focus of industrial development has shifted from labor and capital investment to knowledge-based competition.

# I. Background Introduction

Business Environment Risk Intelligence (BERI) in Switzerland has evaluated investment environment based on labor quality indexes in different countries. BERI has moved Taiwan's position to advanced economy of labor force in 2003 and rated Taiwan's investment environment to No.3 in the world from year 2003 to 2005. This implies that labor force is critical and important to nations' development.

Year	Labor Legal Framework (30%)	Relative Productivity (30%)	Labor Attitude (25%)	Labor Techniques (15%)	Score	Rank
2003	67	62	80	95	73	3
2004	67	62	80	95	73	3
2005	67	63	80	95	73	3

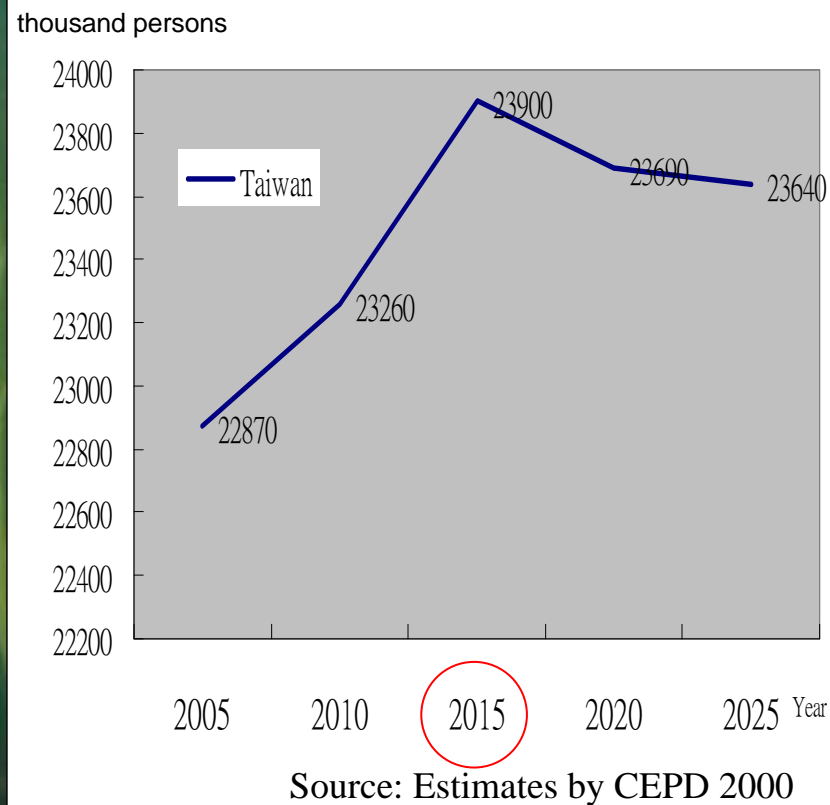
Source: IDIC, MOEA, 2005

## II. Problem Analysis

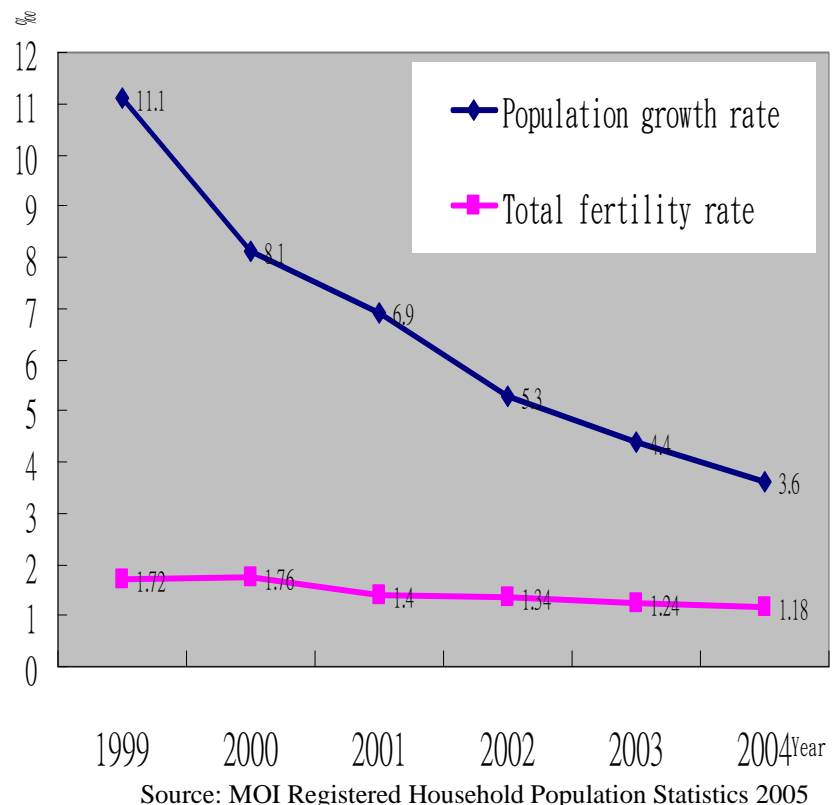
1. Structural Problem of Population
2. Low Participation of Labor Force
3. Imbalanced Development of Higher Educated Human Resource in Science & Engineering
4. Absence of Comprehensive Survey and Forecast Mechanism for Labor Demand & Supply
5. Existing Gap between Demand & Supply of Industrial Manpower
6. Budgetary Shortage of Public Vocational Training
7. Lack of Mechanism for Integrated Labor Development Strategies

# II.1 Structural Problem of Population

Zero population growth in Taiwan in 2006 might imply earlier coming of negative population growth era, hindering economic development.

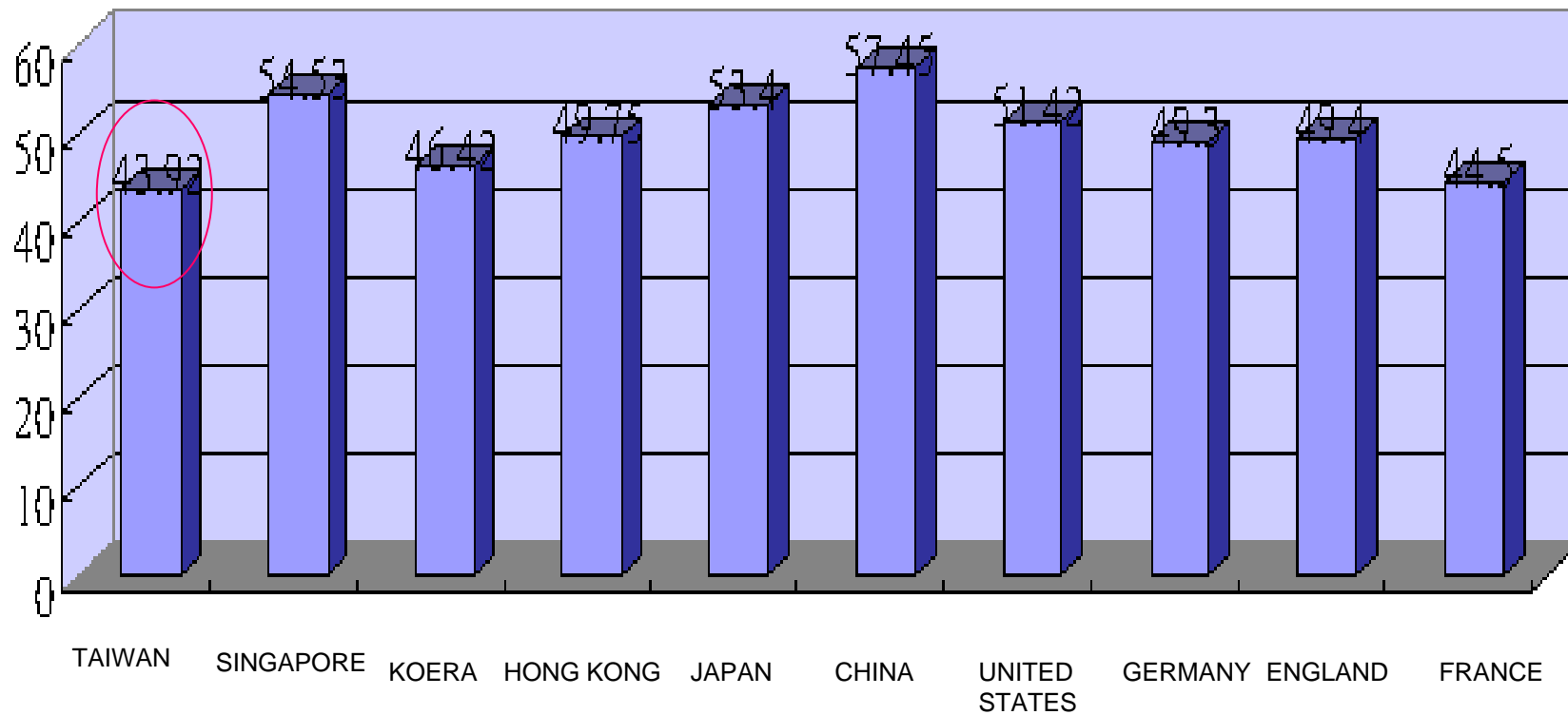


The fertility rate and population growth rate have been on the decline in recent years in Taiwan.



# II.1 Structural Problem of Population

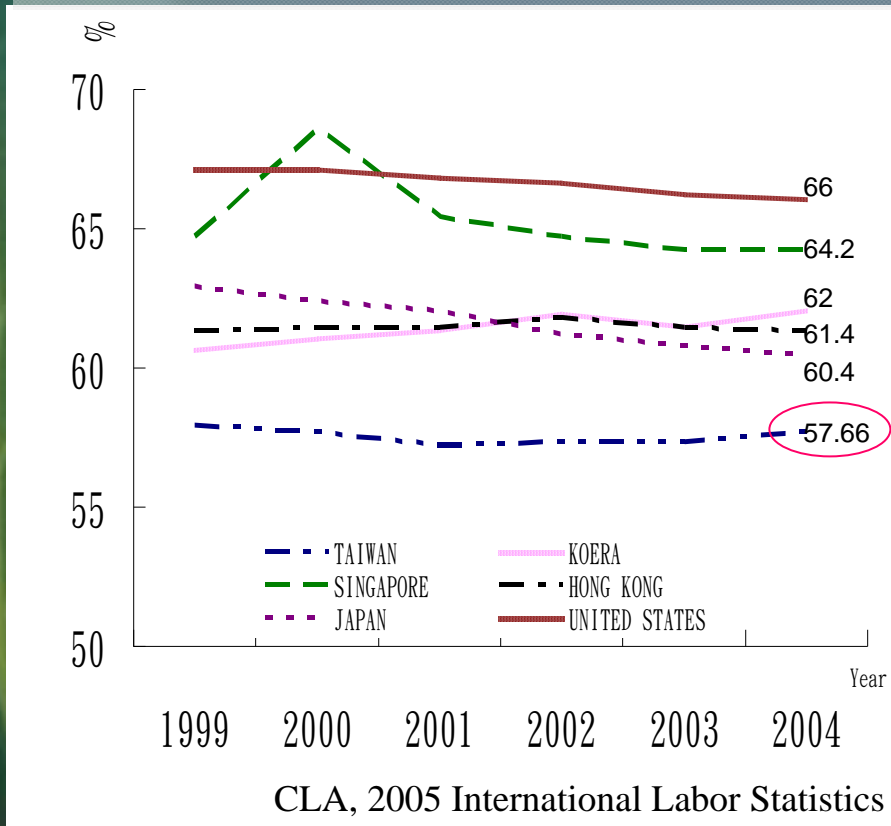
Relatively low share of labor force in Taiwan



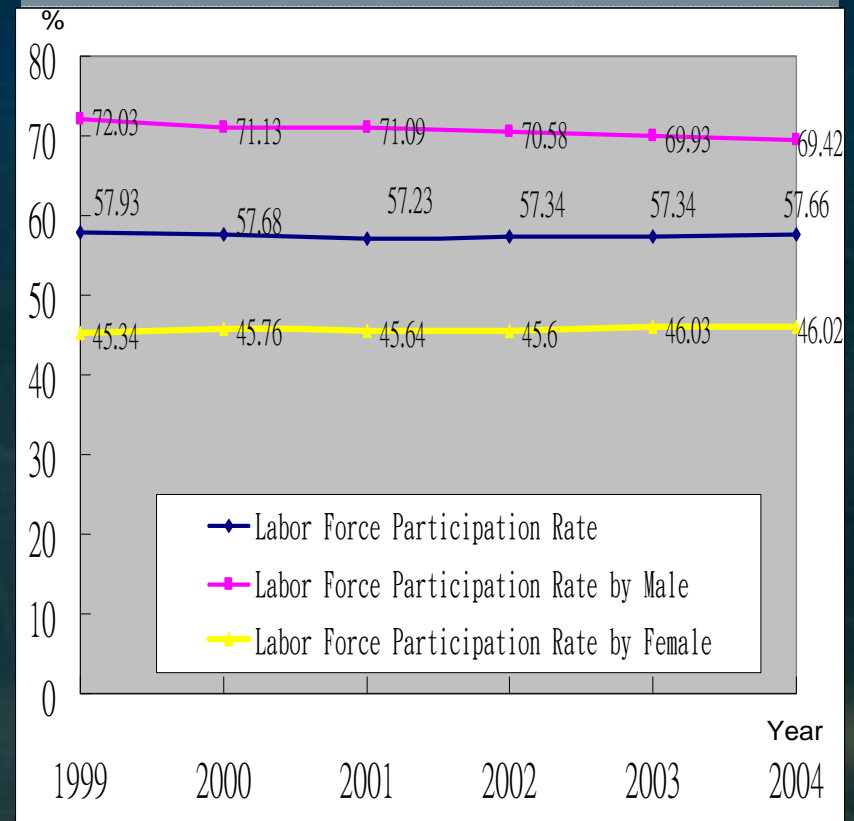
Source: 2001 World Competitiveness Yearbook

# II.2 Low Participation of Labor Force

Relatively low labor force participation rate in Taiwan

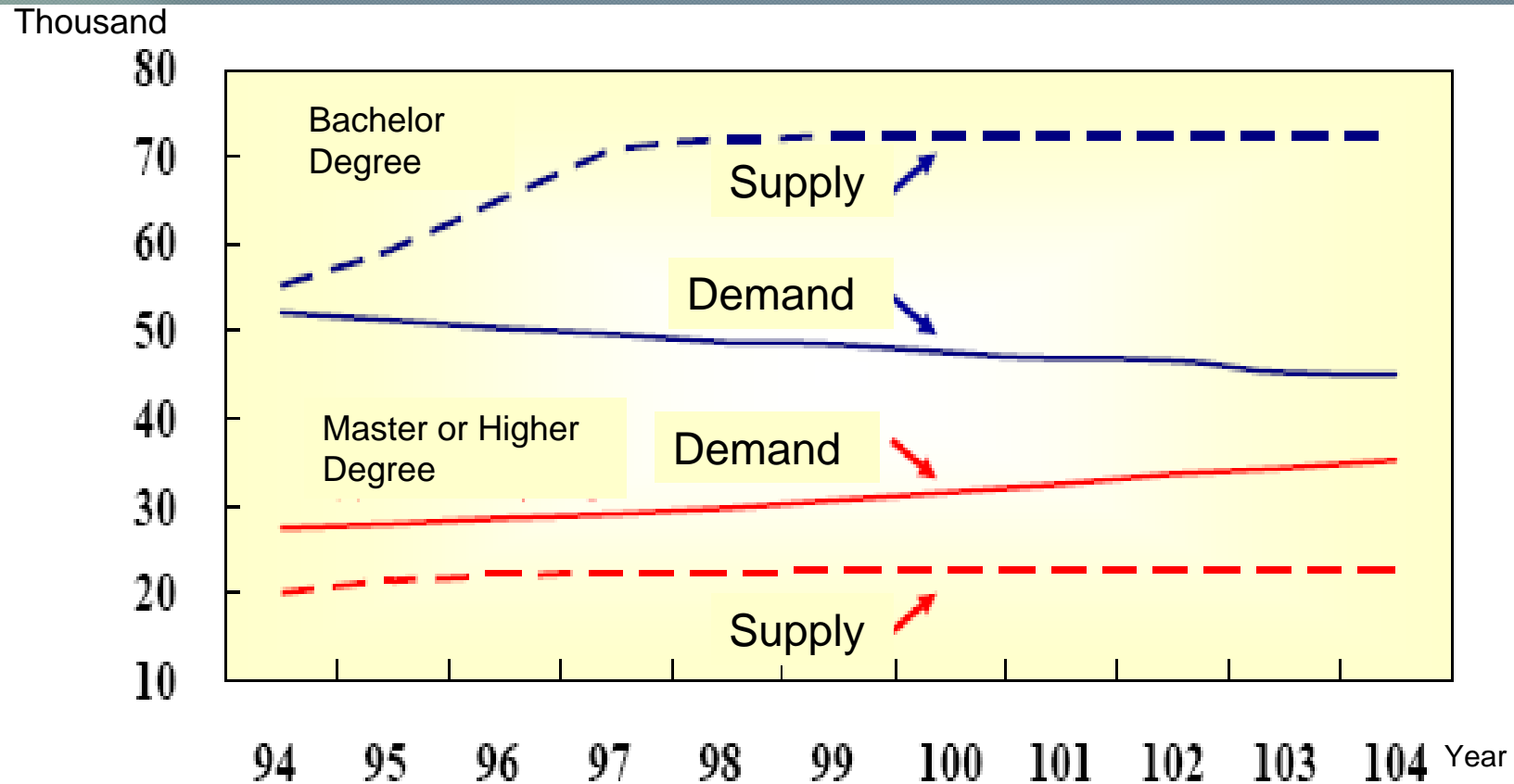


Growth weakening of labor force participation rate in Taiwan



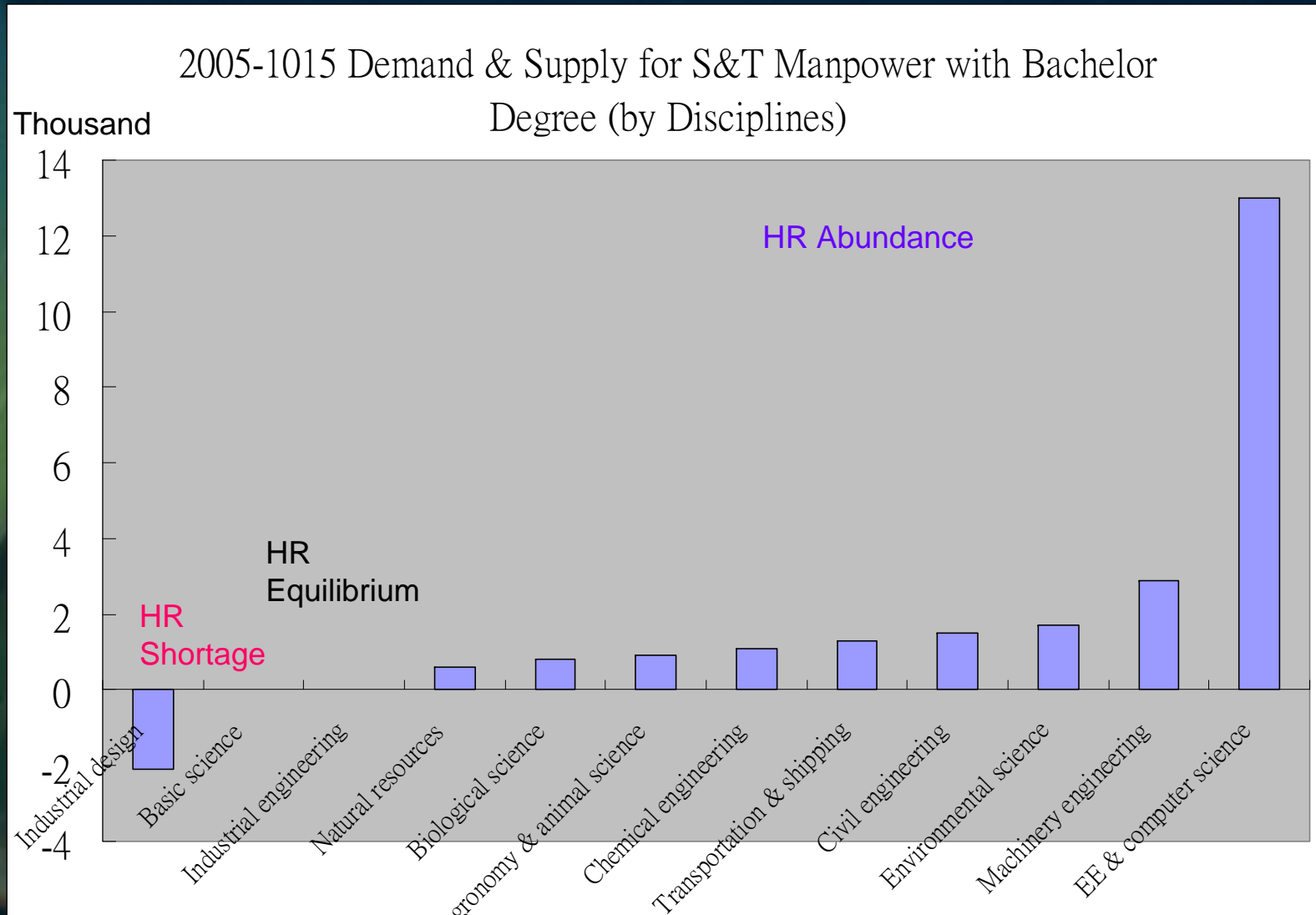
# II.3 Imbalance of Higher Educated Human Resource in Science & Engineering

Abundance of manpower with bachelor degree, but shortage of manpower with graduate education in Taiwan



Source: CEPD, 2005

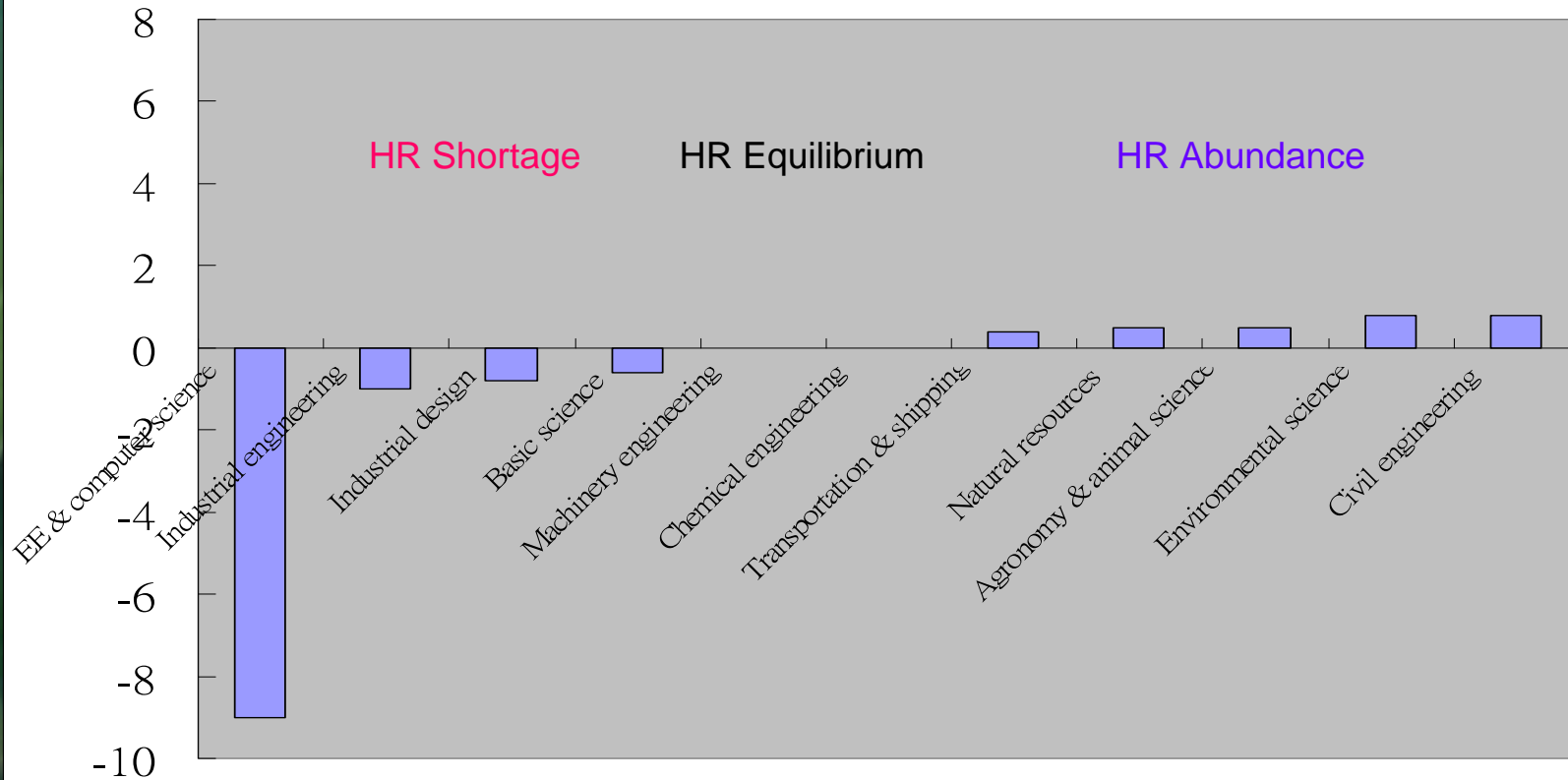
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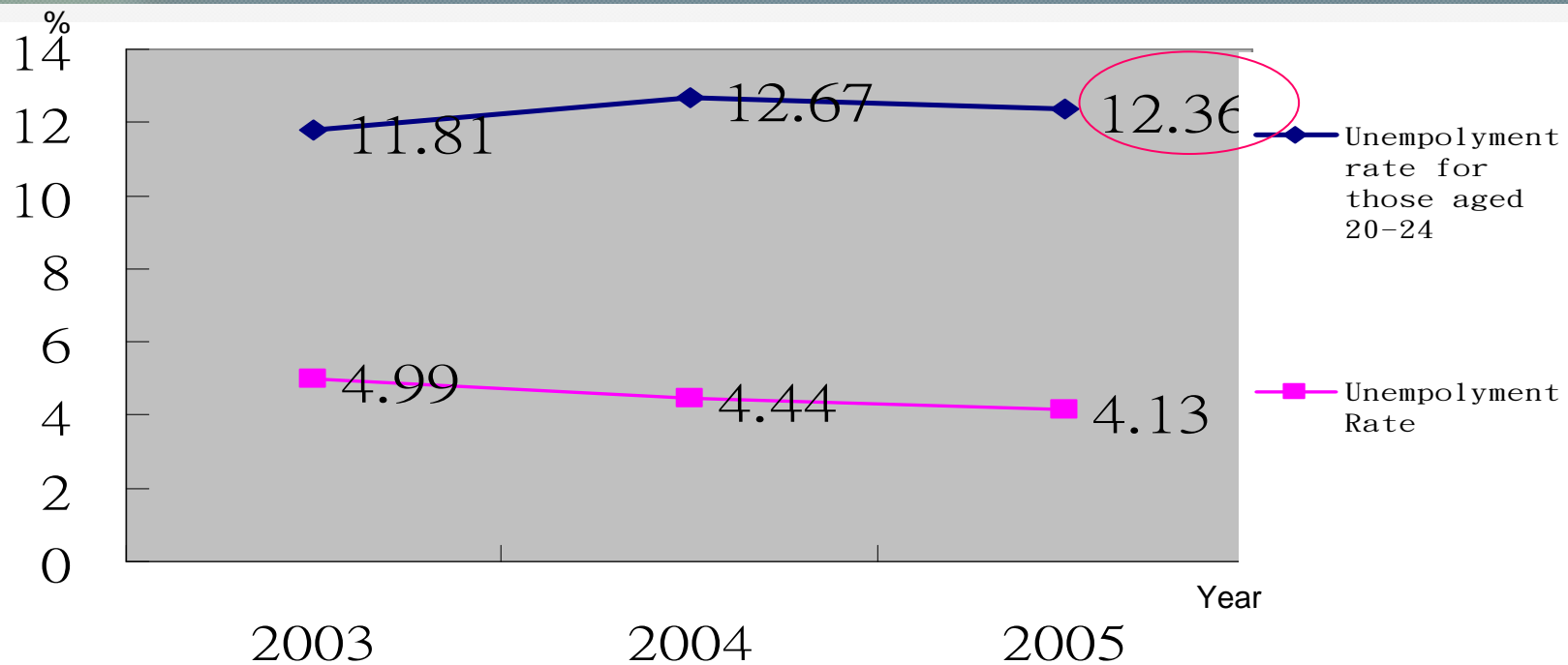
Higher education in Taiwan needs to be redirected to the need of long-term national economic development.

2005-1015 Demand & Supply for S&T Manpower with Master Degree or Higher (by Disciplines)



## II.3 Imbalance of Higher Educated Human Resource in Science & Engineering

- Unemployment rate for those aged 20-24 with higher education hit 12.36%, implying the possible qualitative and quantitative inconsistency with industrial needs.



## II.4 Lack of Comprehensive Survey & Forecast Mechanism for Labor Demand & Supply

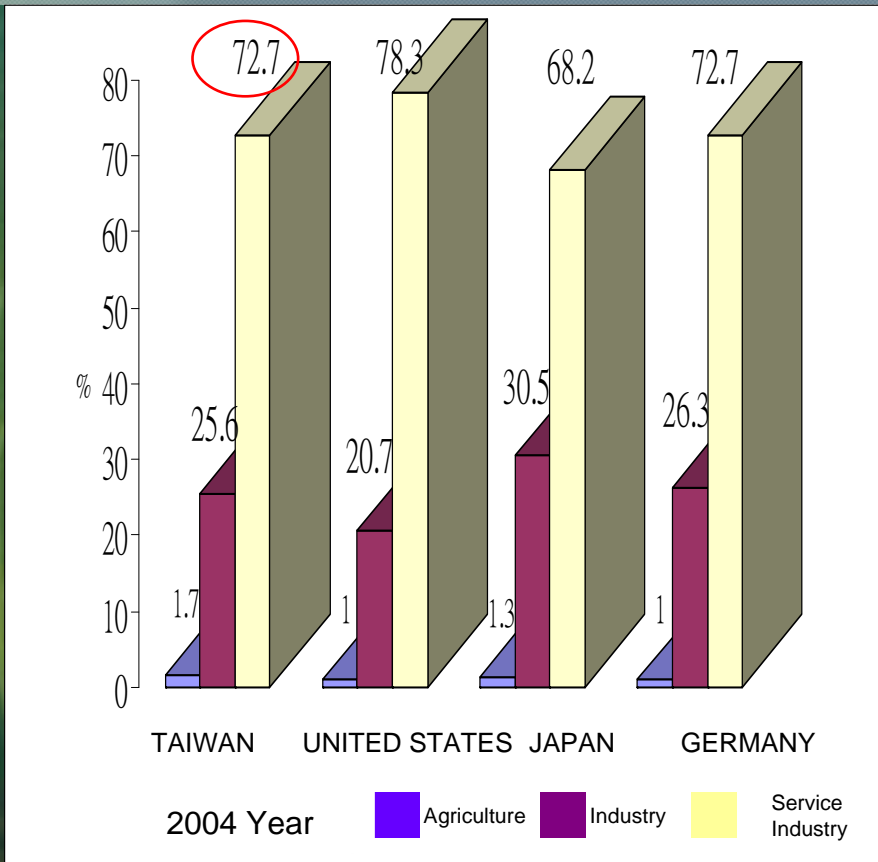
- Currently surveys and forecasts for labor demand & supply have been outsourced to academia, lacking the long-term, systematic, and thorough nature.
- In the future, Taiwan needs to establish a complete mechanism to survey and predict labor supply & demand considering Taiwan's own needs.

## II. 5 Existing Gap between Demand & Supply of Industrial Manpower

- Currently the value of production in the service sector is about 72.7% of GDP, while the share of employment reaches only 58.23%, implying considerable room for development when compared with Japan, Korea, USA, and Germany.
- In the future both service and manufacturing sectors are in great need of professional labor.

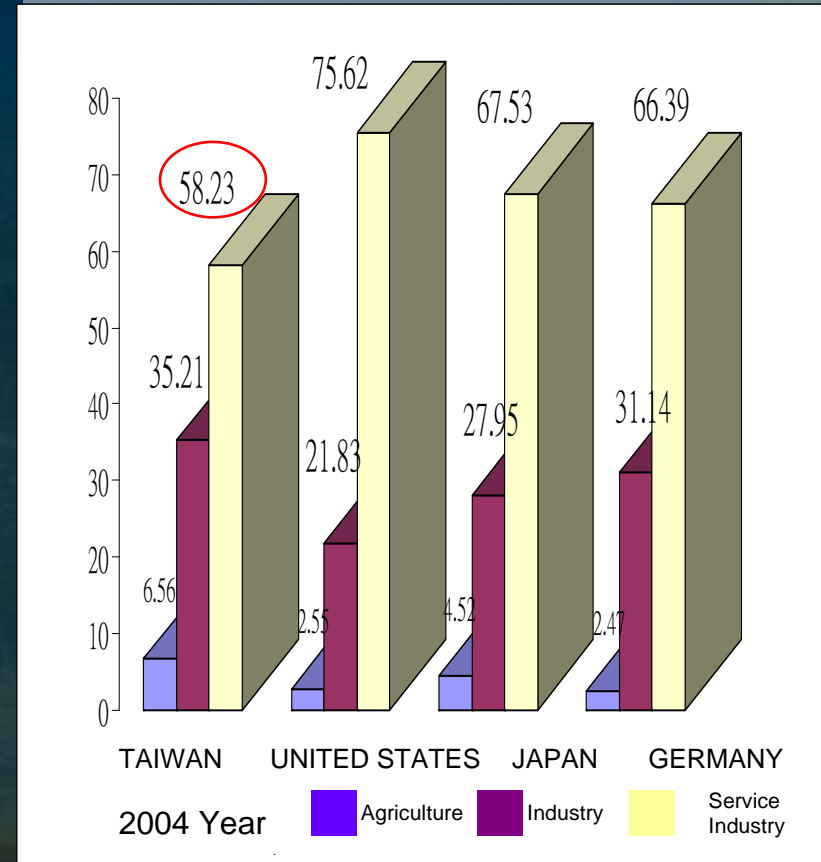
# II. 5 Existing Gap between Demand & Supply of Industrial Manpower

Industrial structure in terms of GDP for selected countries



Source: DGBAS 2005

Industrial structure in terms of employment for selected countries



Source: DGBAS 2005

## II. 5 Existing Gap between Demand & Supply of Industrial Manpower

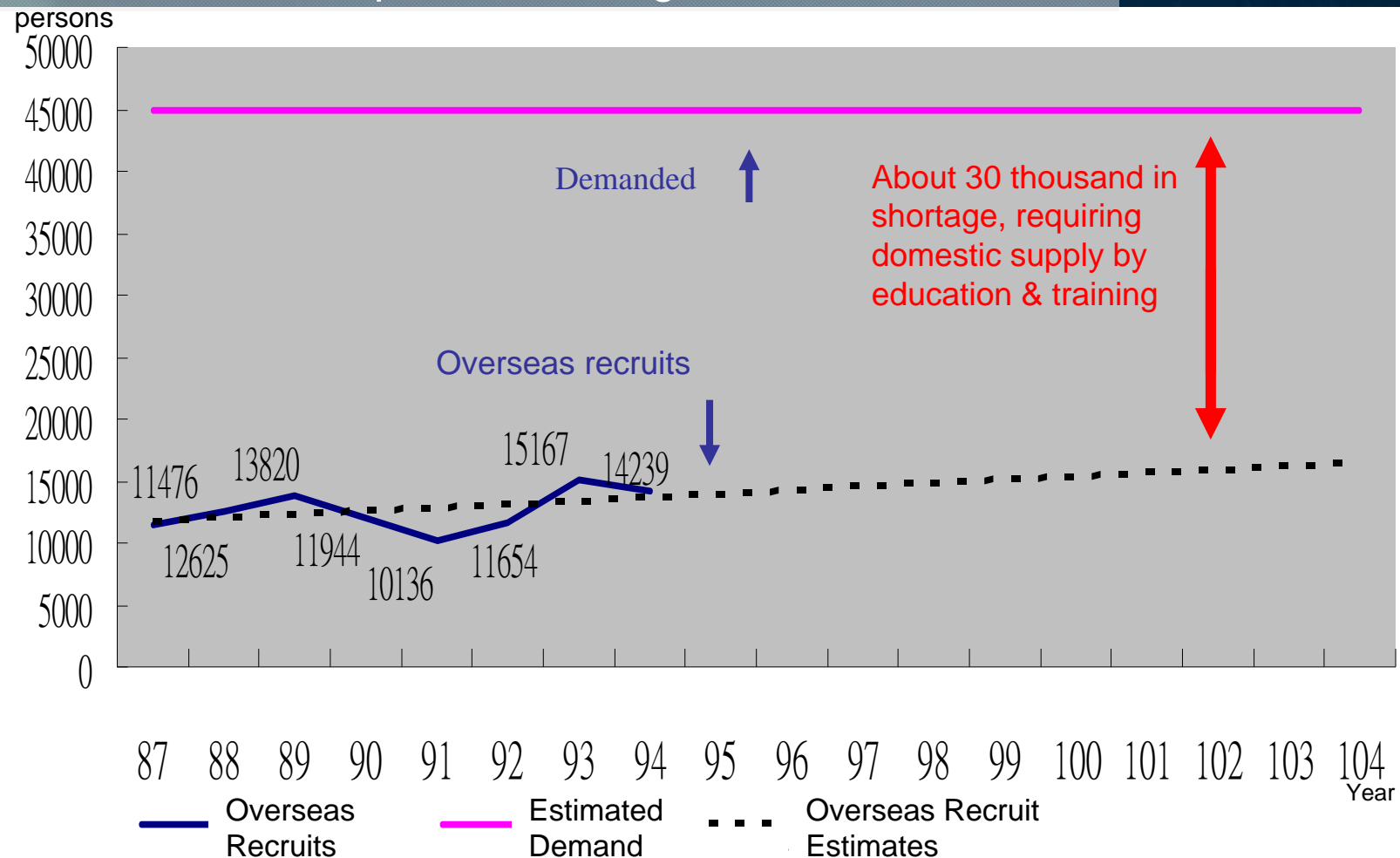
- In the innovation- and knowledge-driven era, it becomes crucial how to enhance professional labor force qualitatively and quantitatively for the purpose of uplift a nation's industrial competitiveness.
- The average shortage of high-rank professional & managerial manpower amounted to about 40-50 thousand annually.

2015 estimated demand & supply for labor force in Taiwan

Technical level (Unit: thousand)	'05-08 Annual AVG.			'09-15 Annual AVG.			'05-15 Annual AVG.		
	S	D	Gap	S	D	Gap	S	D	Gap
<b>Total</b>	332	689	-357	324	700	-376	327	698	-371
<b>High-rank</b>	15	65	-50	23	64	-41	20	65	-45
<b>Mid-rank</b>	273	262	11	261	261	0	266	262	4
<b>Low-rank</b>	44	362	-318	40	375	-335	41	371	-330

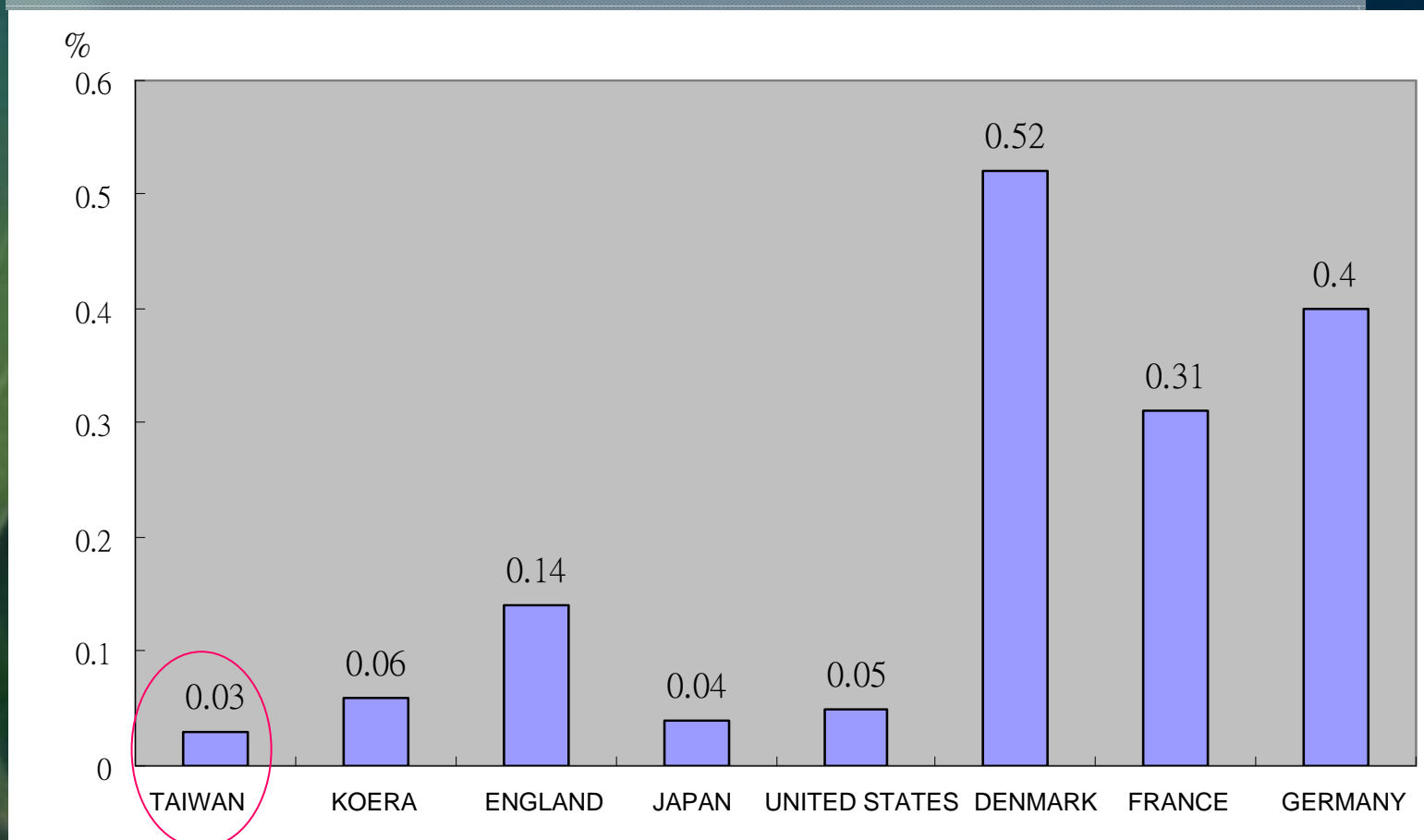
# II. 5 Existing Gap between Demand & Supply of Industrial Manpower

## Professional Manpower Shortage in Taiwan



## II.6 Budgetary Shortage of Public Vocational Training

Public Vocational Training Spending as a share of GDP



Source: OECD Employment at a Glance 2005

## II.7 Lack of Mechanism for Integrated Labor Development Strategies

Labor development strategies may be classified into 3 categories of “demand & supply forecast,” “education & training,” and “overseas recruitment,” and only when the above 3 sets of measures are integrated in a consistent fashion can the need of industrial development be adequately met.

In Taiwan, currently decision-making related to the development of labor force involve such government agencies as CEPD, MOE, NSC, MOEA, and CLA, the coordination among which requires a well-established integration mechanism so as to avoid unnecessary waste and inefficiency.

# III. Policy Recommendation

1. Establish long-term survey & statistics for demand & supply for professional labor force

(1) Establish longer-term forecast mechanism for domestic professional labor force & employment

(2) Establish verification mechanism of domestic professional labor force among industry, academia, and the government

(3) Establish the databank of international professional labor force statistics based on occupational classification

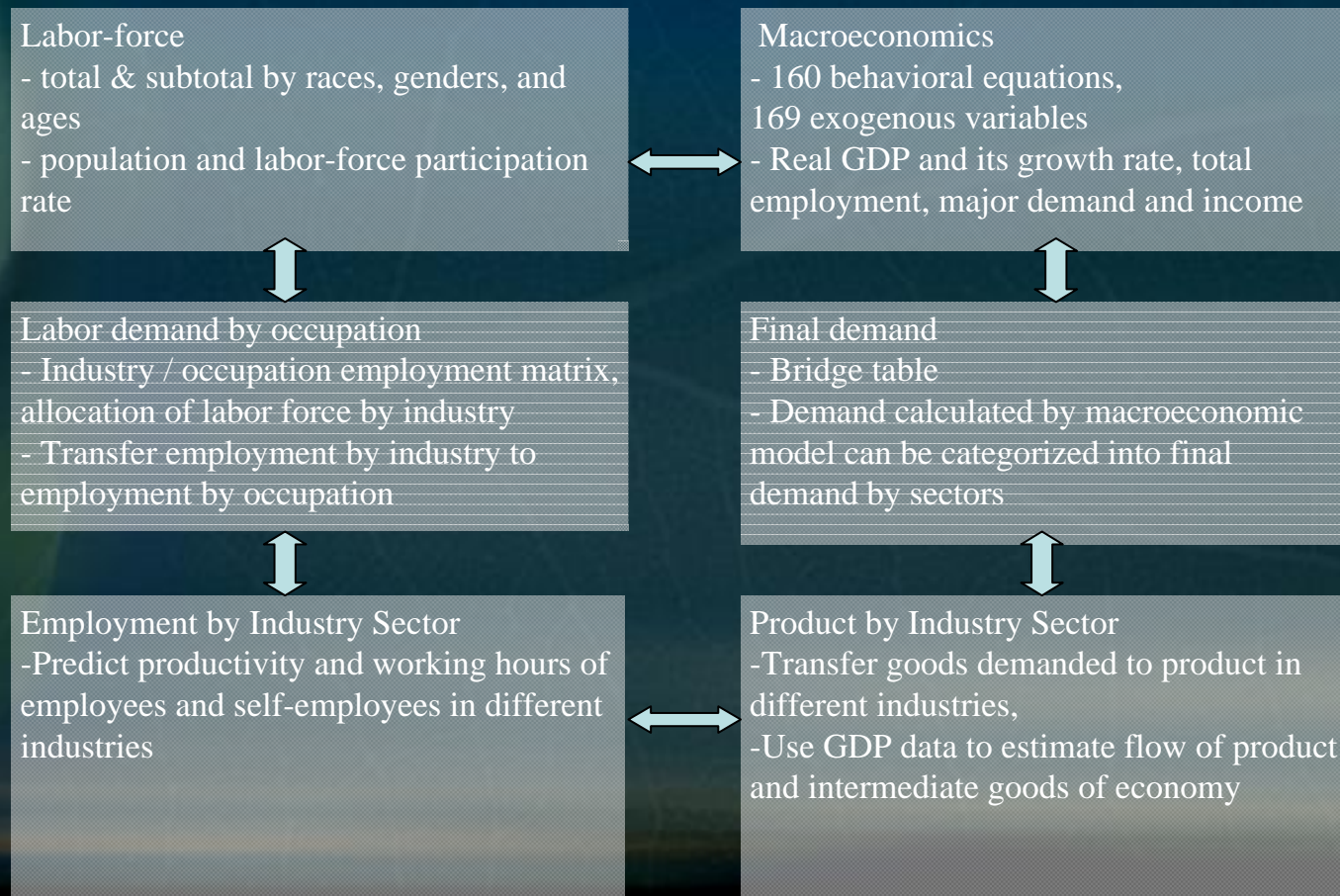
# Establish Prediction Mechanism for long-term Labor-force Supply and Demand

Well-established statistics & forecasts for labor force dynamics serve as the foundation for policy-making of labor force development.

International community has been upholding the importance of data availability for labor force dynamics. Conspicuous examples include US BLS, CEREQ in France, ROA in Netherlands, IAB in German, among others, sharing the common features of specialization, cross-sectoral cooperation, long-term projects & funding, and information integration.

# Establish Prediction Mechanism for long-term Labor-force Supply and Demand

Preliminary proposal would be to follow the employment forecast methods of US BLS, with major focuses on labor force, macroeconomics, Industrial output & employment, occupational demands.



# III. Policy Recommendation

## 2. Establish a policy integration mechanism via the ongoing government organizational reform

responsible for inter-agency coordination, and integration among industrial, academic, and public sectors so as to form policy guidelines and provide for related surveys & forecasts, professional capability analysis, course module planning, training standards, certification system, and related consultancy.



# III. Policy Recommendation

## 3. Promote effective education & training of professional labor force, and its efficient use

- 1) Adjust Direction of Professional Labor-force Based on Demand of Industries and Long-term Economic Development
- 2) Establish Mechanism to Develop Occupational Expertise of Professional Labor-force
- 3) Establish System of Certification of Professional Labor-force
- 4) Enhance Usage of Educated and Trained Professional Labor-force
- 5) Promote Academic Communities to Establish Inter-discipline Advanced Research Institutes and Cultivate Future Professional Labor-force

# III. Policy Recommendation

## 4. Overseas Recruitment of Quality Professional Labor Force

- 1) Construct Good Environment to Attract International Professional Labor-force
- 2) Adjust Immigrant Regulations of International Professional Labor-force Flexibly Based on Demand of Economic Development
- 3) Provide Favorable Financial Incentives & Supports
- 4) Review Related Regulations of Introducing International Professional Labors
- 5) Establish Specialized Organization and Website to Recruiting International Labor-force; Set up Service Center of Recruiting Service in Focused Countries

# IV. Discussion Focus (1/4)

Theme 1: Establish a policy integration mechanism of policy making and implementation for human resource development

- Establish a policy integration mechanism for coordinating the related policy making & implementation via the on-going government organizational reform
- Serve as the platform of idea exchanges among industry, academia, and the government
- Provide consultancy service for the public
- Implement the policies & action plans for human resource development

**Any comment & feedback will be greatly welcomed.**

# IV. Discussion Focus (2/4)

Theme 2: Follow the model of manpower demand & supply forecast by US BLA to establish the related forecasting mechanism in Taiwan

- Revise industrial & occupational classification
- Set up & maintain the related macroeconomic model
- Build up labor mobility data cross industries, occupations, regions, and countries
- Establish standards & evaluation mechanism for occupational capabilities

**Any comment & feedback will be greatly welcomed.**

# IV. Discussion Focus (3/4)

Theme 3: Enhance the mechanism of education, training, & development for occupational capabilities

- Review regularly & adjust if necessary the new setup of colleges, departments, and graduate programs in universities
- Promote more flexible system of credits, curriculum, & interdisciplinary studies in universities
- Establish the scholarship for professional manpower development to promote the internationalization of manpower in key areas
- Build up the channels & networks for international cooperation in training professional manpower among foreign enterprises or organizations

**Any comment & feedback will be greatly welcomed.**

# IV. Discussion Focus (4/4)

Theme 4: Set up a specialized organization for the overseas recruitment of professional manpower

- Set up a specialized overseas recruiting organization of professional manpower
- Set up the website for personnel recruitment
- Set up the service center for recruiting overseas manpower in key areas

**Any comment & feedback will be greatly welcomed.**



More Comments  
Are Welcomed!