Vocational and technical education in China:

Efforts for skills matching

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I. Characteristics of TVET China

- Largest run by Education: slow to react to demand
- Central control: indispensable for reducing skills gap

II. Efforts for skills matching

- Strategies/plans
- Policies/regulations
- Actions / interventions

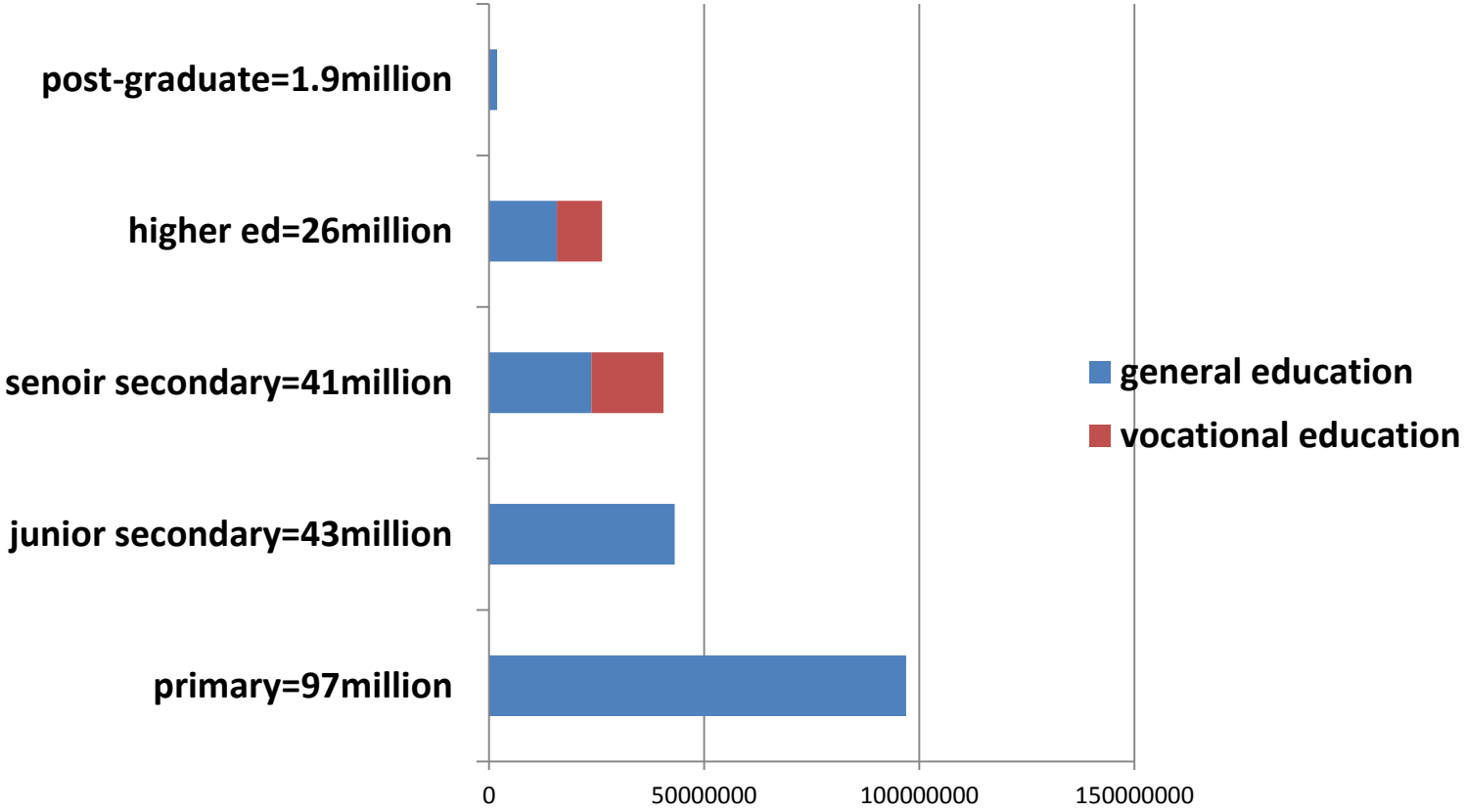
III. A study in some industries

- High-speed rail
- Electronic and information
- Automobiles

IV. Challenges

- Mismatching persisting
- Perception
- Limited involvement of enterprises

Total Students in 2015 in China



I. Characteristics of TVET system in China

Variety: Largest TVE in the world: 16.74 million students in **11500** senior secondary vocational schools and 10.49 million in **1341** vocational colleges in 2015.

Parallel : integral vocational Education at secondary and tertiary levels

Qualification: E by Education and T by HR

Public nature: governmental planning

II. Recent efforts for skills matching

1. **National strategies/plans**:

to make education more relevant

- Action plan for the development of vocational higher education(2015-2018) in November 2015;
- Vision 2030: modern TVET system in 2016;

2. **Policies/Regulations:**

to urge schools to meet skills needs

- Governmental suggestions on transformation of local universities into application-oriented universities, in May 2015; 600 universities
- Preparation of Guidelines on sectors skills needs to help vocational colleges with specialties setting and adjusting, in Dec. 2015; 20 sectors

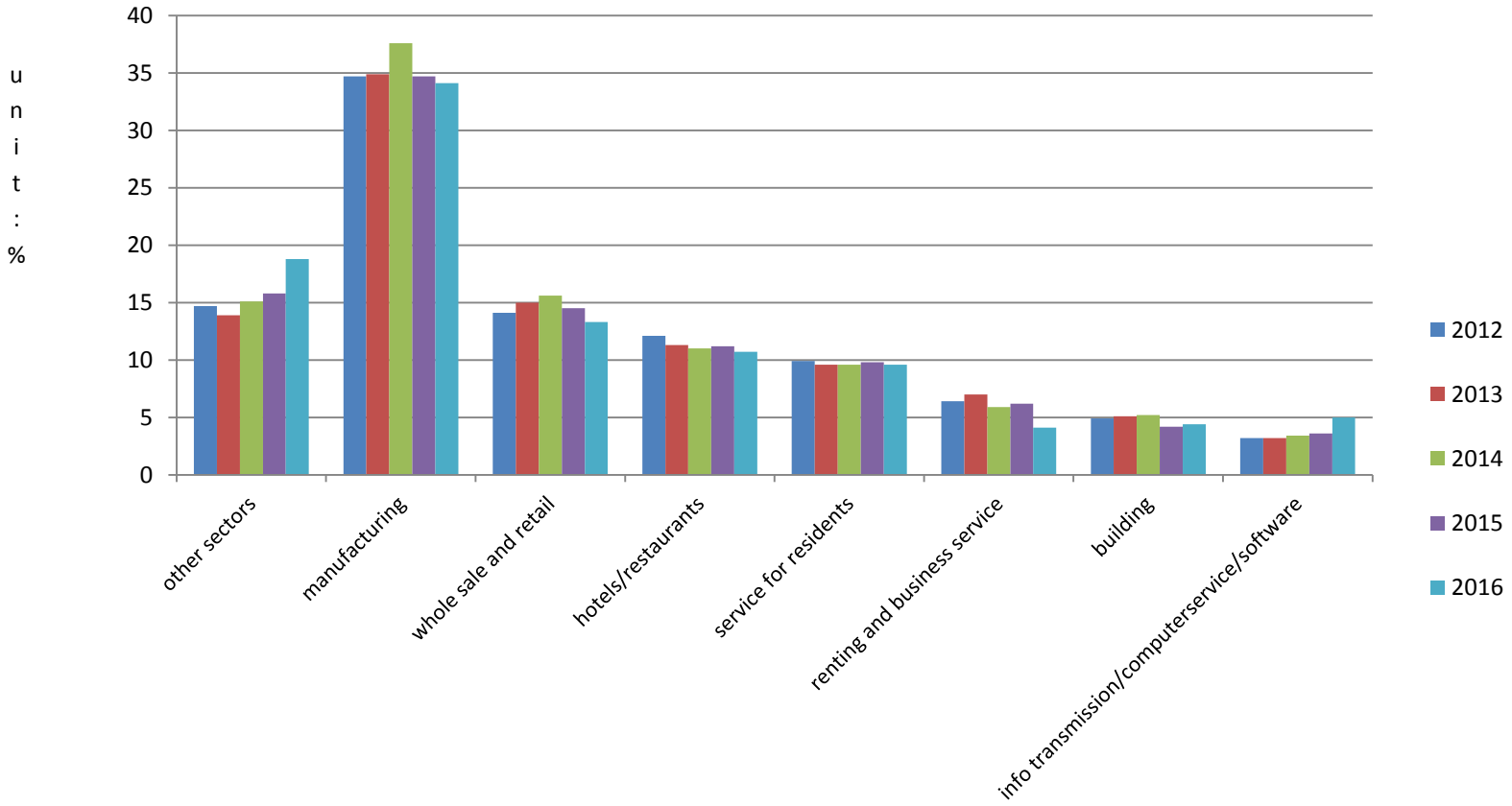
- **job-oriented specialties: the Guideline on Criteria for specialties setting in vocational colleges and the List of specialties for reference for vocational colleges are updated in 2015, stipulating that enrollments will be reduced or stopped if the employment rate of their students could not reach 60% in 2 consecutive years after students are graduated.**

3. Actions/interventions

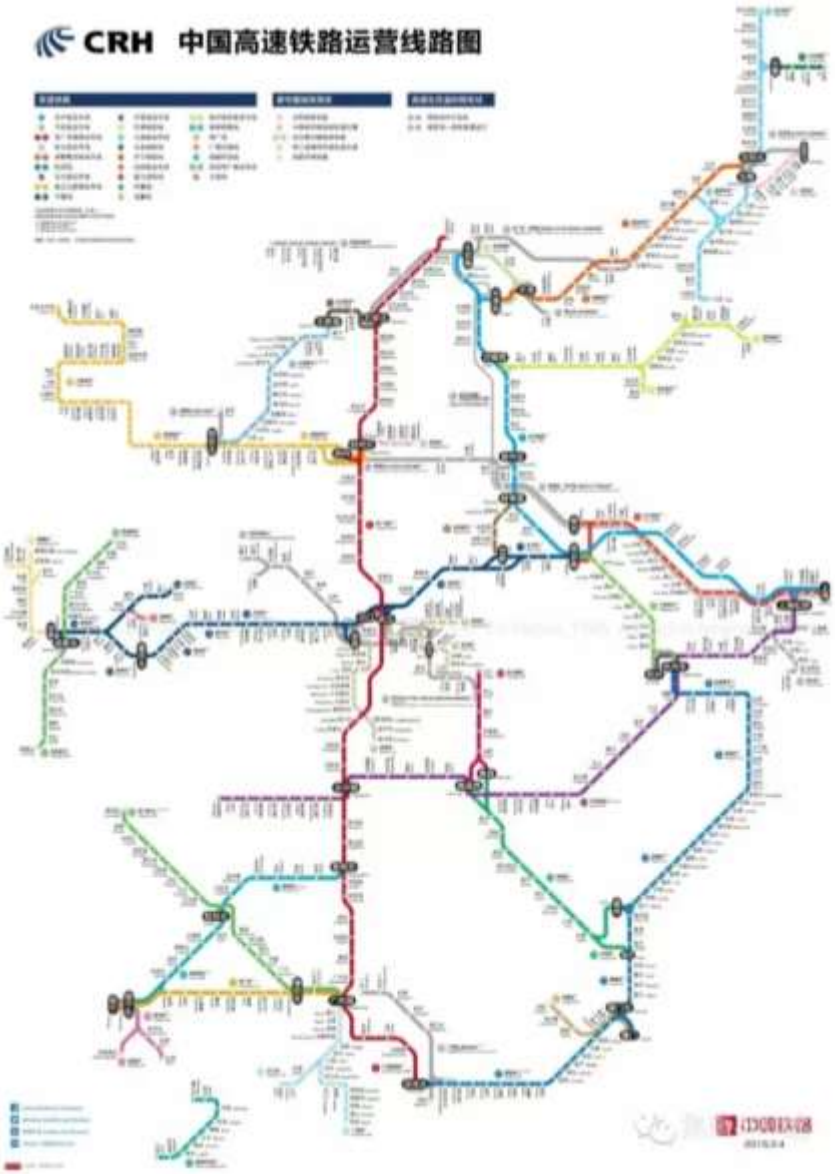
- showcasing: 100 pilot/1341 vocational colleges and 200 pilot/11500 senior secondary vocational schools are nominated;
- learning workplaces for vocational skills development
- courses for rural migrant workers are organized,
- Skills training projects for young employees
- Apprenticeship
- 2000 universities within enterprises since 1993

7 important sectors for employment

Recruitments by sectors in 2nd quarter of 2012-2016 in 98 cities



III. Personnel structure in key-industries



1.High-speed rail: in less than 10 years, China has built the world's longest national network of over 20,000 km, a length representing 60% of the world's high-speed rail. The network will reach 30,000 km in 2020.

2.Automobile industry: China has the biggest in the world with 120 automobile factories and over 500 automobile remodeling factories.

3.Electronic and information: China has the largest electronic and information industry in the world. Some software enterprises, information technology services and internet companies are at the forefront of the world. In 2015, the number of electronic and information enterprises reaches 34000, with 17 million people and over 20 million in 2020.

Some findings

high-speed rail(6+4): matching through in-house sophisticated training methods for skilled workers ; No new skills in the near future. Education system try to match.

Electronics/information(5+23+17): specialties match well with 36 in universities, 47 in junior colleges, 24 in secondary, enrolling 5.45 million; need less graduated from vocational high schools.

Autos(6+6): lack of people in R&D with operational abilities; urgent need for skilled people specialized in sale and after-sales service , auto culture, auto sports and foreign quality control system for Chinese spare parts. Mismatch between education and industry

Some common issues from the study:

- Important lack of high-level technical personnel with innovation talent, multi-disciplinary background, knowledge of new technology, and international vision;
- Reduction of personnel with automation;
- Schools need to be reformed profoundly to improve teaching method, content updating, practice experience.
- criteria for specialties should be updated according to the changes of technology and demands
- suggestion for a mechanism to create a chain reaction among teaching content adjustment, enterprises needs and new progress of technology

IV. Main challenges

1. **Mismatch persisting**

Unemployment risk is increasing.

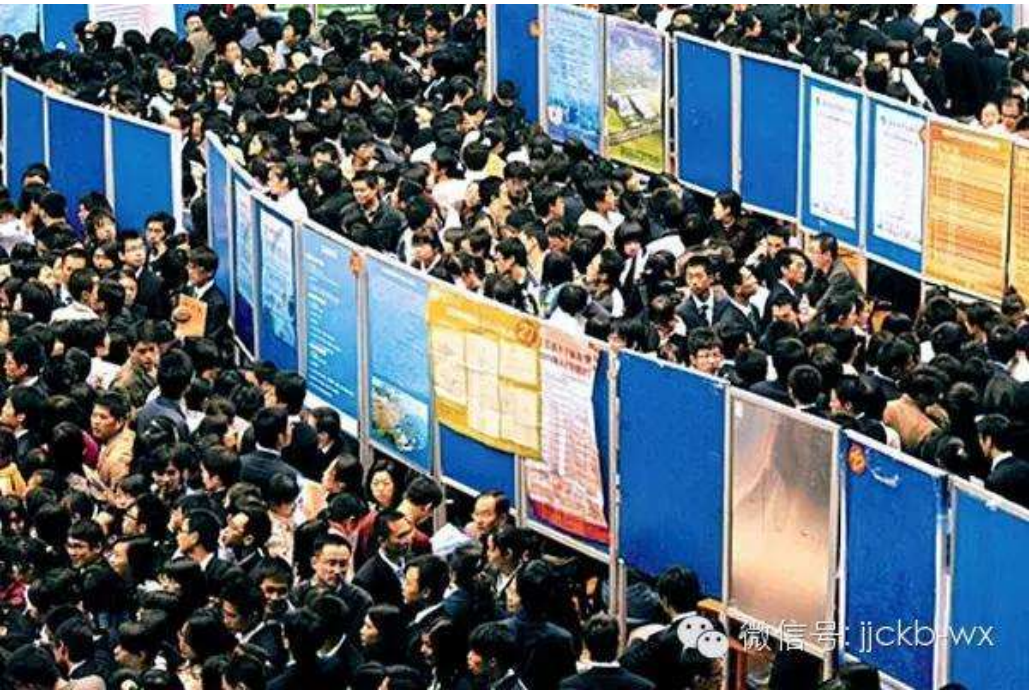
- **constant restructuring of economy** since 1978:

Transformation and upgrading of industries; Energy-saving, emission-reduction, quality-improving , efficiency-increasing;

- **Economic downward pressure** Economic growth at 6.7%

	primary	secondary	tertiary
Sector value-added (%GDP) in 2015	9%	40.5%	50.5%
Sector employment in 2014	29.5%	29.9%	40.6%

30% of migrant farmers(277million in 2015) trained;
2/3 students newly graduated(7.65 million in 2016) employed.



2. Perception: a strong culture for academic success

Who has a technician certificate?
High wages
Recruit 5 highly skilled workers

Bachelor , Double Bachelors,
Masters, Art degree

3. Involvement of enterprises

Trade unions or associations are not involved in administration councils of vocational schools. But they should have been the main collaborative force in school running, program and specialties, teaching criteria, textbooks, examination, evaluation, etc. Enterprises are not interested in participating in training and apprenticeship;

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