

# 中国区域可计算一般均衡模型

## The regional CGE model for China

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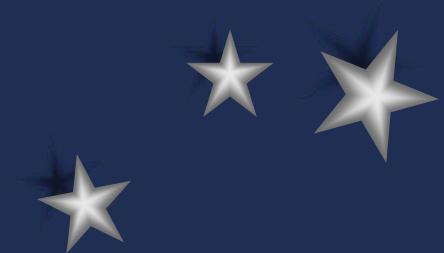
2004年5月  
May. 2004



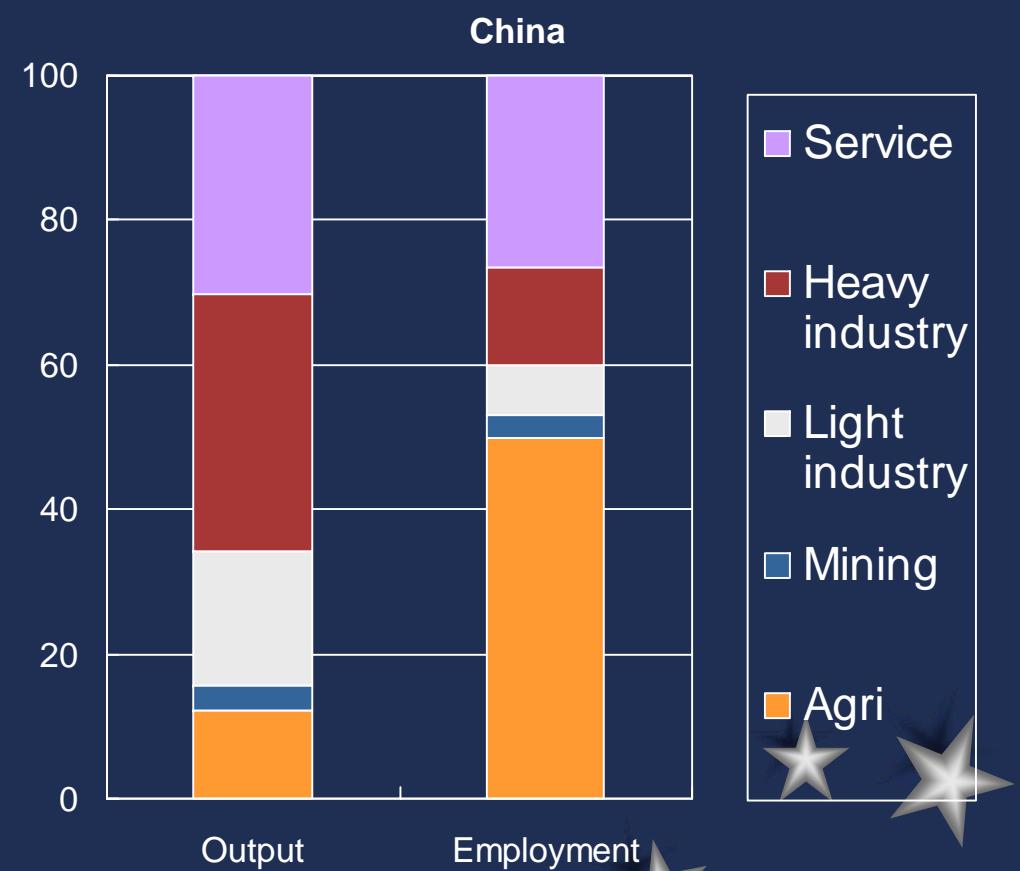
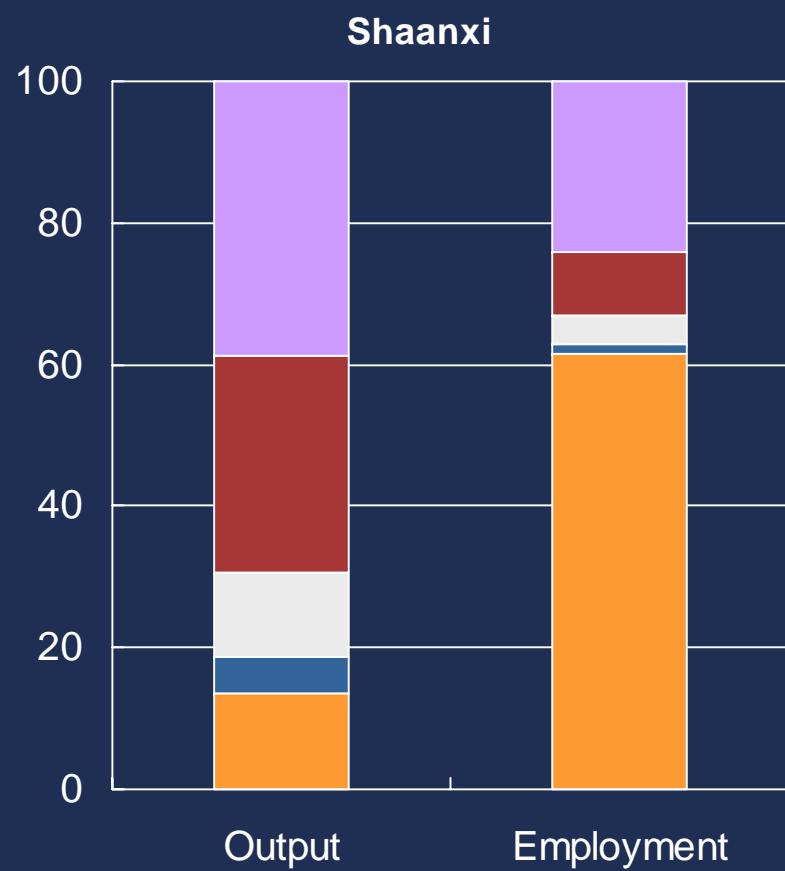
# The regional dimension

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- Shaanxi Province
- The Rest of China

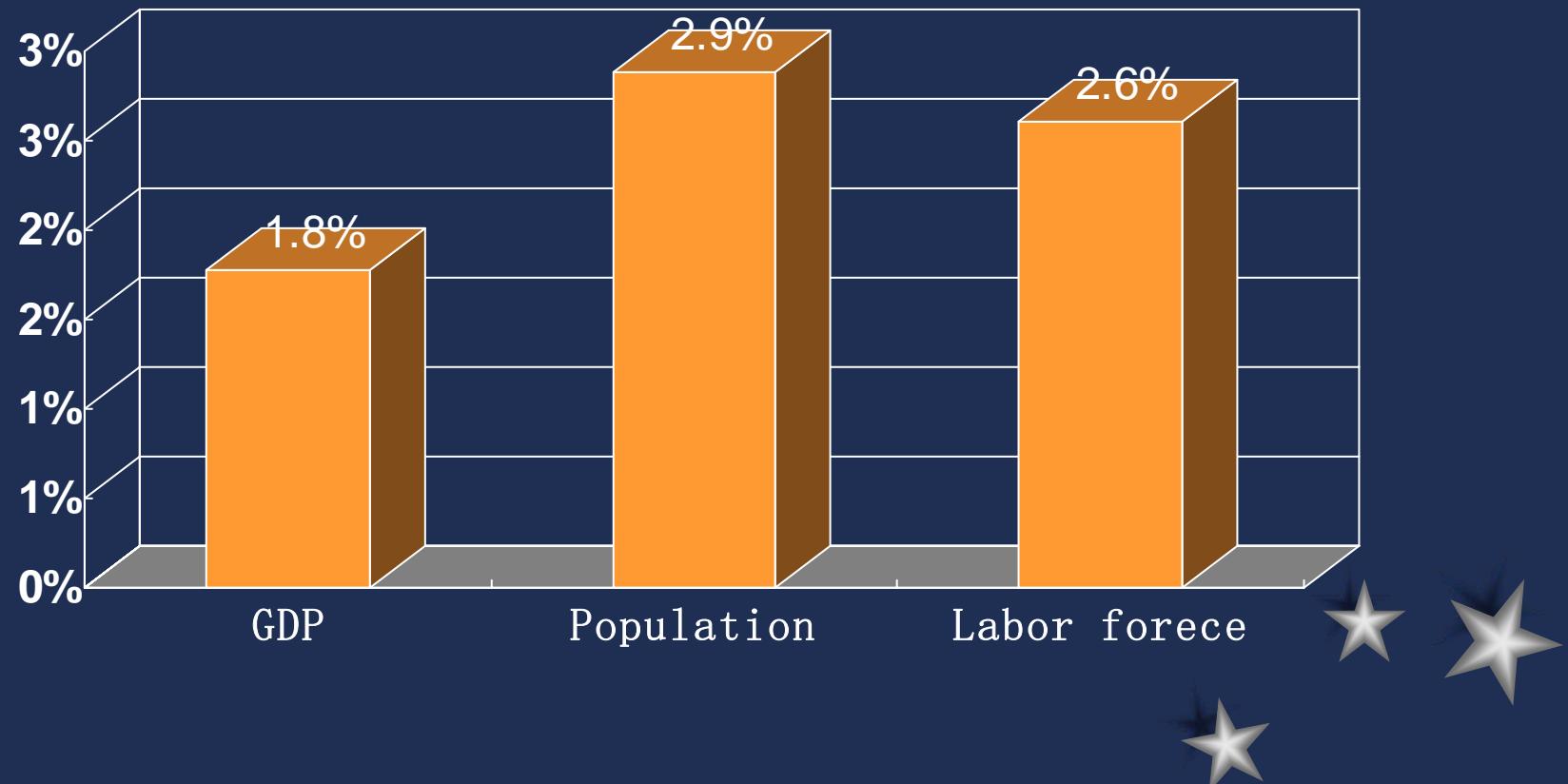


# Sectoral structure of output and employment (%)



# Factor endowment

Shaanxi as % of China



## The position of Shaanxi in the Western development

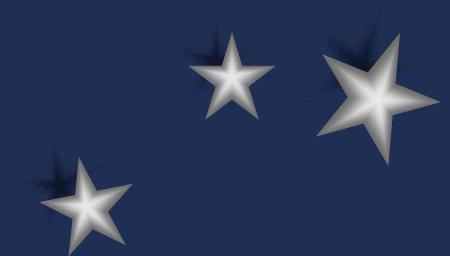
- The economic size and the growth rate are at the forefront, but the living standard of the people is relatively low in the western region.

序号	指 标 Indices	陕 西 Shaanxi	西 部 West	全 国 China	在 西 部 的 位 次 Rank in West	在 全 国 的 位 次 Rank in China
1	G D P ( 亿 元 ) G D P ( 1 0 0 m illion ) (2 0 0 1 )	1 8 4 4	1 8 2 4 8	9 5 9 3 3	4	2 0
2	人 均 G D P ( 元 ) Per Capita G D P ( R M B )	5 0 2 4	5 0 0 7	7 5 4 3	8	2 7
3	1 9 9 6 — 2 0 0 1 年 G D P 增 长 率 ( % ) G D P G r o w t h R a t e ( % ) (1 9 9 6 ~ 2 0 0 1 )	9 . 1 7		1 0 . 1 9	4	1 7
4	1 9 9 9 年 工 业 增 加 值 占 全 国 的 比 重 ( % ) Ratio of Shaanxi or the West industry value-added in China ( % ) (1 9 9 9 )	1 . 6 0	1 1 . 6 8	1 0 0 . 0 0	7	2 6
5	2 0 0 1 年 城 镇 居 民 平 均 每 人 全 年 家 庭 可 支 配 收 入 ( 元 ) Per Capita Dispos able Income of U r b a n H o u s e h o l d s ( R M B ) (2 0 0 1 )	5 4 8 3 . 7	6 1 7 1 . 8	6 8 5 9 . 6	1 0	2 5
6	2 0 0 1 年 农 村 居 民 家 庭 平 均 每 人 纯 收 入 ( 元 ) Per Capita Annual Net Income ( R M B ) (2 0 0 1 )	1 4 9 0 . 8	1 6 9 2 . 8	2 3 6 6 . 4	1 0	2 9

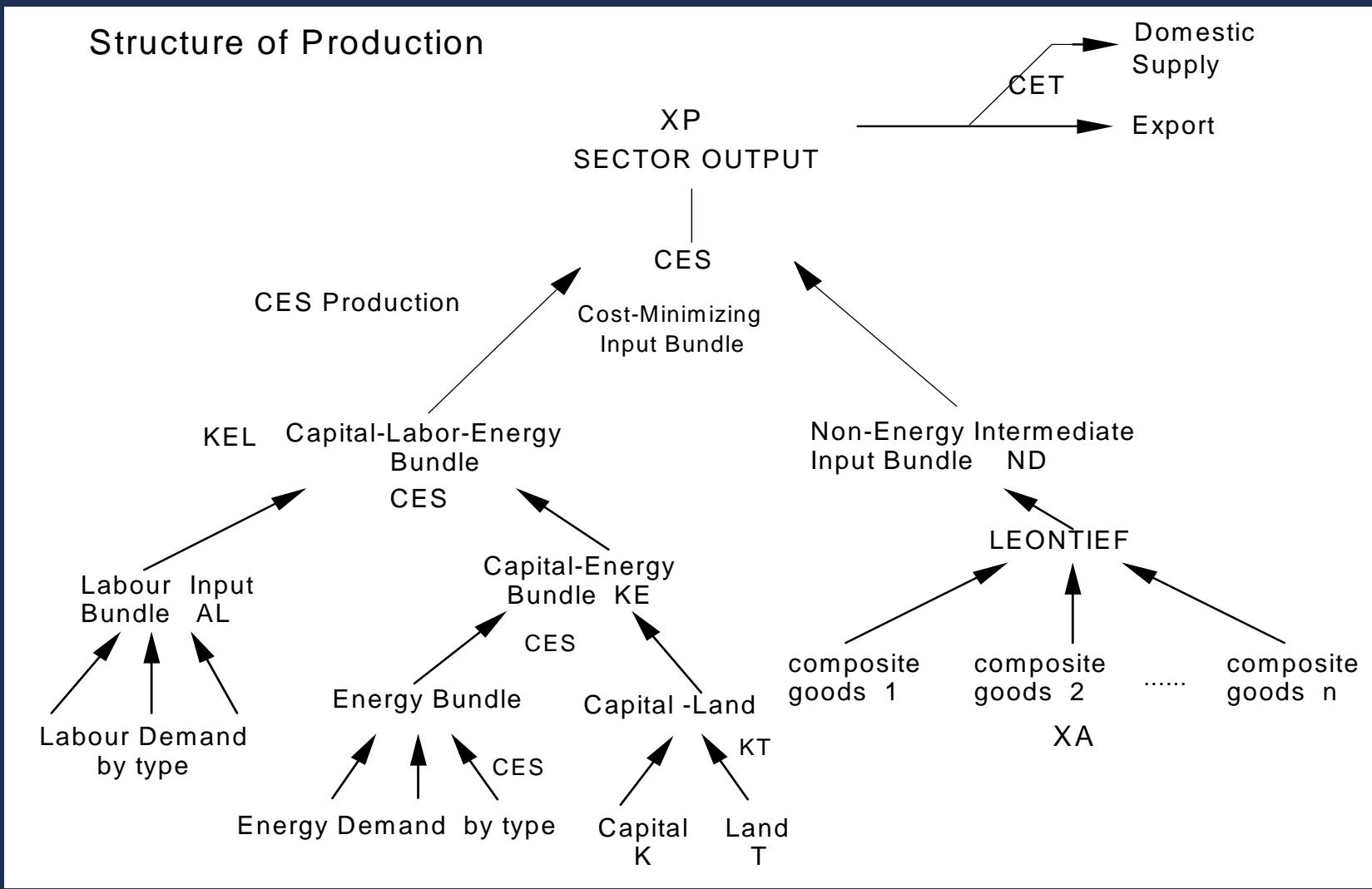
# The feature of the model

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- 2 Regions - Shaanxi province and rest of China
- 32 production sector and 2 representative household by rural and urban
- 5 production factors
  - *agricultural land, capital, agricultural labor, production worker, and professionals*
- Comparative static



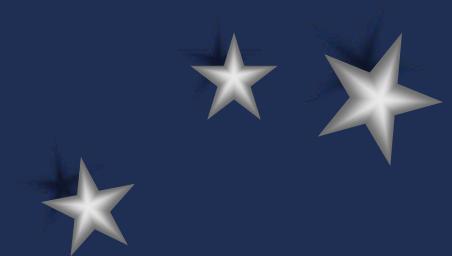
# Production and Factor market



# Production and Factor market

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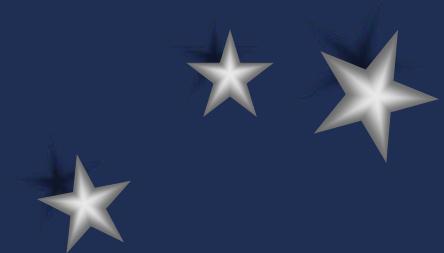
- Capital and labor forces are fully mobile across sectors
- imperfect interregional factor mobility



# Interregional Trade and International Trade

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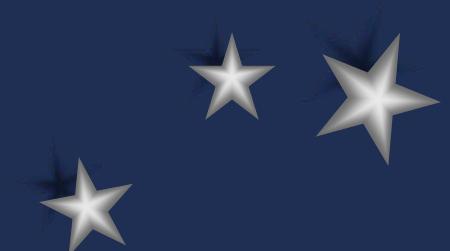
- **International Trade**
  - Import
  - Export
- **Interregional Trade**
  - Inflow
  - Outflow



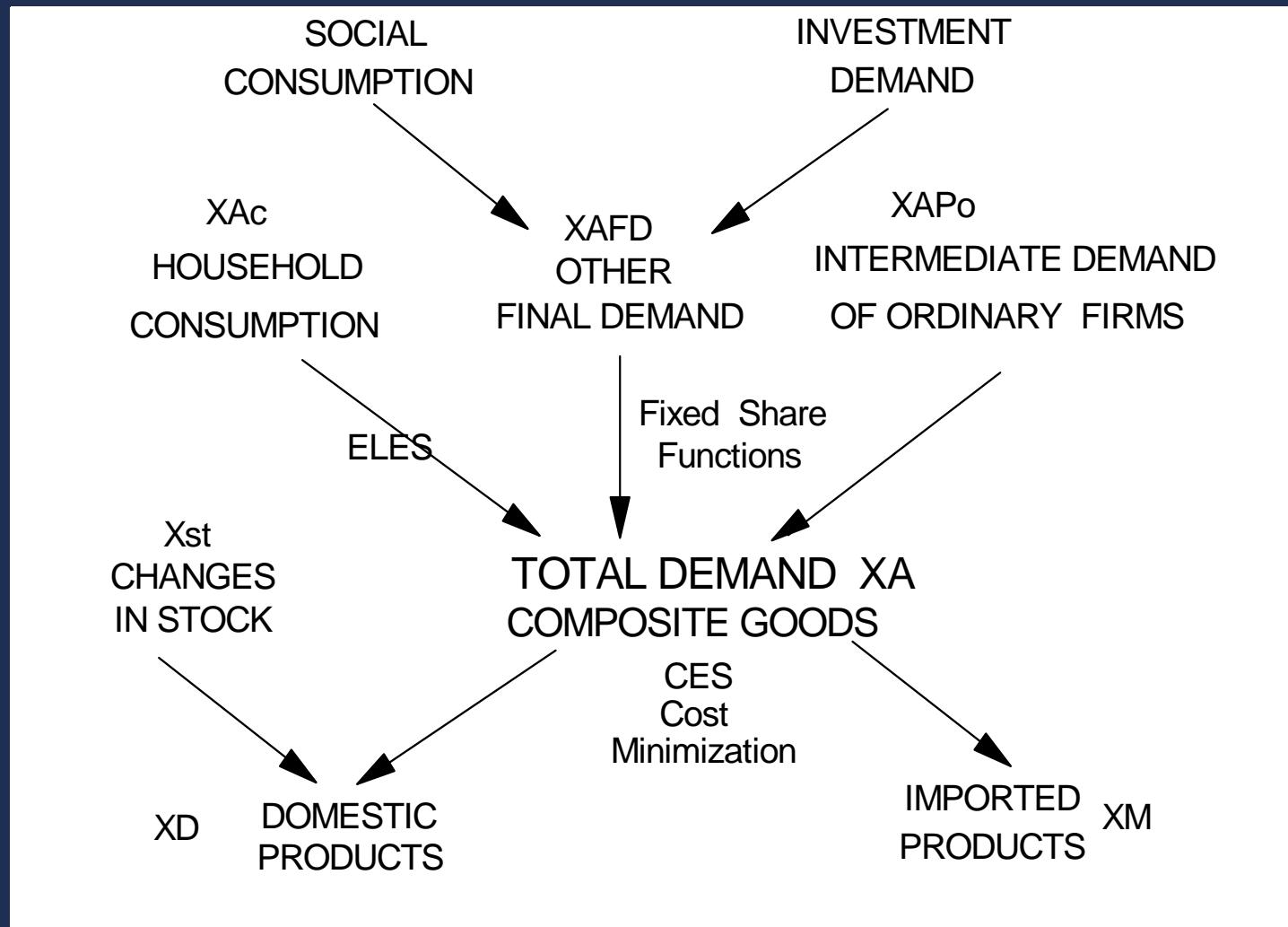
# Income Distribution and Demands

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- Capital revenues
- Land revenues
- Labor income
- Tax
- Transfers



# Income Distribution and Demands



# Two governments

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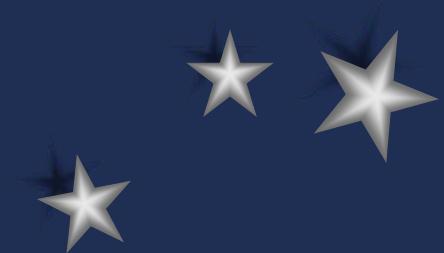
- Local government
- Central government
- Extra-budget Public Sector



# Macro Closure

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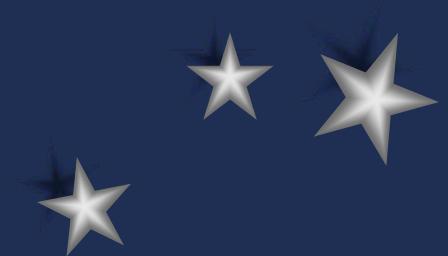
- the government budget
- aggregate savings and investment
- the balance of payments.



# Date

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- the benchmark data set: two regional SAM
  - Shaanxi SAM
  - ROC SAM
- The benchmark year: 1997



# The macro SAM for Shaanxi, 1997

		1	2	3	4	5	6	7	8	9	10	11	Total	
		Commodity(40)	Activity(40)	Factors(2)	Huseholds	Enterprises	Local government	Central government	Extra-budget/system	Capital Account	ROC	ROW		
1	Commodity(40)		20,647,074		6,563,552		1,002,242	237,666	1,042,392	5,461,703			34,954,629	
2	Activity(40)		26,774,654					31,258			6,279,429	853435	33,938,776	
3	Factors (2)			11,649,142									11,649,142	
4	Huseholds				8,353,665		929,215	236,426					9,519,306	
5	Enterprises					3,295,477							3,295,477	
6	Local Government					597,624	206,303	83,233	600,735				1,487,895	
7	Center Government					62,908	538,403	38,324	7,962				647,596	
8	Extra-budget/system					506,534	358,381	177,477					1,042,392	
9	Capital Account						2,391,069	2,067,228	241,265	-222,063		1,274,653	-290,450	5,461,703
10	Rest of the Country					7,554,082							7,554,082	
11	Rest of the World					562,985							562,985	
	Total		34,954,629	33,938,776	11,649,142	9,519,306	3,295,477	1,487,895	647,596	1,042,392	5,461,703	7,554,082	562,985	

# Tax system

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- The current tax system embody a number of serious distortions
  - Nominal tax burdens are high
  - Compliance rate is low
  - Inequality or unfairness across ownership, industry and region



## *An example - estimated VAT rates by sector*



# Simulations Design

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- Scenario 1

Trade liberalization: elimination of trade-related distortion

- zero tariff
- unification of import VAT rates across sectors

- Scenario 2:

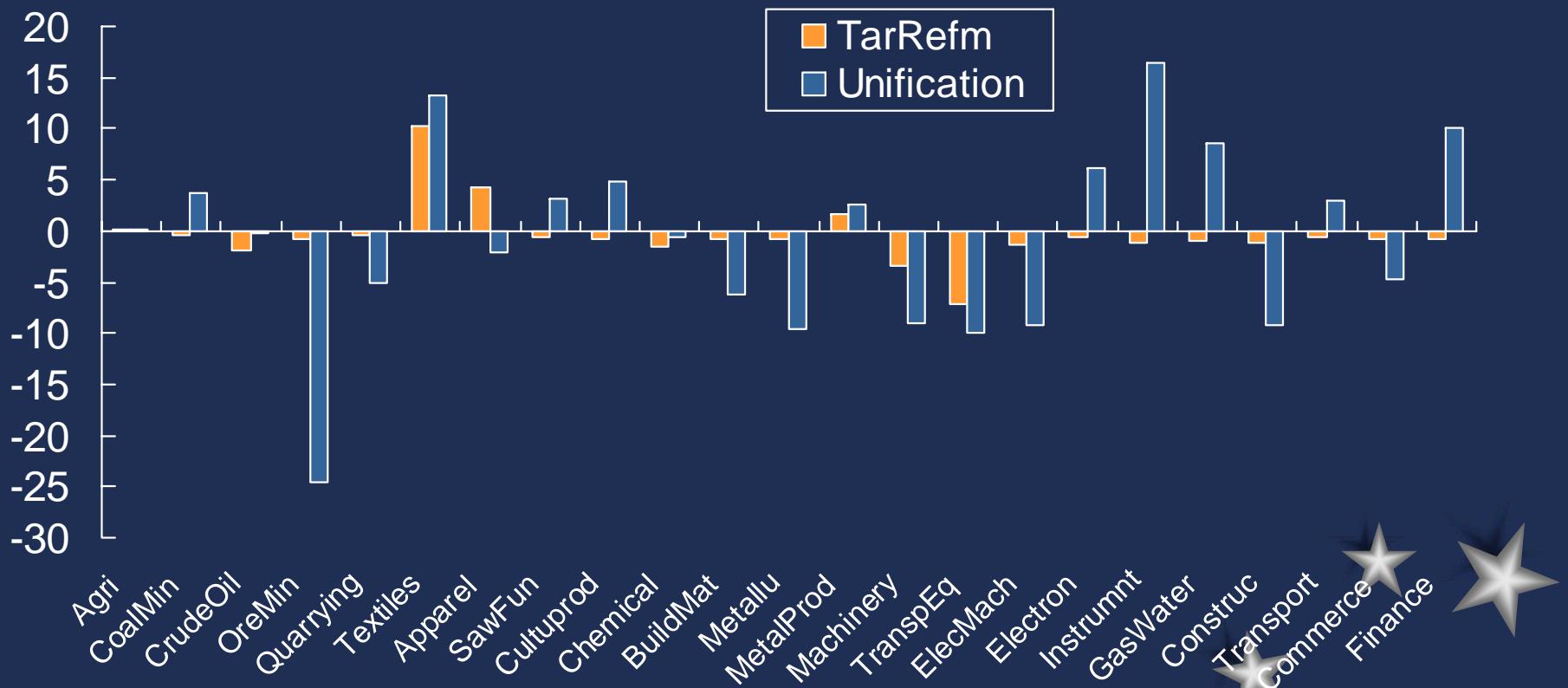
Domestic tax reform: elimination of sectoral distortion of current tax/subsidy system

- unification of rates of VAT, other indirect tax, production subsidy and fees across sectors



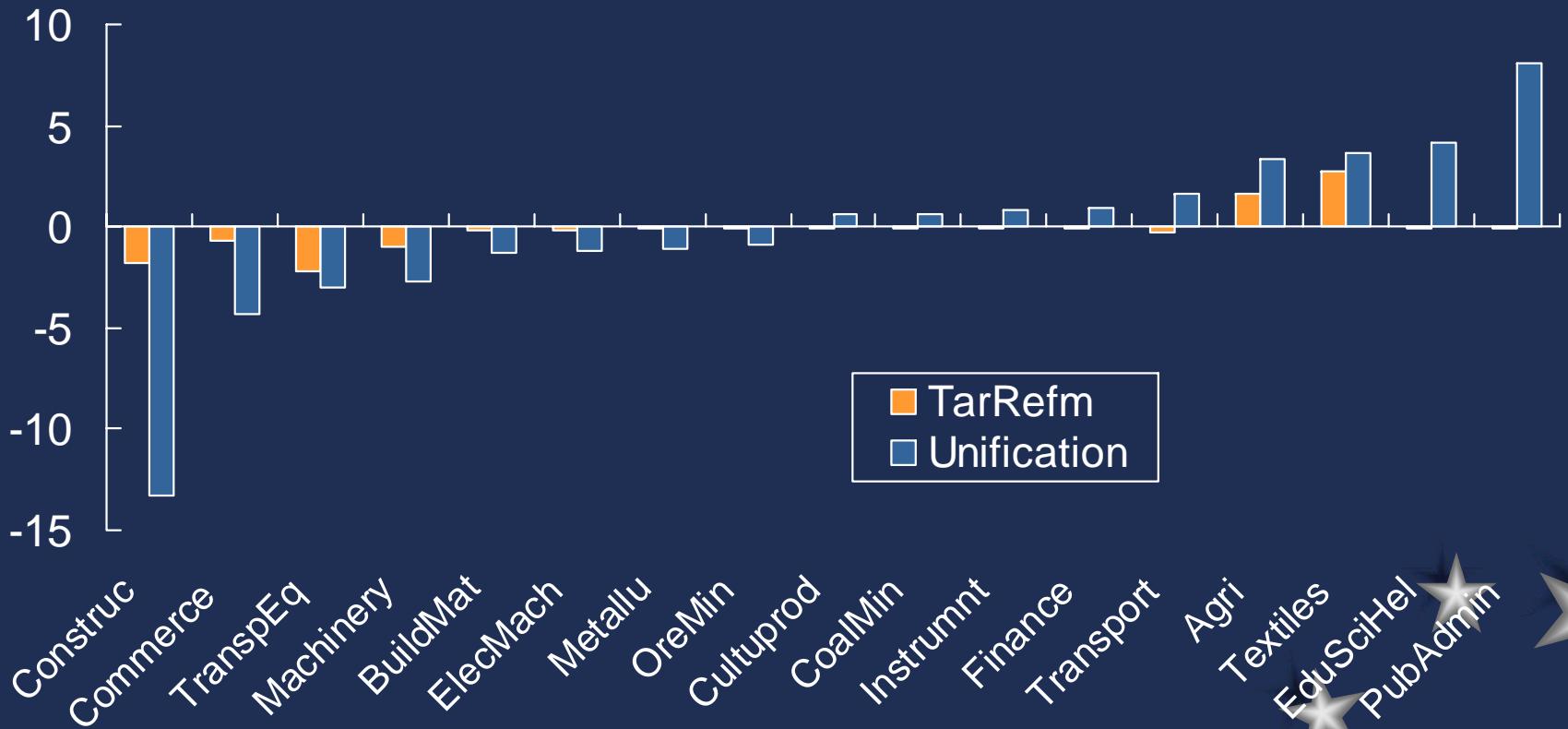
# Impact on sectoral output of Shaanxi

Percent change relative to base case



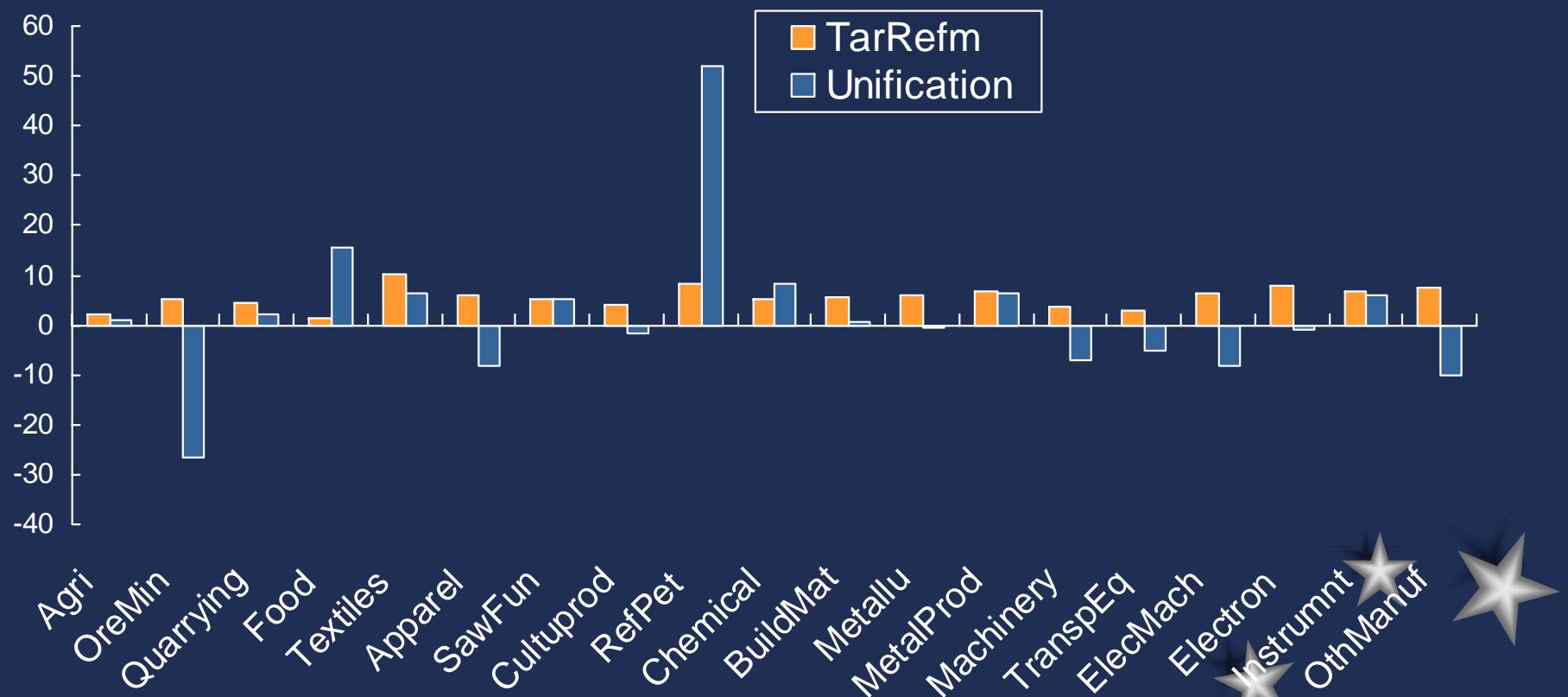
# Impact on employment of Shaanxi

Change relative to baseyear (10000 person)



# Impact on sectoral exports of Shaanxi

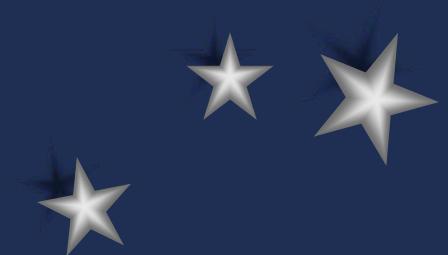
Percent change relative to base case



# Conclusions

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- The current tax system is in favor of mining and heavy industry in Shaanxi province.
- Removal of the sectoral distortion in tax system would promote the development of labor intensive, light industry sector in Shaanxi.



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谢谢！

**THANK YOU VERY MUCH!**

