

Structural change, labor productivity and globalization

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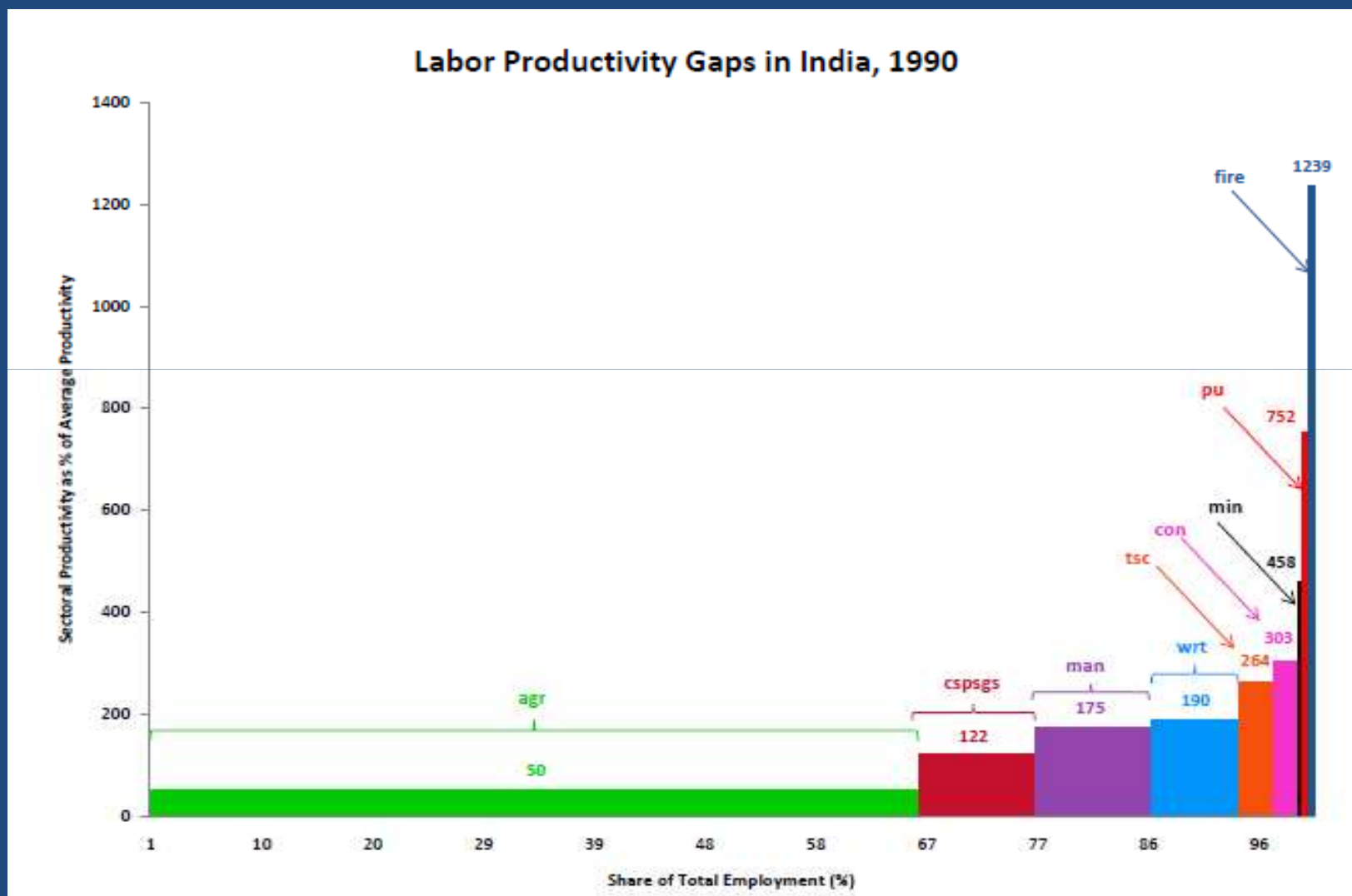
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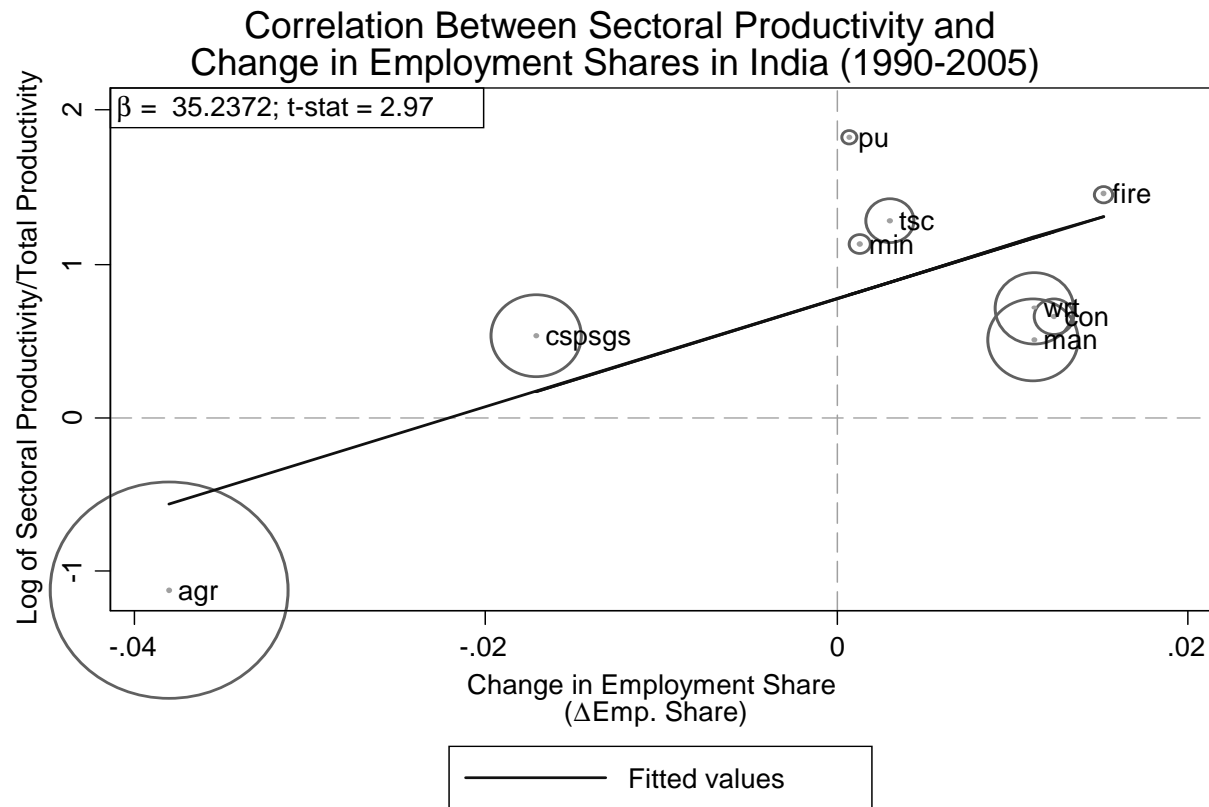
What do economists
usually mean by structural
transformation?

structural transformation →
dual economy models
a la Arthur Lewis →
agriculture to manufacturing →
economic growth

Consider India in 1990



India fits the Lewis Model



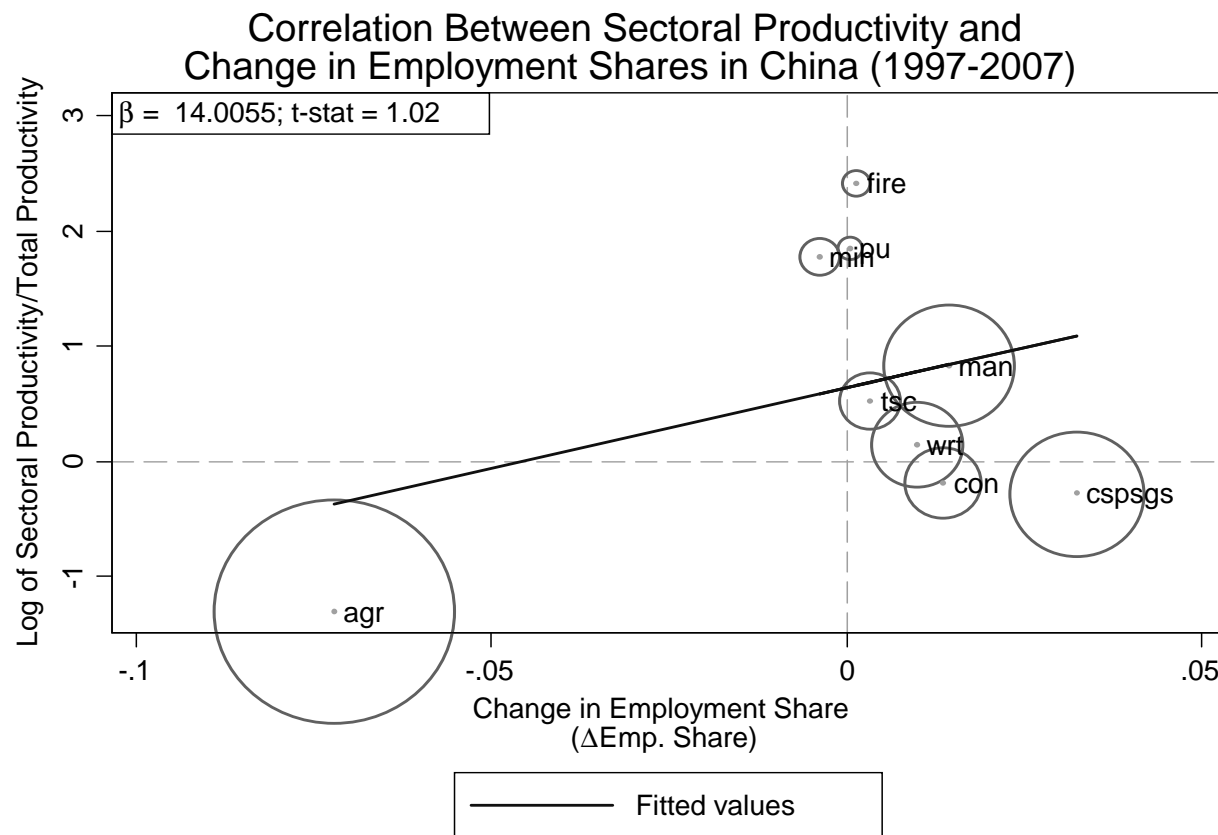
*Note: Size of circle represents employment share in 1990

**Note: β denotes coeff. of independent variable in regression equation:

$$\ln(p/P) = \alpha + \beta \Delta \text{Emp. Share}$$

Source: Authors' calculations with data from Timmer and de Vries (2009)

So does China



*Note: Size of circle represents employment share in 1997

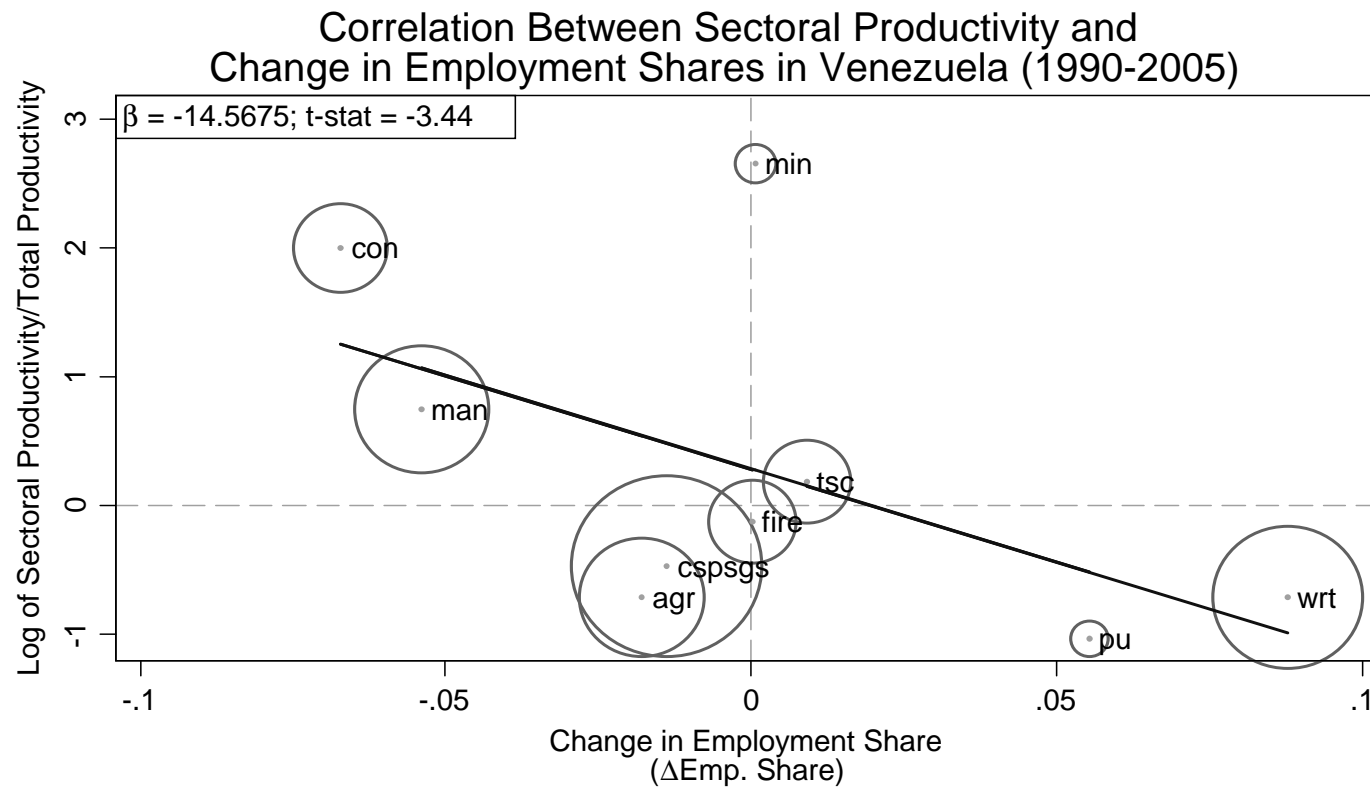
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Source: Authors' calculations with data from China's National Bureau of Statistics

So, what does the rest of the
world look like?

Venezuela



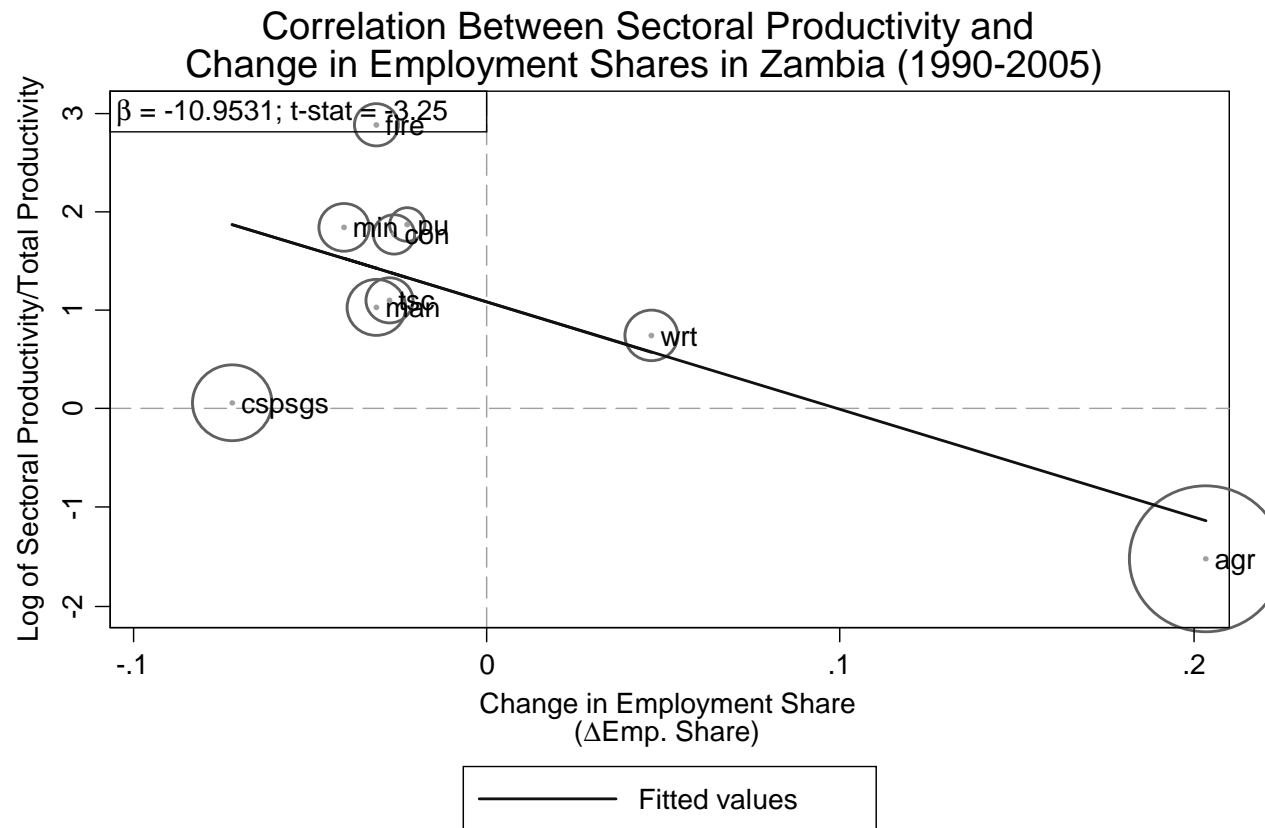
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Zambia



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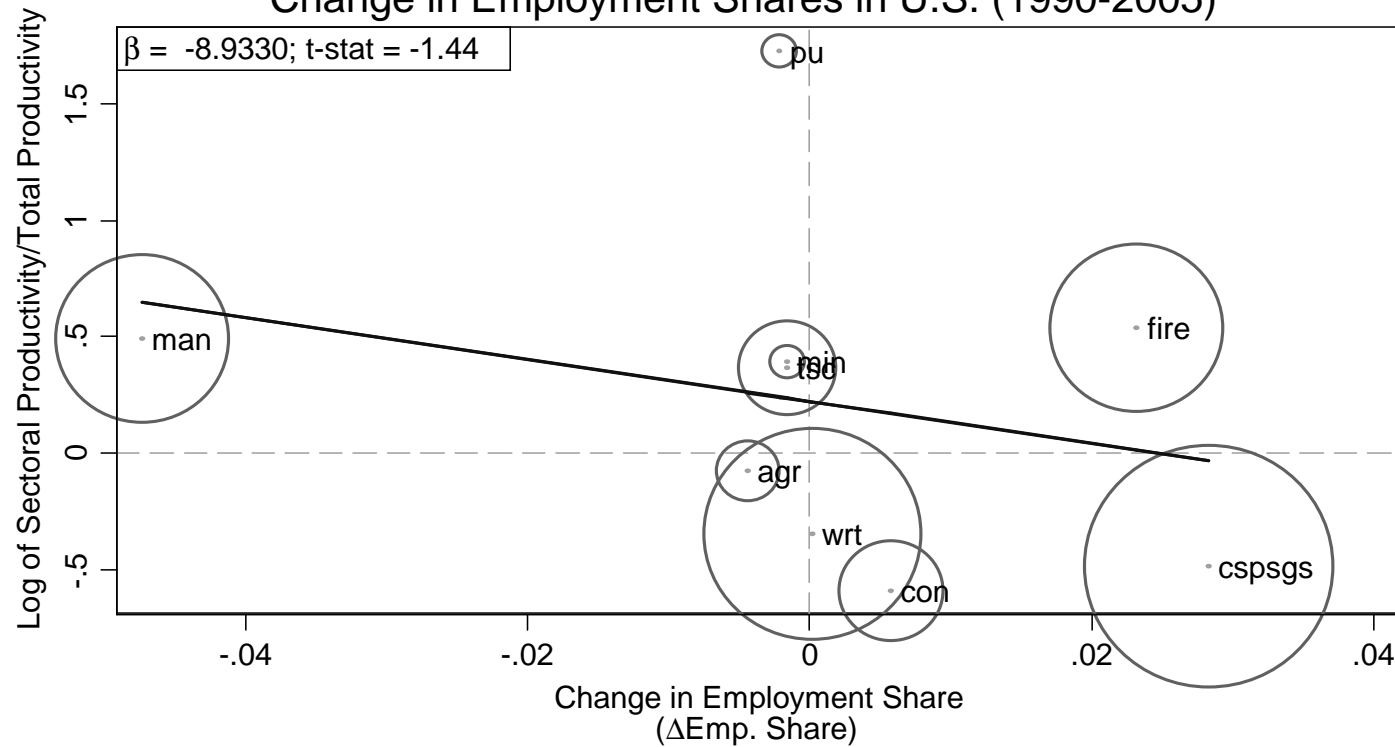
**Note: β denotes coeff. of independent variable in regression equation:

$$\ln(p/P) = \alpha + \beta \Delta \text{Emp. Share}$$

Source: Authors' calculations with data from CSO, Bank of Zambia, and ILO's KILM

United States

Correlation Between Sectoral Productivity and Change in Employment Shares in U.S. (1990-2005)



*Note: Size of circle represents employment share in 1990

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Source: Author's calculations with data from Timmer and de Vries (2007)

How important has structural change been as a determinant of labor productivity and to what extent does it explain regional patterns of growth?

Labor productivity growth decomposition

$$\Delta Y_t = \sum_{i=n} \theta_{i,t-k} \Delta y_{i,t} + \sum_{i=n} y_{i,t} \Delta \theta_{i,t}$$

↑
within

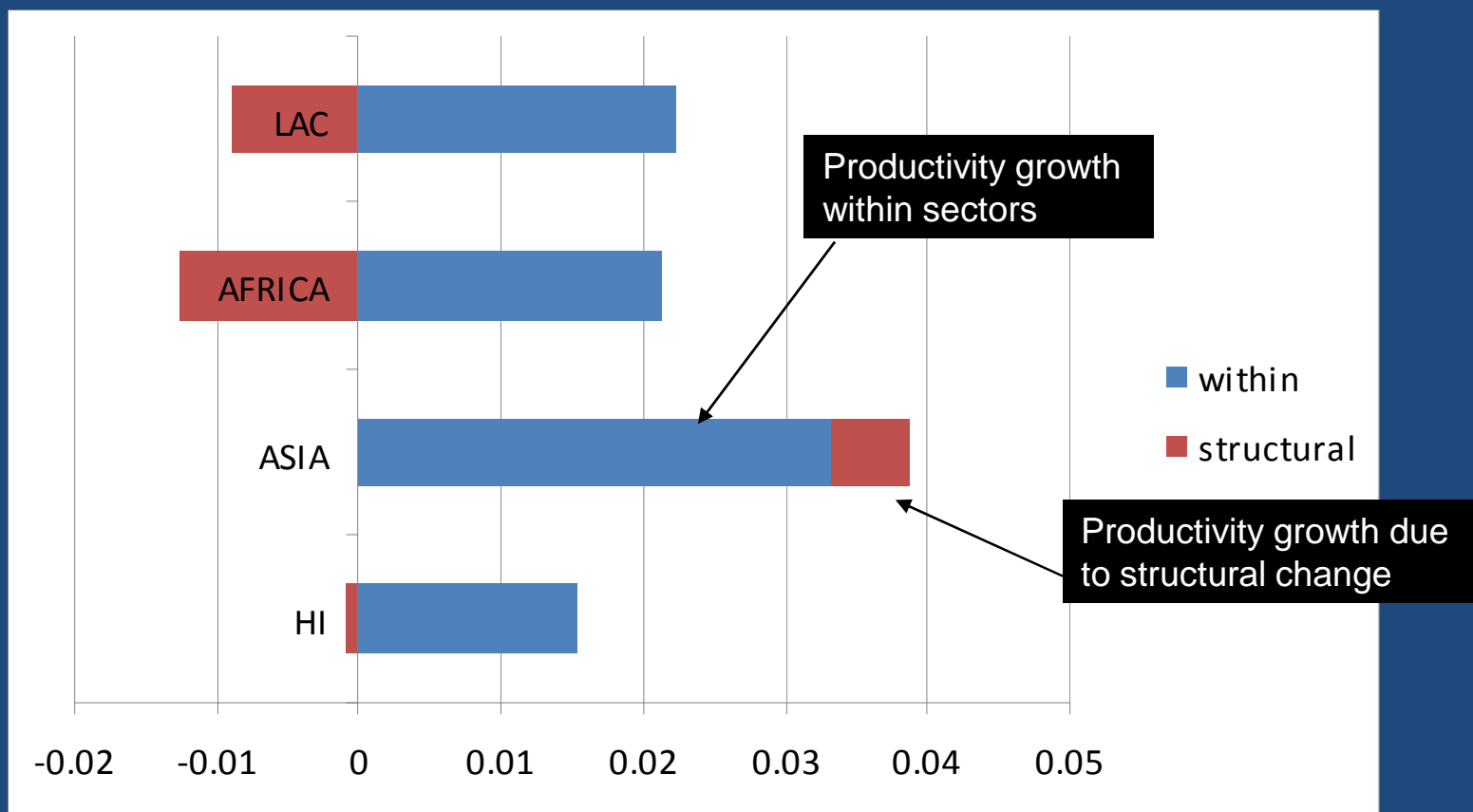
↑
structural change

Y refers to aggregate labor productivity, y is sectoral labor productivity, θ is employment share, Δ is the first-difference operator, i indexes sectors, $t-k$ and t stand for initial and final years.

Data

- Start from Groningen Growth and Development Center (GGDC) data base, which provides employment and real valued added statistics for 27 countries disaggregated into 10 sectors (Timmer and de Vries, 2007; 2009)
 - We converted local currency value added at 2000 prices to dollars using 2000 PPP exchange rates.
- Complement with data from national sources for 11 additional countries (China, Turkey, and several African countries)
- For the most part, VA comes from national income accounts, while level and structure of employment come from population censuses (and other household surveys)
 - Since employment data are not based on labor force or industrial surveys (save for extrapolation purposes), coverage of informal sector should be less problematic than otherwise

Decomposition of productivity growth, by region: 1990 - 2005



Decomposition of productivity growth by country group, 1990-2005

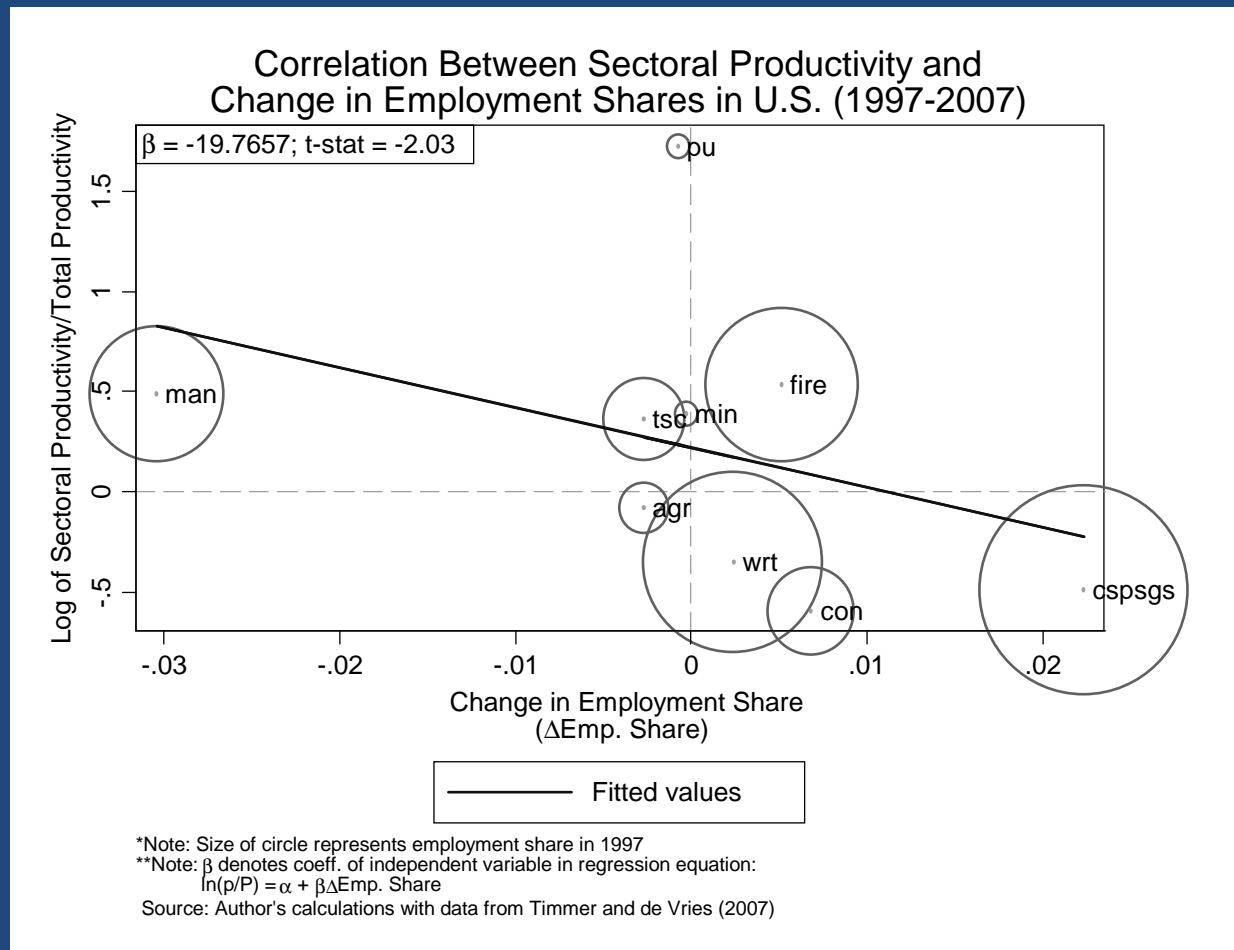
What's going on? Some possibilities:

- Some countries have more “surplus labor” in agriculture than others
- Role of comparative advantage: primary products versus manufactures
- Labor market rigidity: spatial or sectoral barriers to labor mobility
- Trade/industrial/currency policies

But each country has its' own story

- Need to complement with more micro analysis
- Consider the U.S. for a moment
- Ebenstein, Harrison, McMillan and Phillips (2011) use data from current population surveys combined with data on trade and offshoring to show that:
 - Globalization is associated with a reallocation of workers across sectors and occupations
 - Reallocation across sectors is associated with a 2-4% decline in wages and if accompanied by a switch in occupation a 3-11% decline in wages
 - Effects are most pronounced for the period 1997 to 2002

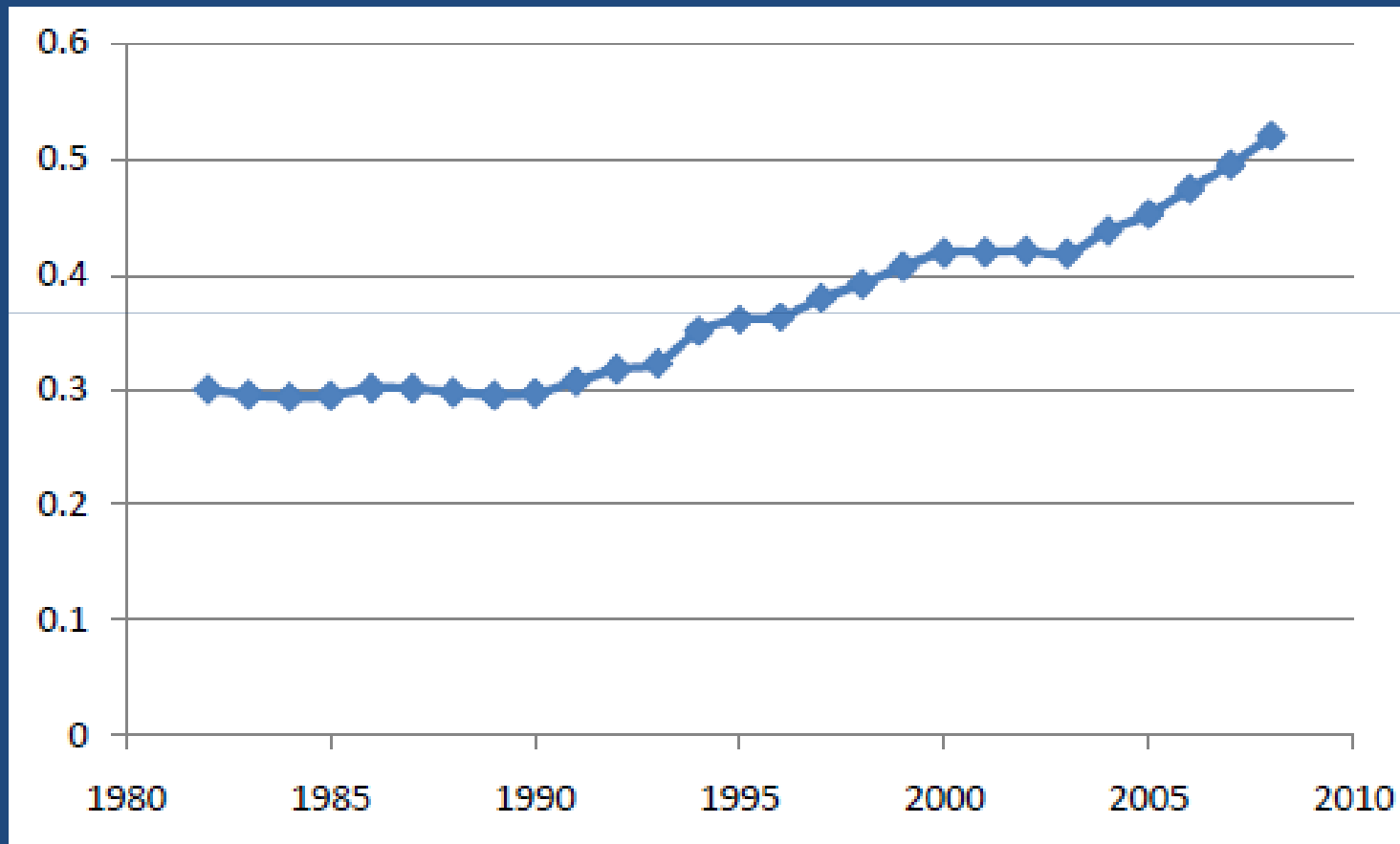
U.S. Structural Change 1997-2007



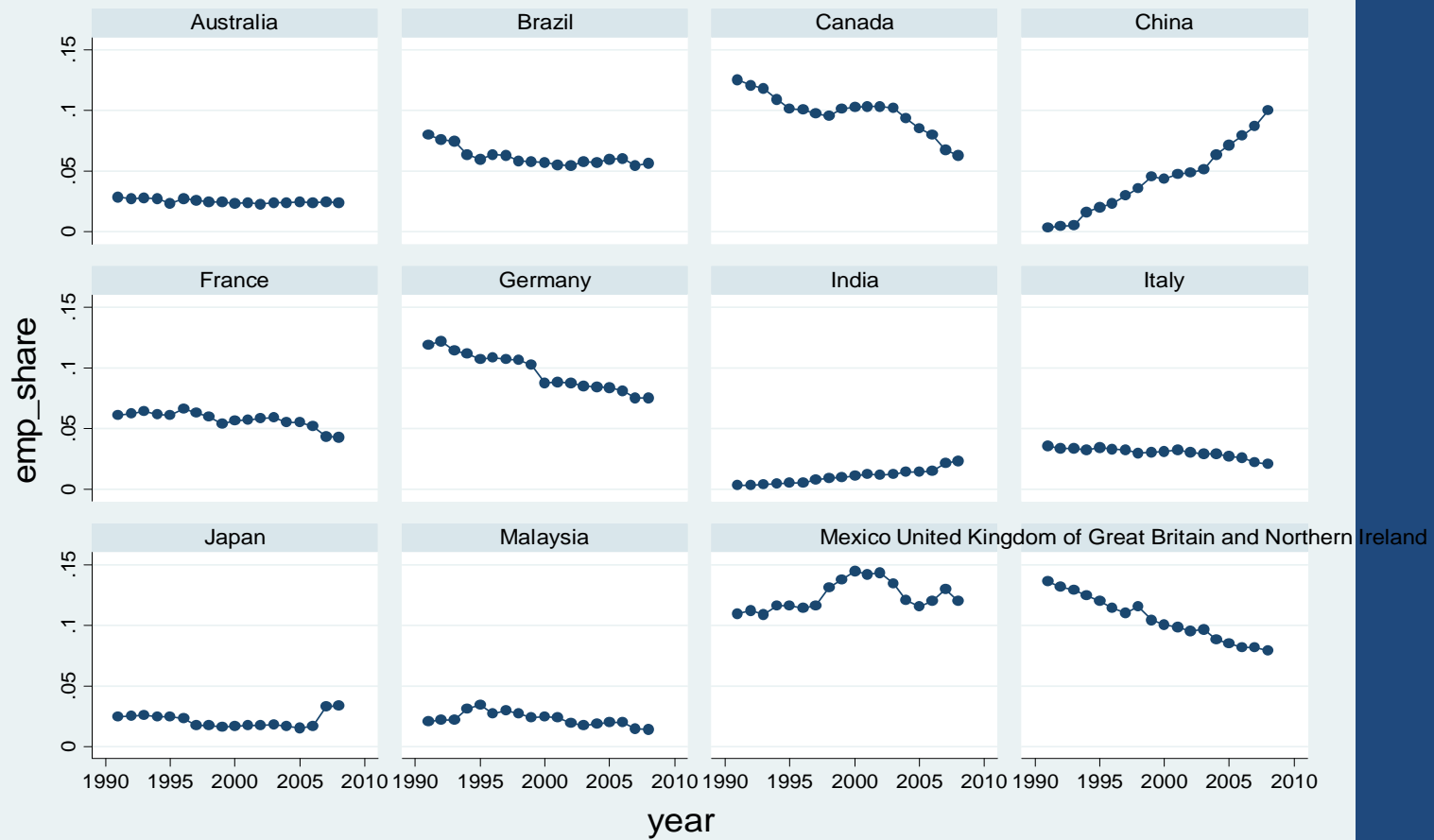
What is going on in the U.S.?

- We should be able to explain – lots of data
- Why does 1997-2007 look so bad?
- Why loss of jobs in manufacturing?
- Technology?
- Changing demand patterns?
- Globalization?

Offshore Employment by U.S. Firms in Developing Countries

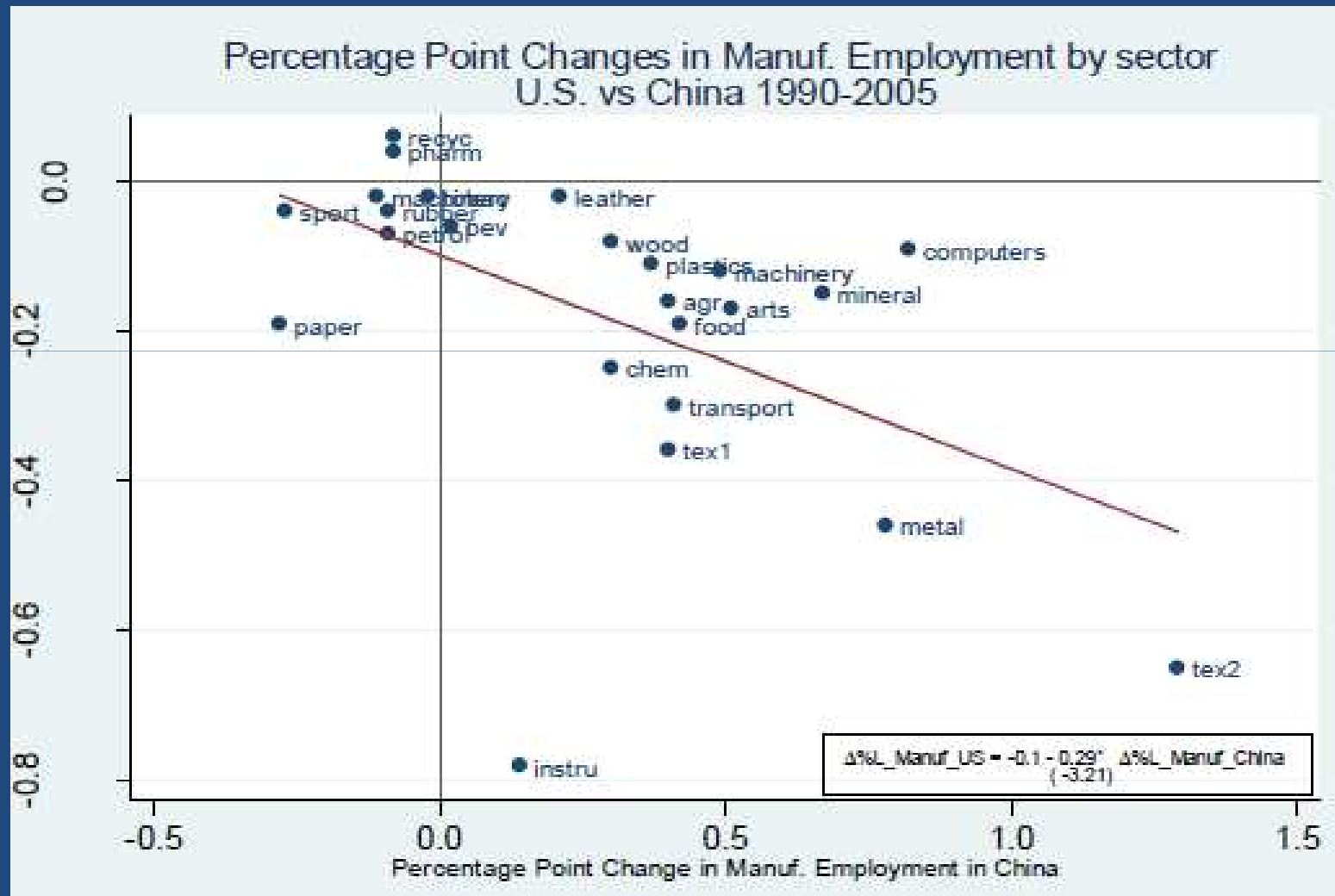


Pattern is driven by China



Graphs by Country or area name

Employment Changes: U.S. & China



Conclusions

- The mechanisms by which “globalization” has an impact on labor have not been well understood
- Most research on globalization and labor market outcomes has focused on manufacturing alone
- I hope that I have convinced you that a more complete understanding of the impact of globalization on labor market outcomes calls for an economy-wide perspective
- For developing countries, the presence of large inter-sectoral productivity gaps ensures significant potential for rapid economic growth but fulfilling this potential requires an ongoing process of diversification and structural change
- China OEZ, Zambia, Pakistan, Egypt, Benin, Nigeria, Ethiopia, Russia, Vietnam, S. Korea, Cambodia, Thailand, Indonesia, Tanzania (Brautigam and Xiaoyang, 2011)