



Dynamic Globalization and Its Potentially Alarming Prospects for Low-Wage Workers

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Overview

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2. The Simulation Model
3. Initial Equilibrium and Baseline Transition Path
4. Simulation Results of...
 - ...Eliminating Trade with China and India
 - ...Successful Education Policy in China and India
5. Conclusions

Motivation

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- ▶ Income share of the top U.S. income decile increased from 27 percent in the 1960s to 45 percent today (*Gordon/Dew-Becker, 2007*).

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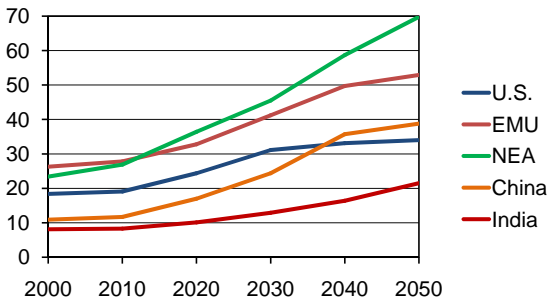
- ▶ Income share of the top U.S. income decile increased from 27 percent in the 1960s to 45 percent today (*Gordon/Dew-Becker, 2007*).
- ▶ Explanations in the literature:
 - ▶ Superstar-agglomeration economies, CEO manipulation (*Gordon/Dew-Becker, 2007; Lawrence, 2008*)
 - ▶ Skill-biased technical change (*Bound/Johnson, 1992; Hornstein et al., 2005*)
 - ▶ Real reductions in the minimum wage, changes in labor force composition (*Card/DiNardo, 2002; Lemieux, 2006*)
 - ▶ Globalization (*Feenstra/Hanson, 1996, 1999; Sachs/Shatz, 1996; Wood, 1998*)

How will wage inequality change in the future?

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► Worldwide demographic changes:

Old-age dependency ratios (Ages 65+/Ages 15-64)



Source: United Nations Population Division (2007)

► Worldwide differences in macroeconomic indicators:

| | GDP* | Trade Volume** | Consumption** | Investment** | Savings** | Growth (%) |
|-------|------|----------------|---------------|--------------|-----------|------------|
| USA | 12.5 | 26 | 70 | 19 | 13 | 3.2 |
| EMU | 10.0 | 39 | 57 | 21 | - | 1.3 |
| NEA | 5.7 | 28 | 57 | 23 | 23 | 2.6 |
| China | 2.2 | 69 | 39 | 43 | 50 | 10.2 |
| India | 0.8 | 45 | 59 | 32 | - | 9.2 |

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► Large supply of low-skilled workers in emerging economies like China and India

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- ▶ Model features:
 - ▶ 5 different regions (U.S., EMU, NEA, China and India)
 - ▶ 6 different production goods:
 - ▶ 4 consumption goods: services and housing (non-traded), low-tech and high-tech (traded)
 - ▶ non-traded public good
 - ▶ traded investment good
 - ▶ Heterogeneous labor inputs in production

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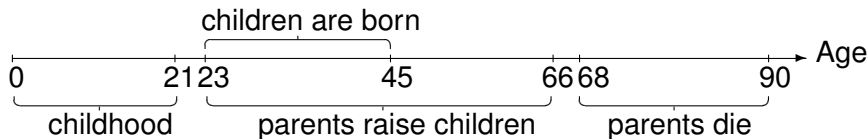
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- ▶ Individual life-cycle:



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- ▶ Utility in future periods is weighted by the survival probability.

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- ▶ Maximization of remaining lifetime utility w.r.t. the lifetime budget constraint yields the demand for leisure and for the four different consumption goods.

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- ▶ Profit maximization yields interest rate and skill-specific wages.

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- ▶ Social benefits are financed mainly by payroll taxes and in parts by general taxes.

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- ▶ In case of specialization domestic firms are assumed to employ offshore labor.

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- ▶ Time preference rates of successive Chinese and Indian cohorts are gradually increased to developed world's levels until 2030.

Macroeconomic structure in the year 2005

| | Model | | | | | Official | | | | |
|-------------------------|-------|------|------|-------|-------|----------|------|------|-------|-------|
| | U.S. | EMU | NEA | China | India | U.S. | EMU | NEA | China | India |
| Private consumption | 70.6 | 57.7 | 57.4 | 39.1 | 58.6 | 70.4 | 57.4 | 57.0 | 38.0 | 58.5 |
| Government expenditures | 15.8 | 20.5 | 18.1 | 13.9 | 11.5 | 15.9 | 20.5 | 18.1 | 13.9 | 11.5 |
| Investment | 21.2 | 19.1 | 17.7 | 35.0 | 32.5 | 19.1 | 20.6 | 23.3 | 42.6 | 31.6 |
| Trade Balance | -7.6 | 2.7 | 6.8 | 11.9 | -2.6 | -5.8 | 1.4 | 1.4 | 5.5 | -1.6 |
| Relative GDP levels | 1.00 | 0.86 | 0.47 | 0.19 | 0.08 | 1.00 | 0.81 | 0.46 | 0.18 | 0.06 |

 Macroeconomic Developments in the Baseline Path

| | Year | GDP | Capital Stock | Labor Demand | | | Payroll Tax Rate |
|--------------|-------------|-------------|------------------|--------------|-------------|-------------|------------------------|
| | | | | Low | Middle | High | |
| U.S. | 2005 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 15.5 |
| | 2010 | 1.11 | 1.11 | 1.10 | 1.10 | 1.11 | 16.5 |
| | 2020 | 1.27 | 1.27 | 1.24 | 1.26 | 1.30 | 21.4 |
| | 2030 | 1.63 | 1.71 | 1.60 | 1.56 | 1.65 | 24.6 |
| | 2040 | 2.16 | 2.33 | 2.17 | 2.03 | 2.13 | 23.3 |
| | 2050 | 2.76 | 3.08 | 2.79 | 2.54 | 2.65 | 22.6 |
| | 2075 | 3.63 | 3.71 | 3.78 | 3.51 | 3.66 | 26.2 |
| | 2100 | 4.61 | 4.55 | 5.11 | 4.56 | 4.67 | 28.4 |
| China | 2005 | 0.19 | 0.19 | 0.19 | 0.18 | 0.20 | 6.7 |
| | 2010 | 0.40 | 0.40 | 0.42 | 0.39 | 0.42 | 5.9 |
| | 2020 | 1.54 | 1.54 | 1.83 | 1.52 | 1.55 | 4.6 |
| | 2030 | 2.96 | 3.21 | 3.72 | 2.85 | 2.71 | 5.4 |
| | 2040 | 4.28 | 4.96 | 5.95 | 4.08 | 3.53 | 7.7 |
| | 2050 | 5.27 | 6.57 | 7.81 | 4.83 | 4.04 | 11.4 |
| | 2075 | 7.34 | 8.59 | 10.84 | 6.79 | 5.97 | 24.4 |
| | 2100 | 8.88 | 9.61 | 13.38 | 8.71 | 7.54 | 23.9 |

Factor price developments (baseline path)

| | Interest rate | Wage rates | | |
|-------------|------------------|-------------|-------------|-------------|
| | | low | middle | high |
| 2005 | .127 | 1.00 | 2.99 | 5.83 |
| 2010 | .124 | 0.98 | 3.03 | 5.87 |
| 2020 | .122 | 0.89 | 3.05 | 5.97 |
| 2030 | .109 | 0.84 | 3.13 | 6.37 |
| 2040 | .100 | 0.78 | 3.17 | 6.81 |
| 2050 | .091 | 0.75 | 3.24 | 7.16 |
| 2075 | .107 | 0.72 | 3.08 | 6.86 |
| 2100 | .115 | 0.68 | 2.97 | 6.86 |

Eliminating Trade with China and India

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Successful Education Policy in China and India

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| Scenario | 2005 | .127 | 1.00 | 2.99 | 5.82 |
| | 2030 | .110 | 0.96 | 3.16 | 6.12 |
| | 2050 | .092 | 1.00 | 3.31 | 6.61 |
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- ▶ However, due to the larger number of unskilled workers in China and India, wages for low-skilled workers are expected to decrease while those for high-skilled workers increase.
- ▶ Globalization means larger wage dispersion in the future.
- ▶ In case of successful Chinese and Indian education policies exacerbation of wage inequality can be reversed.