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United Nations | Department of Economic and Social Affairs

Session 16:

Forecasting public expenditures on health care

Tim Miller

Global Adviser on Population and Development

Mun Sim Lai

Population Affairs Officer

Our modest goal for today!

- Last year, we developed forecasts of public social spending for 18 Latin American countries. We will review those results now.

- In our next few hours together, let's develop forecasts of public social spending for 10 Asia and Pacific countries.

PUBLIC EXPENDITURES ON HEALTH

Health care

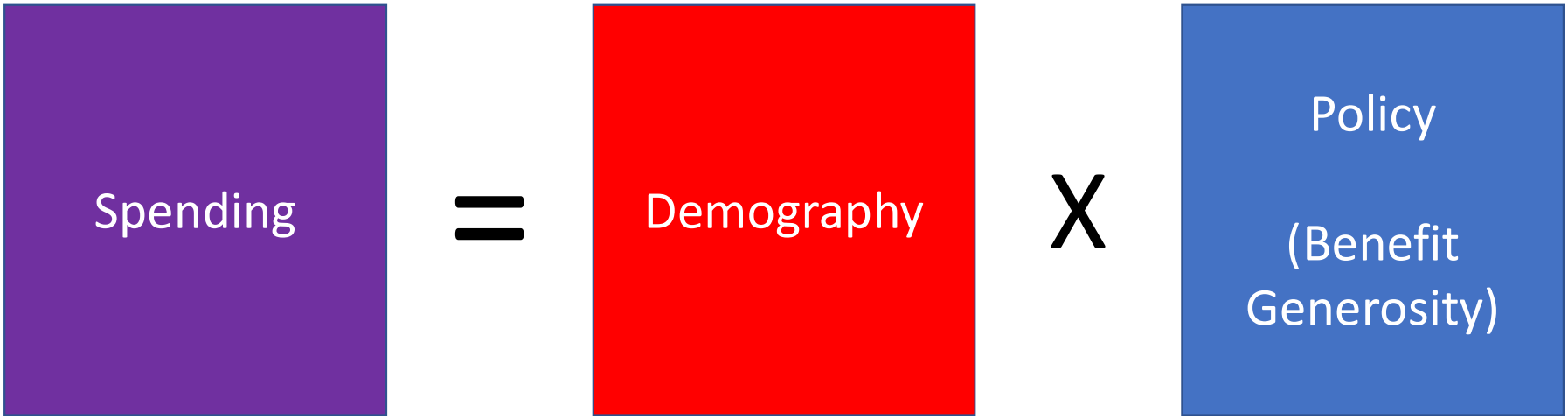
Uncertainty about the future direction of health care benefits is much greater than that of pensions and education because of uncertainty about technological change.

Modest increases in health care expenditures forecast by this model are similar to those of Miller, Mason, and Holz (2011) and those of Acosta-Ormaechea, Espinosa-Vega and Wachs (2017) for the IMF-Reform Scenario.

On average, half of increase due to population aging and half due to benefit changes.

Large shift in orientation of health sector toward elderly and treatment of chronic disease.

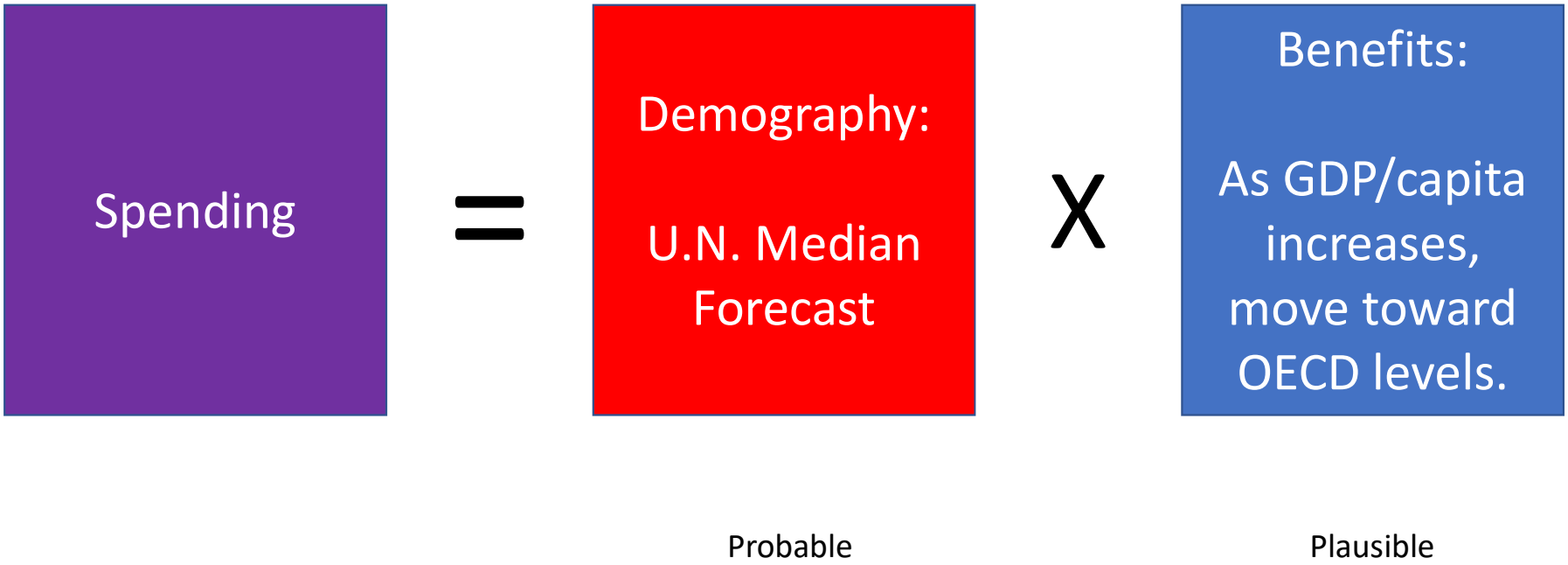
The Model



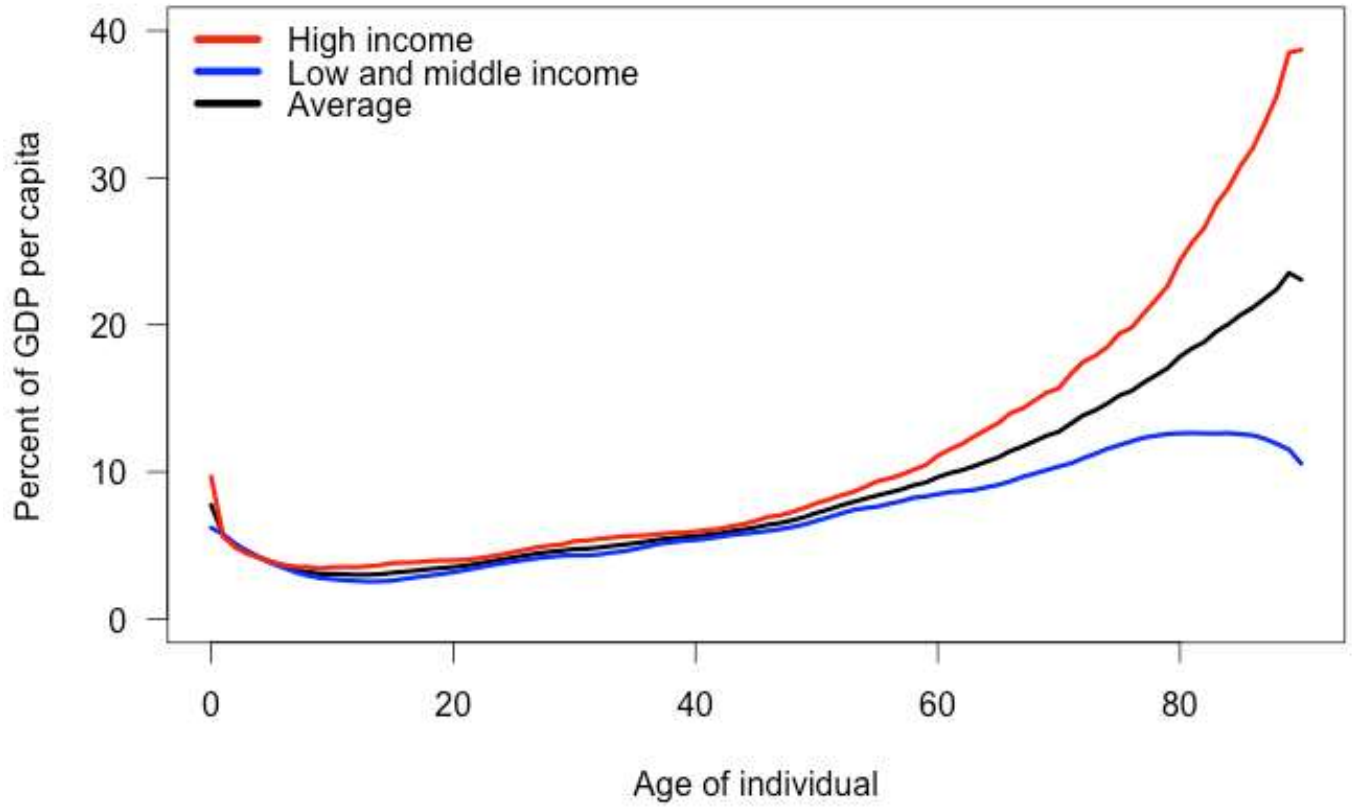
The Model


Spending
(% of GDP)
=
Target Population
(% of working-age adults)
X
Benefit per person
(% of GDP per working-age adult)

The Forecast



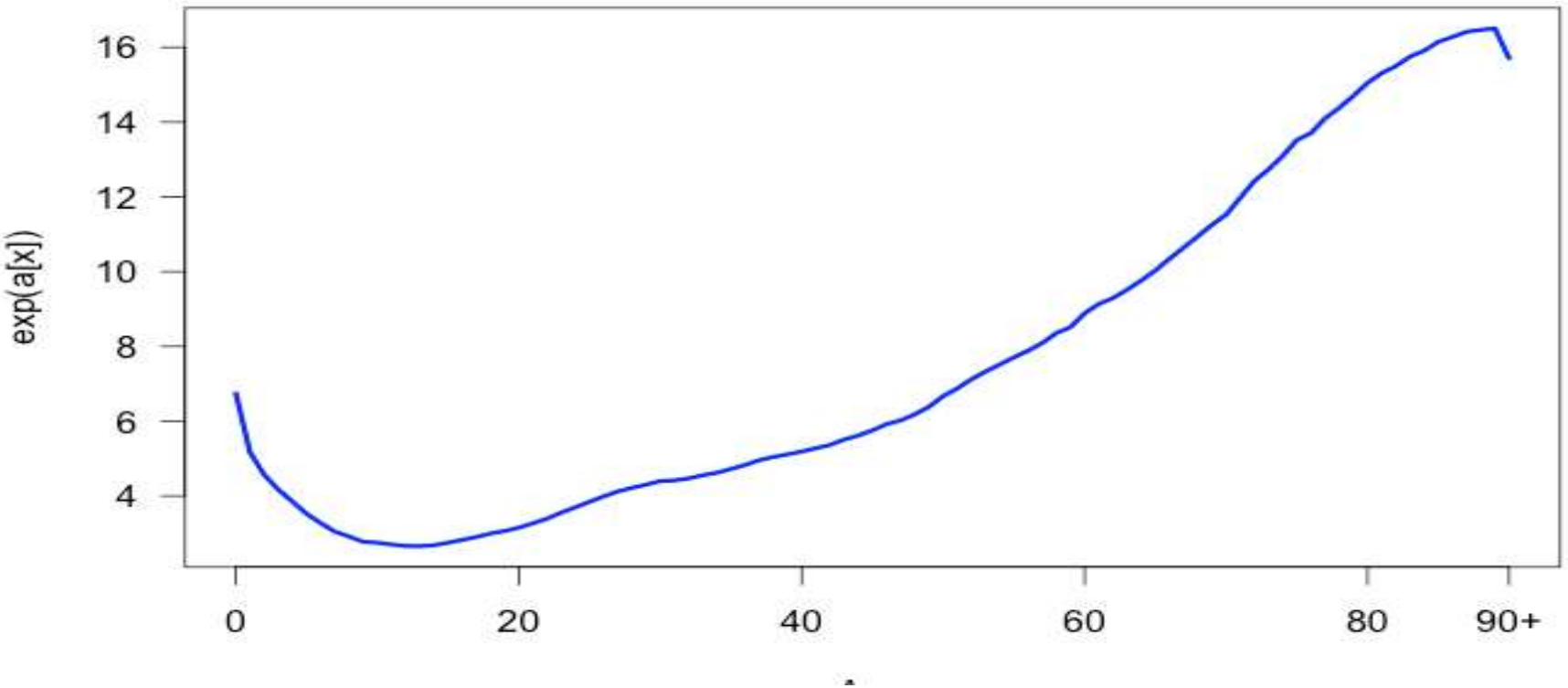
Health care spending by age, High income (16 countries) vs. Low and middle income (20 countries)



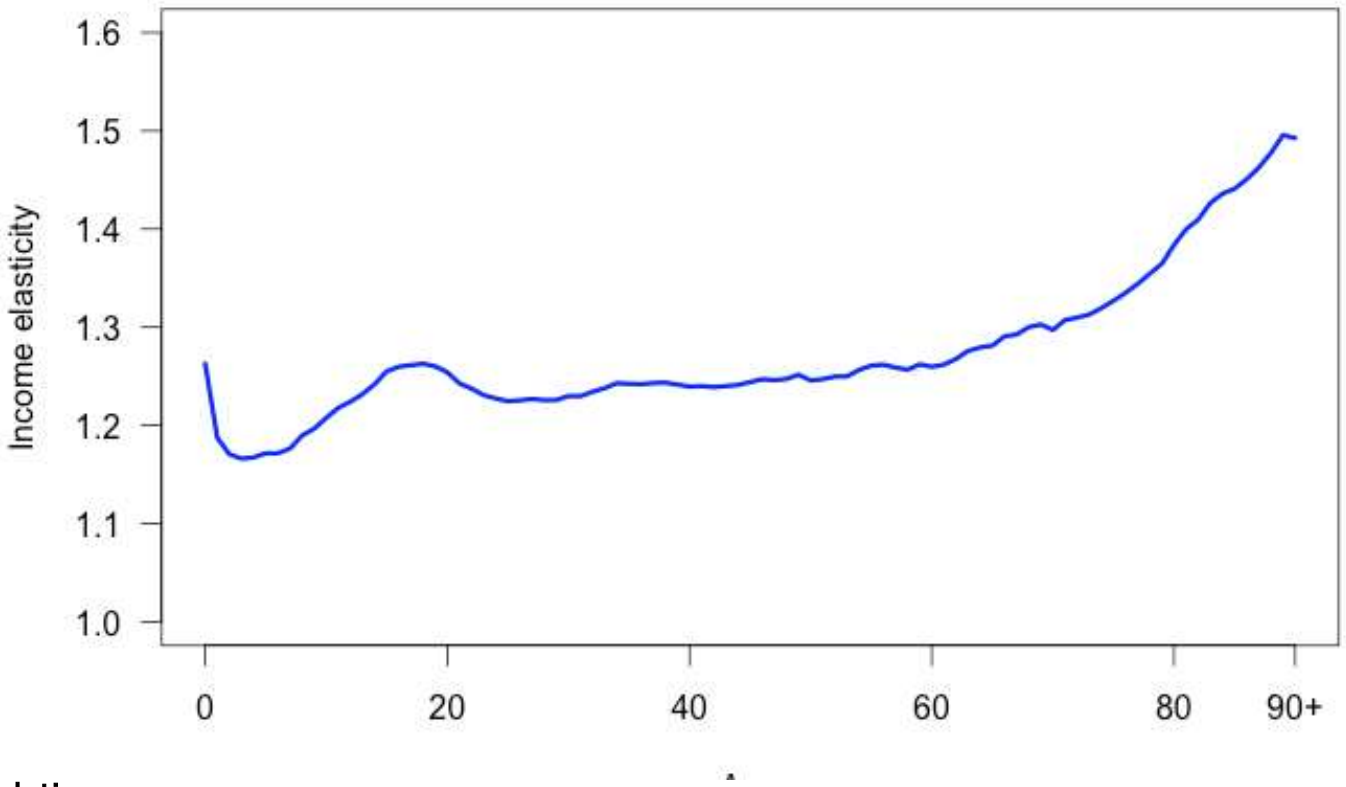
$$\ln(h[x, j]) = a[x] + b[x] * f(\ln(Y[j])) + e[x, j]$$

- **h[x, j]** = Health expenditure at age *x* in country *j*, measured relative to GDP per capita
- **a[x]** = age-specific effect, common to all countries
- **b[x]** = age-specific deviations from common pattern as GDP per capita (**Y[j]**) increases
- **e[x, j]** = age-specific residual in country *j*, reflecting the idiosyncrasies of country *j*

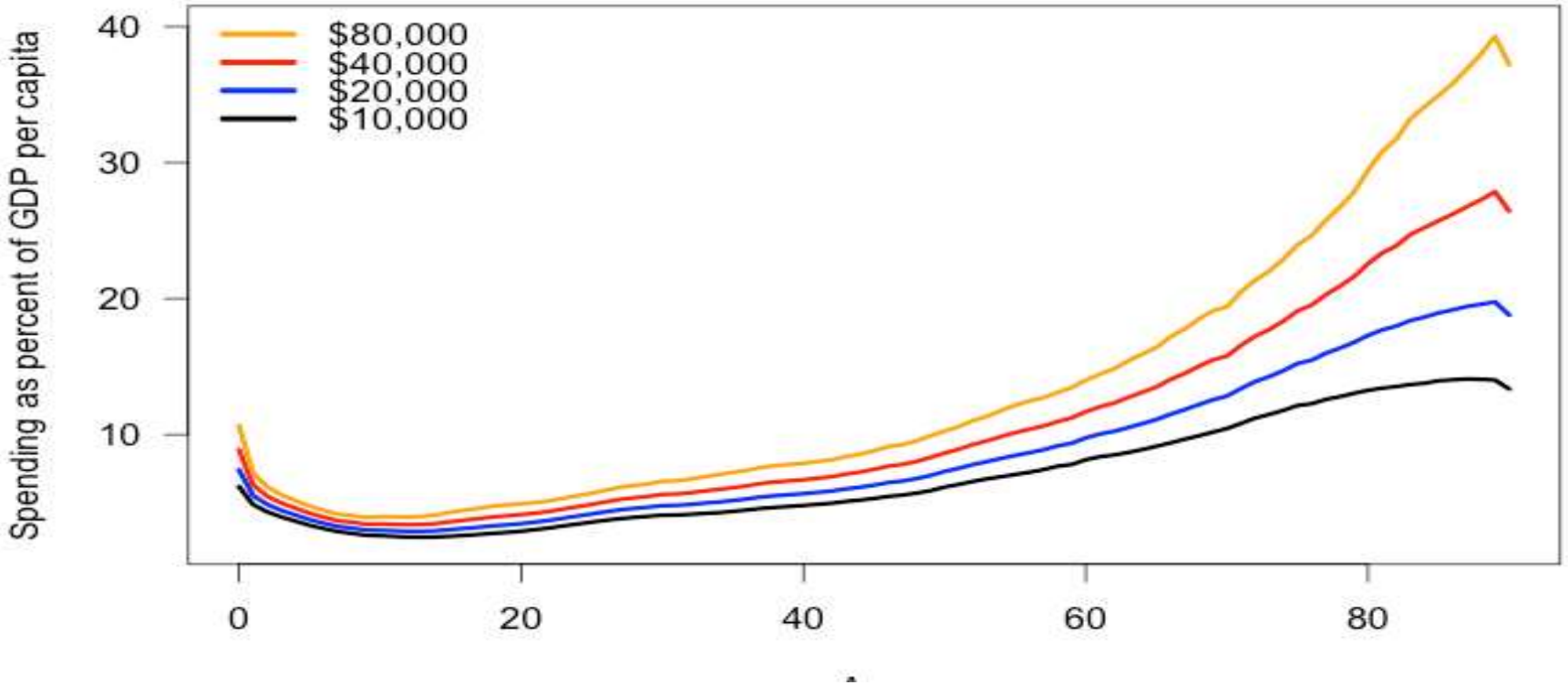
a[x] = age-specific effect, common to all countries



b[x] = age-specific deviations from the common pattern as GDP per capita increases



Model predictions:
Age-specific health spending



$$\ln(h[x,t]) = a[x] + b[x]*f(\ln(Y[t])) + e[x,t]$$

- **Forecast for Chile:**

- **Y[t]** = GDP per capita over time: 2015-2060…Thanks OECD!

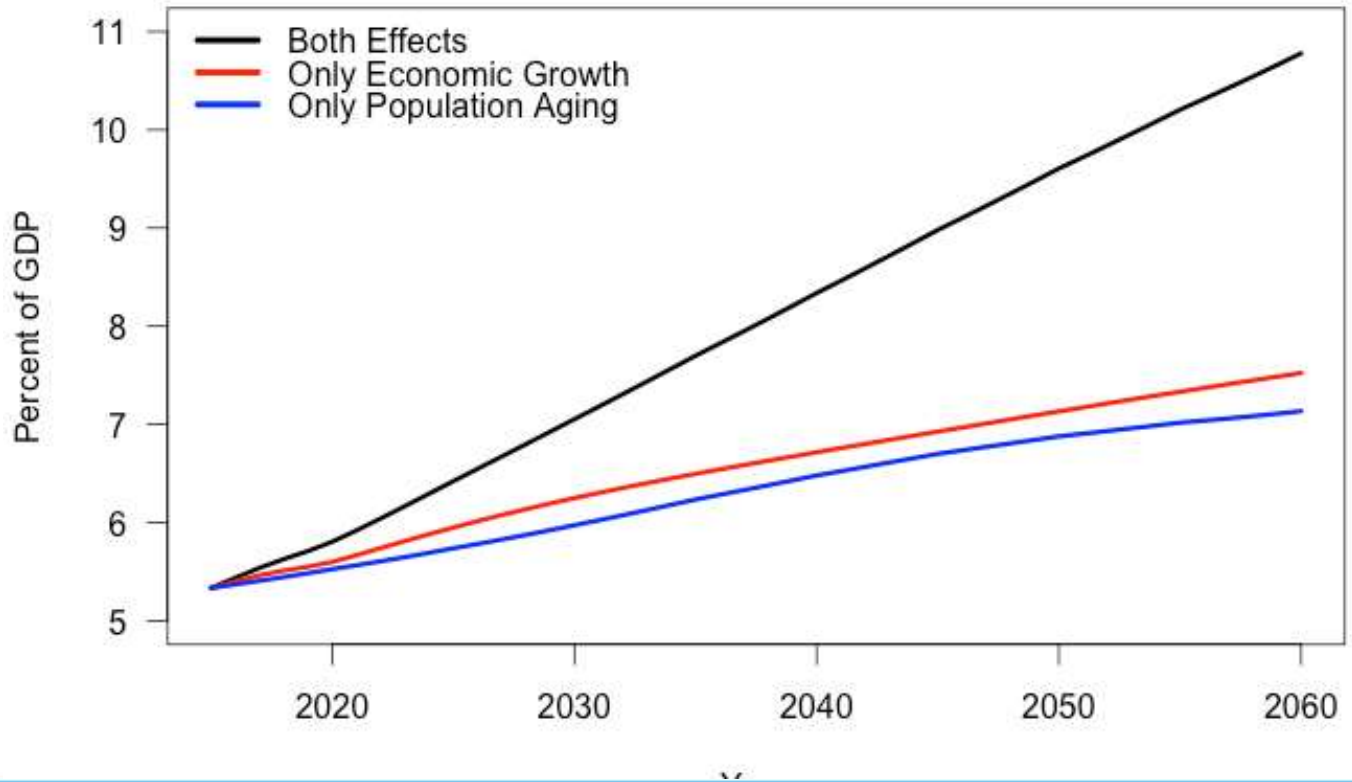
- **e[x, t]** = age-specific residual for Chile over time

Idiosyncrasies of Chile persist forever: e[x, t] = e[x]

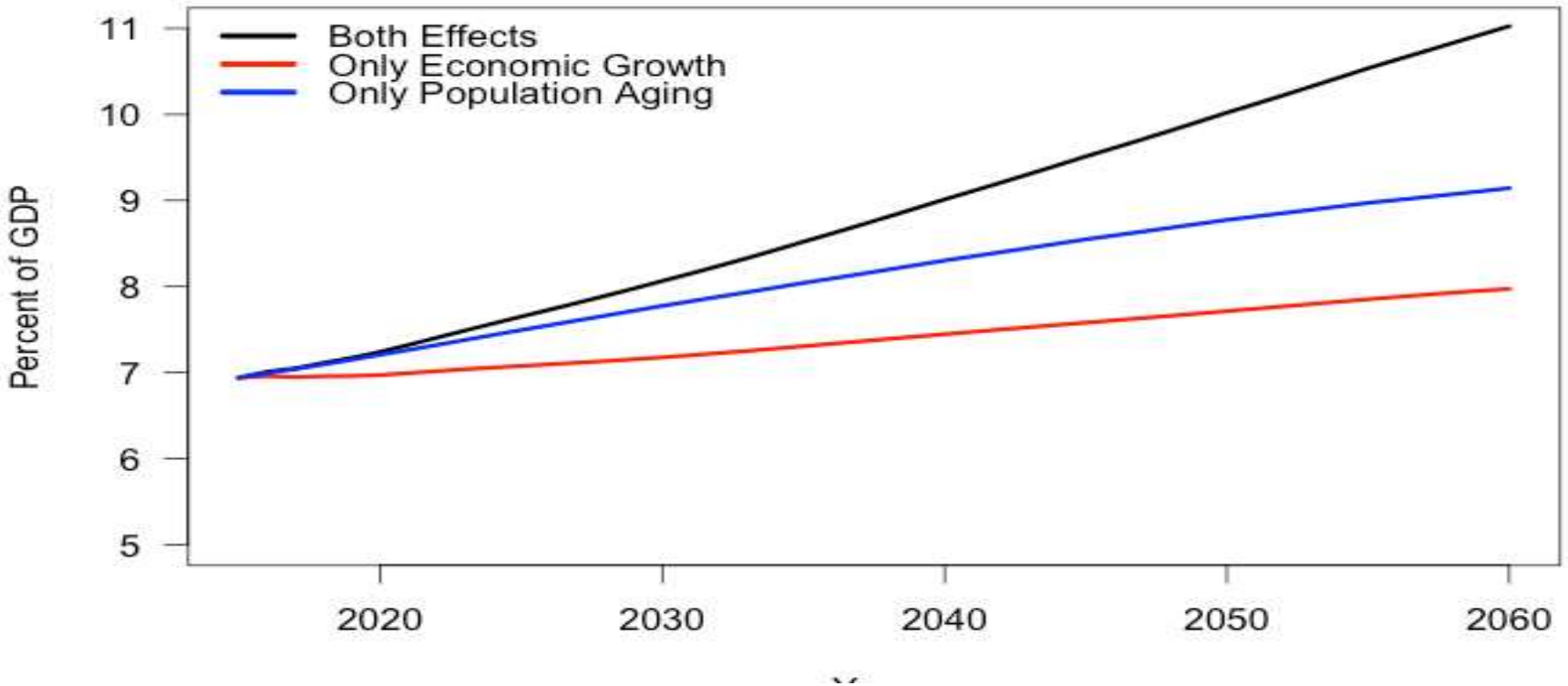
or

Idiosyncrasies of Chile fade away: e[x, t] = e[x] * z(t)

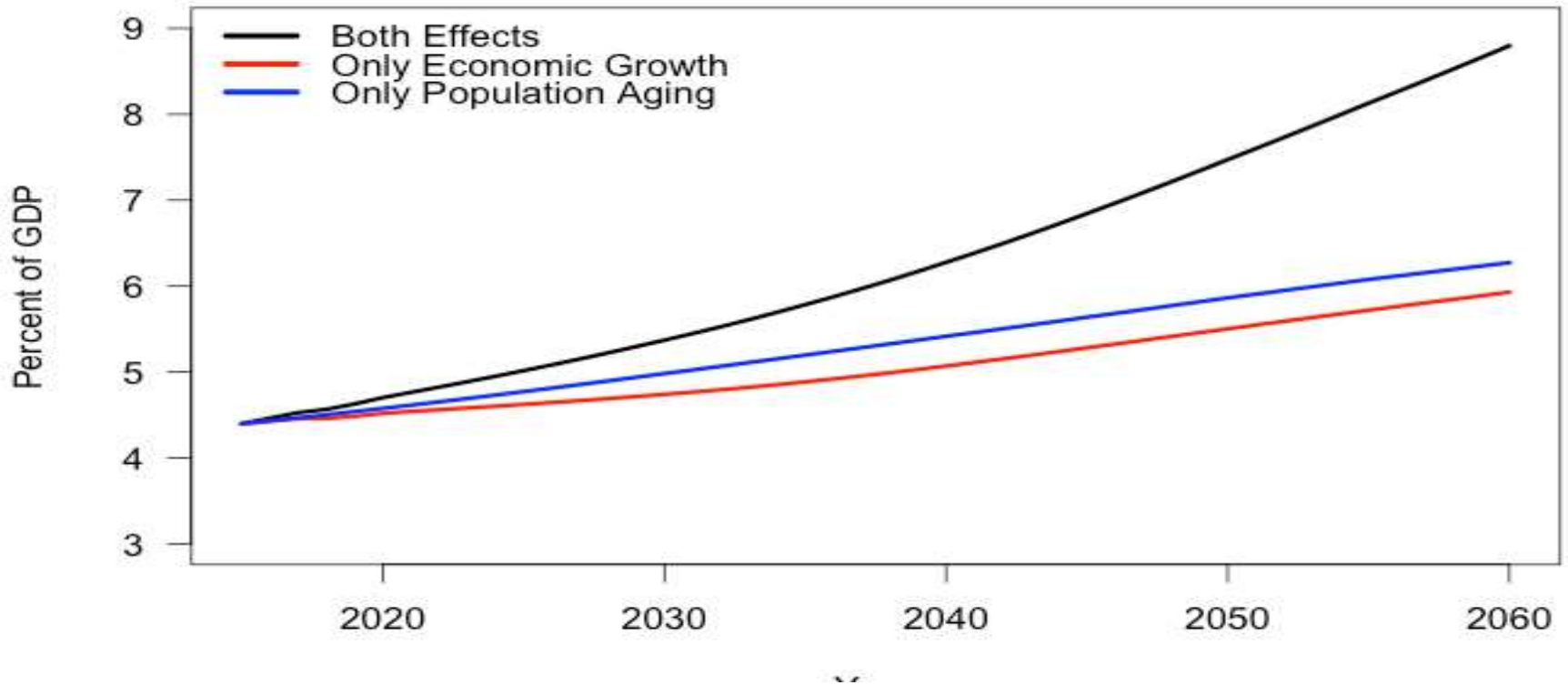
Chile: Health expenditures increase by 100% relative to GDP



Brazil: Health expenditures increase by 60% relative to GDP



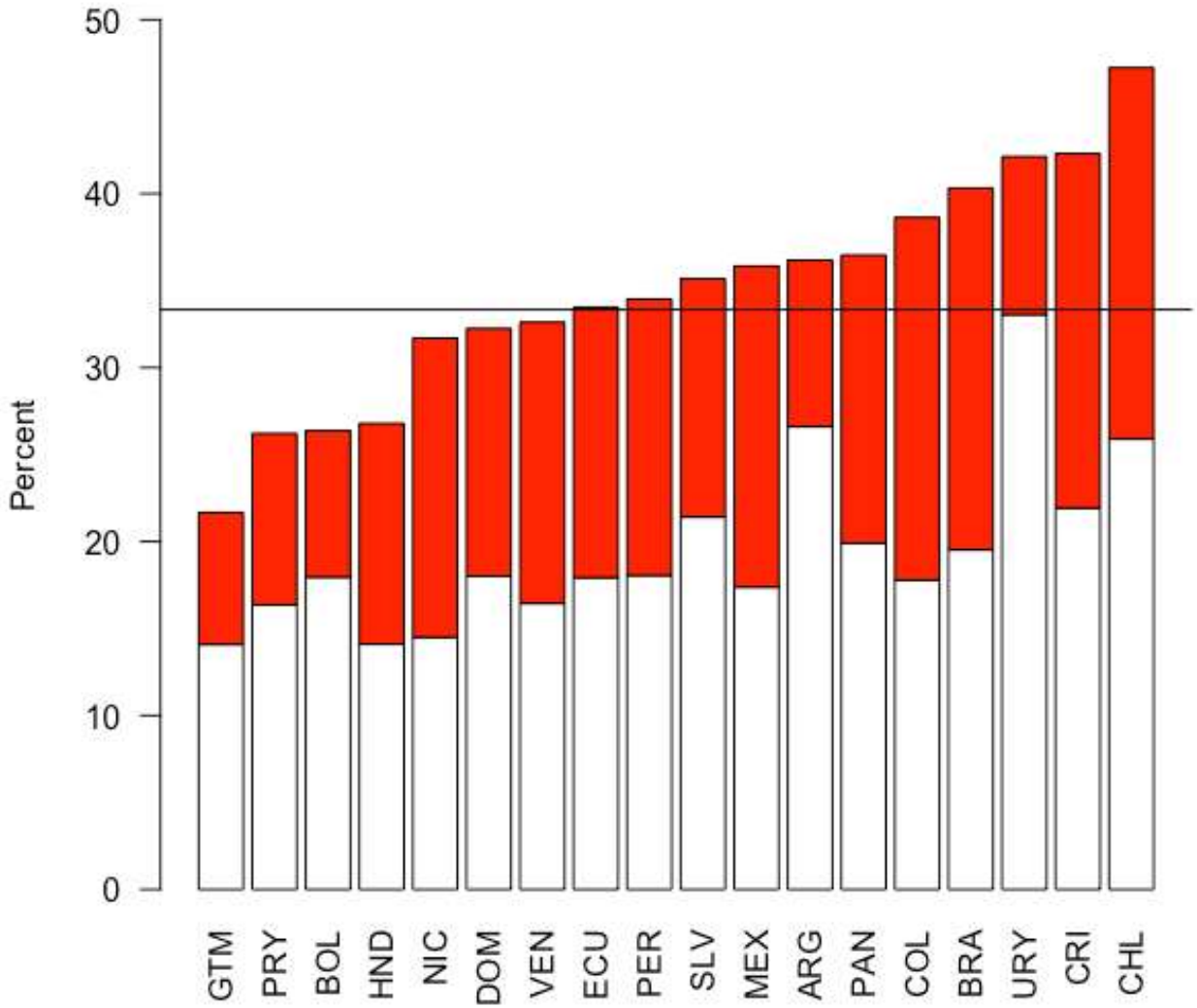
Mexico: Health expenditures increase by 100% relative to GDP



Restructuring of health care system to face challenges of chronic disease.

The proportion of public spending on health care directed toward the older persons:

2015: 18%
2045: 35%



What we found in Latin America. Will it be true of the Asia Pacific region, too?

- Social spending in Latin America will likely reach OECD levels within a generation.

- A diverse set of strategies to address population aging will likely be adopted in Latin America – just as diverse as those adopted by the OECD.

- Still an open question: What are the appropriate strategies to best adapt to Aged Economies? The emergence of Aged Economies is a recent phenomenon so we are short on observational data and long on hypotheses. It is an important time for dialogue between the emerging wealthier and older Latin America and Asia Pacific regions and the wealthier and older nations of the OECD.

Hands-on Training

1. Forecast health expenditure as a share of GDP
2. Calculate the relative contribution of population ageing to this increase
3. Compute the change in the share of health expenditure directed towards older persons
4. Combine the health, pension and education forecast.

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Any questions?
You can contact us at
tim.miller@un.org
and laim@un.org

Next up
Session 17: Country presentations