Population Aging in ASEAN+3: But is 60 the New 40?

(Aruhan) Rui Shi and Hongyan Zhao
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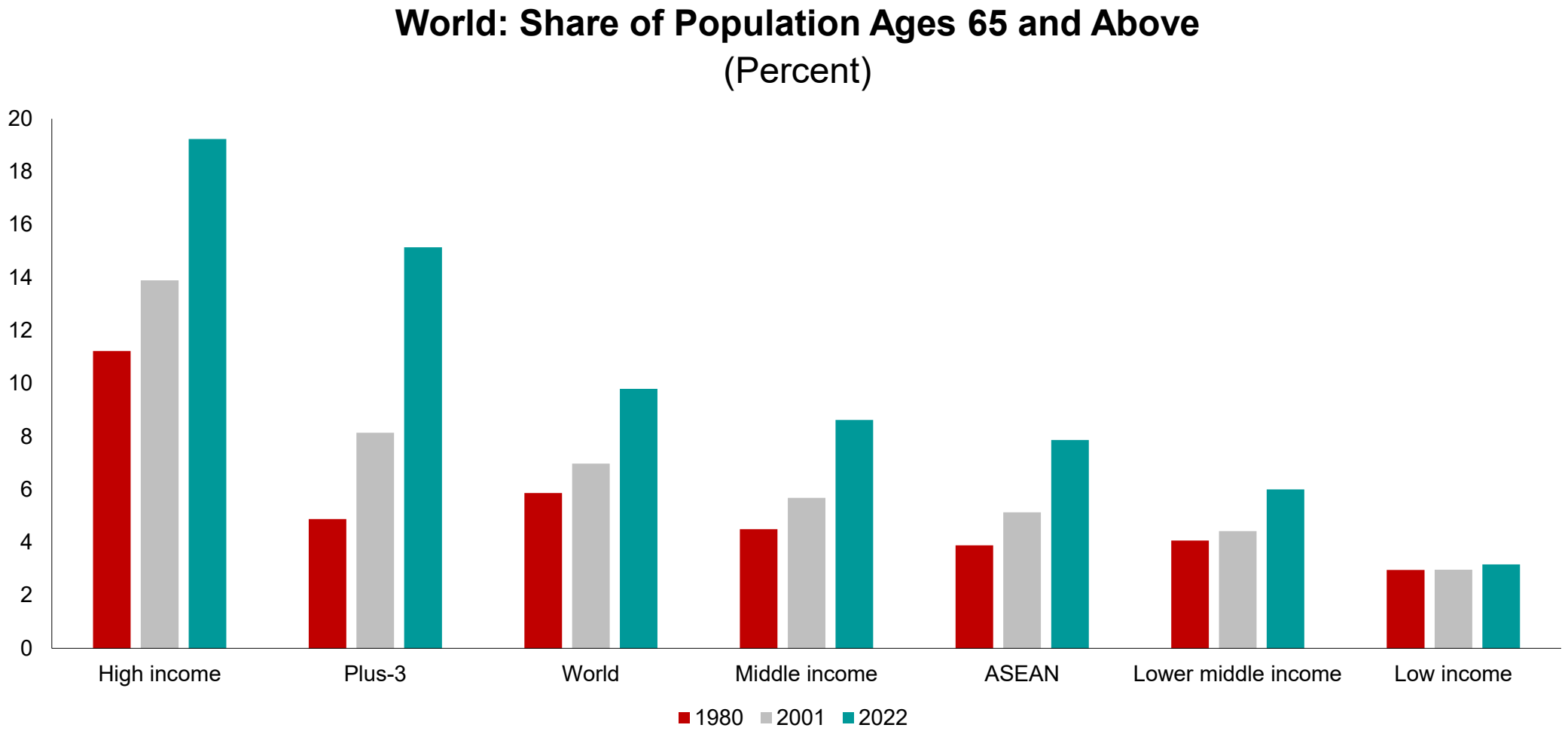
Chronological aging is a global trend observed not only in advanced economies but also in emerging market economies

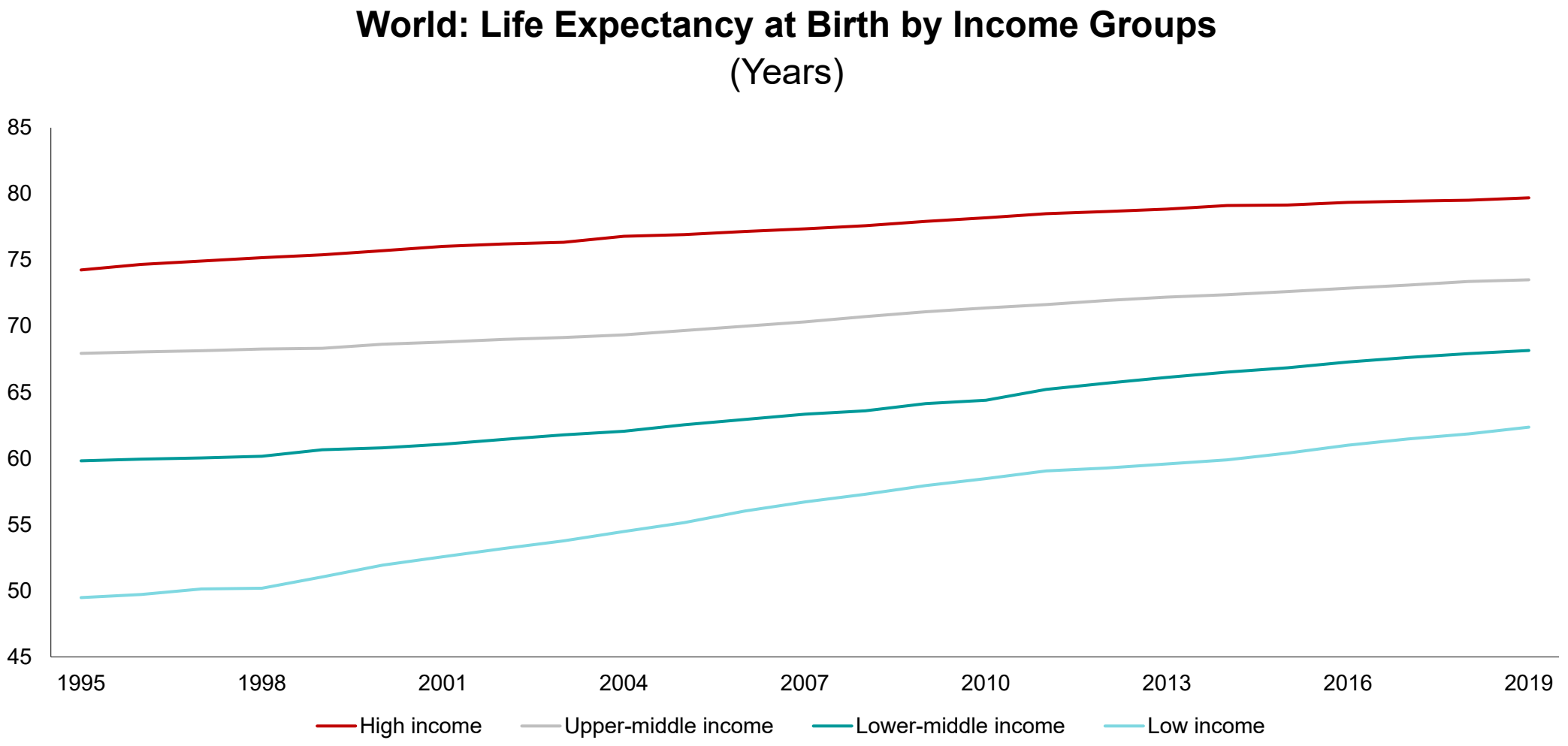


Source: World Bank.
Note:Plus-3 refers to China (including Hong Kong, China), Japan, and Korea. ASEAN refers to Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

There is mixed evidence on the impact of aging on growth and its channels

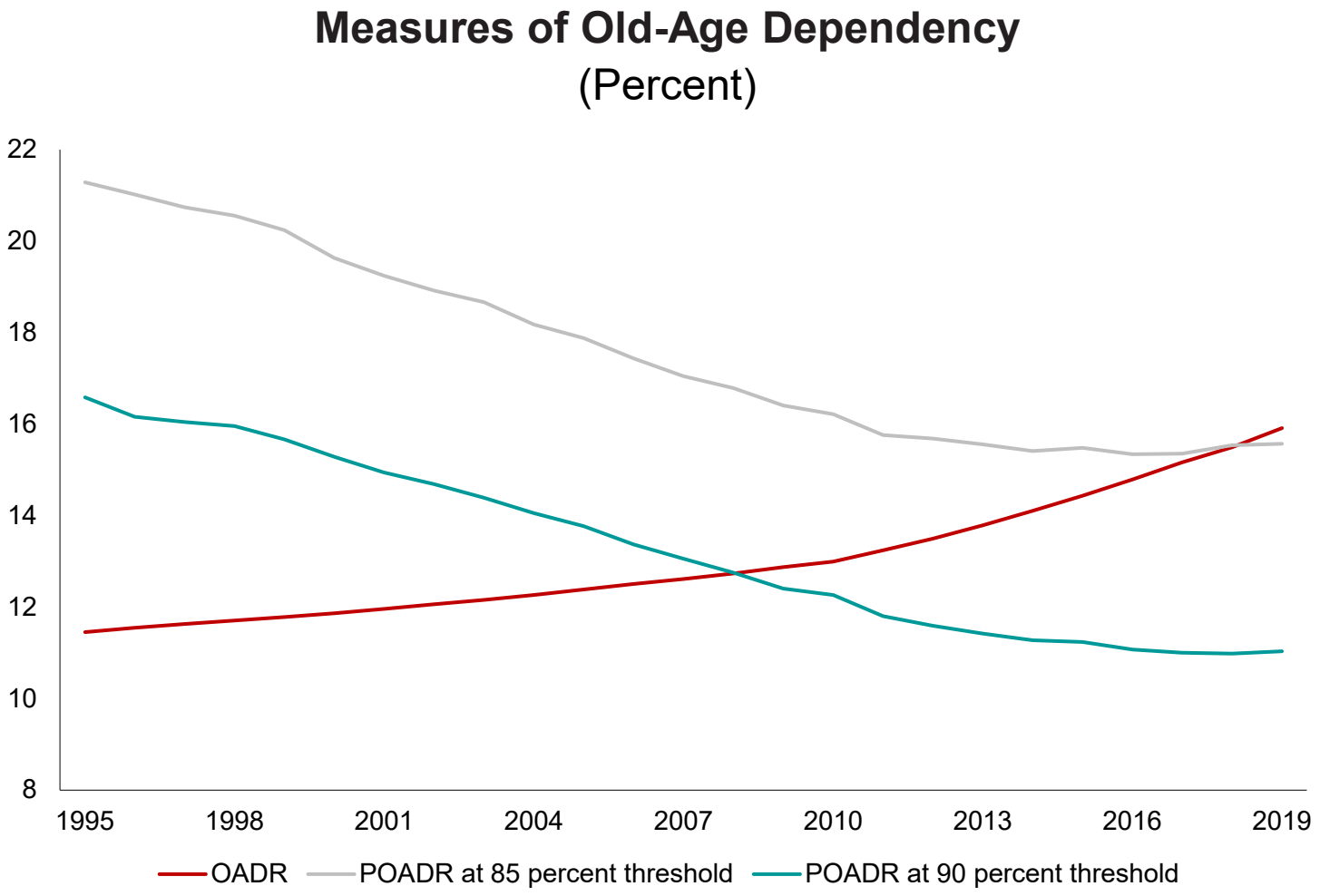
- The term 'old' is commonly measured as the population above the age of 65.
- Aging and growth: no consensus with mixed evidence:
    - Negative relationship: Lindh and Malmberg (1999), Maestas, Mullen, and Powell (2023);
    - Insignificant relationship: Aiyar, Ebeke, and Shao (2016), Acemoglu and Restrepo (2017).
- Aging and channels of growth:
    - Physical capital: depends on saving rates. Less savings (Lee, 2016); more savings (Hansen, 1939; Summers, 2015);
    - Human capital: positive effect depends on market frictions in human capital formation (Ludwig, Schelkle, and Vogel, 2012);
    - TFP: negative impact (Park and Shin, 2023); positive impact (Acemoglu and Restrepo, 2017; Prettner and Strulik, 2020).

Life expectancy has increased globally and varies across economies



Sources: Authors' calculation based on data from the UN DESA (2022).

We construct a life expectancy adjusted measure of aging—the prospective old age dependency ratio (POADR)



Source: Authors' calculation based on data from the UN DESA (2022).

- $$\boldsymbol{POADR} = \frac{population\ aged\ above\ a\ threshold}{population\ aged\ between\ 15\ and\ the\ threshold}$$
- Ages above 90 percent of the life expectancy are considered old.
- Consider 85 percent for robustness.
- Using a percentage measure to account for changes in life expectancy over time.
- OADR (old age dependency ratio): threshold = age 65.

Using the POADR, we run regressions to examine the relationships between aging and growth, and aging and growth factors

- Regress economic growth on aging, human and physical capital, and TFP:

$$\Delta \ln y_{it} = \gamma_i + \beta_1 X_{it} + \beta_2 \Delta \ln h_{it} + \beta_3 \Delta \ln k_{it} + \beta_4 \Delta \ln A_{it} + u_{it}$$

- Regress economic growth channels (human and physical capital accumulation, and TFP) on aging:

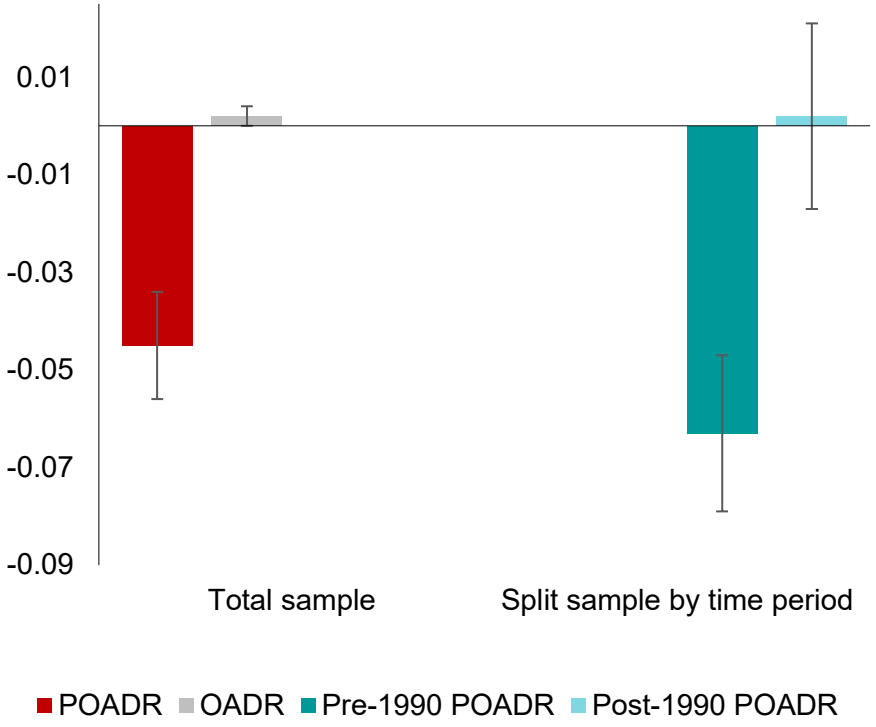
$$\Delta \ln Z_{it} = \gamma_1 X_{it} + u_{it}$$

- Regress GDP per capita growth on age groups, for economies with retirement ages between 60 and 65:

$$\Delta \ln y_{it} = \gamma_i + \beta_1 age_{it}^{25-45} + \beta_2 age_{it}^{55-59} + \beta_3 age_{it}^{66-70} + u_{it}$$

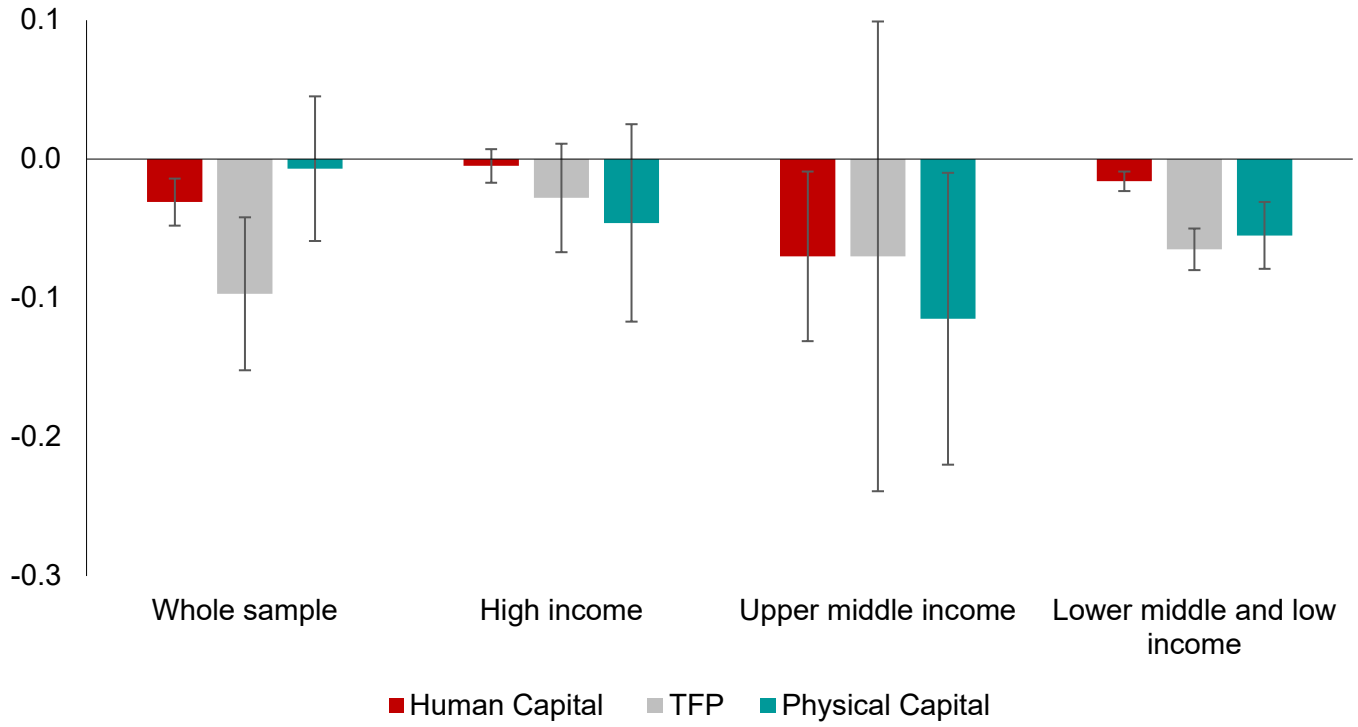
Globally, aging has adversely affected economic activity, and was more pronounced before 1990…

Regression: Impact of Aging on Economic Growth
(Percentage point)



Source: Authors' estimates.

Regression: Impact of Aging on Economic Growth Channels
(Percentage point)

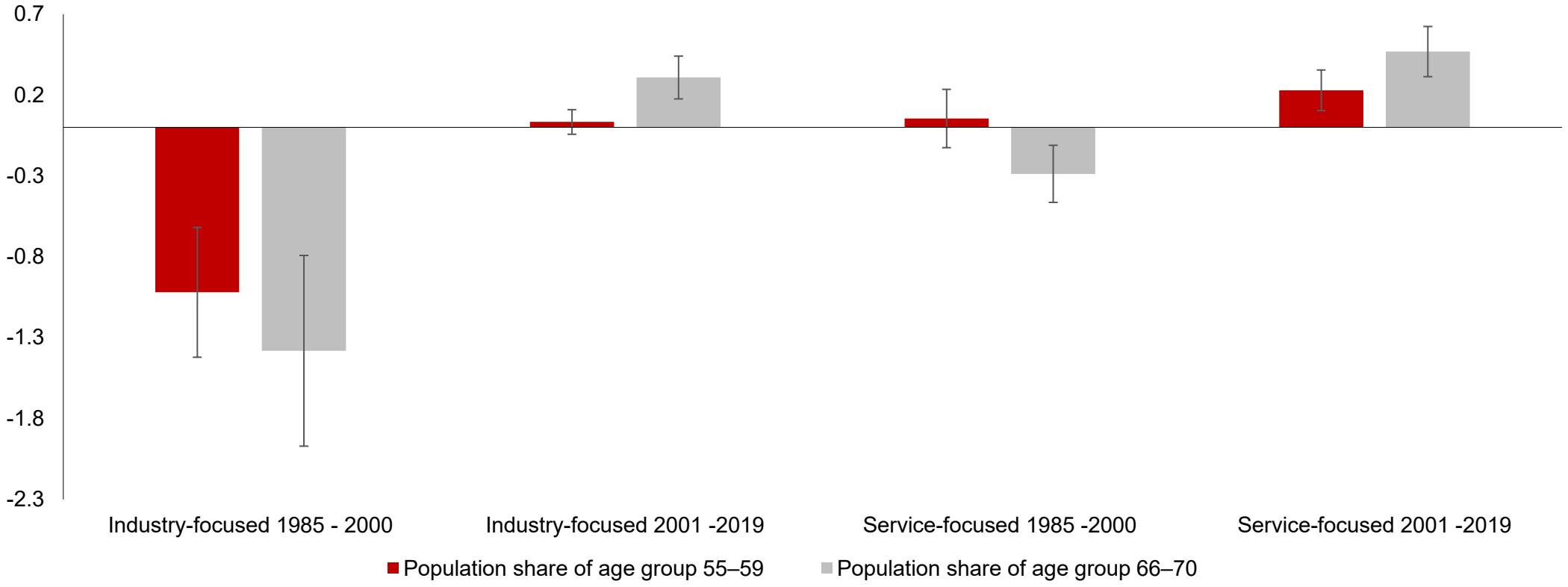


Source: Authors' estimates.

The age groups nearing retirement and beyond have increasingly contributed to growth since 2000

Regression: Contributions to Economic Growth by Age Group and Sector, Pre- and Post-2000

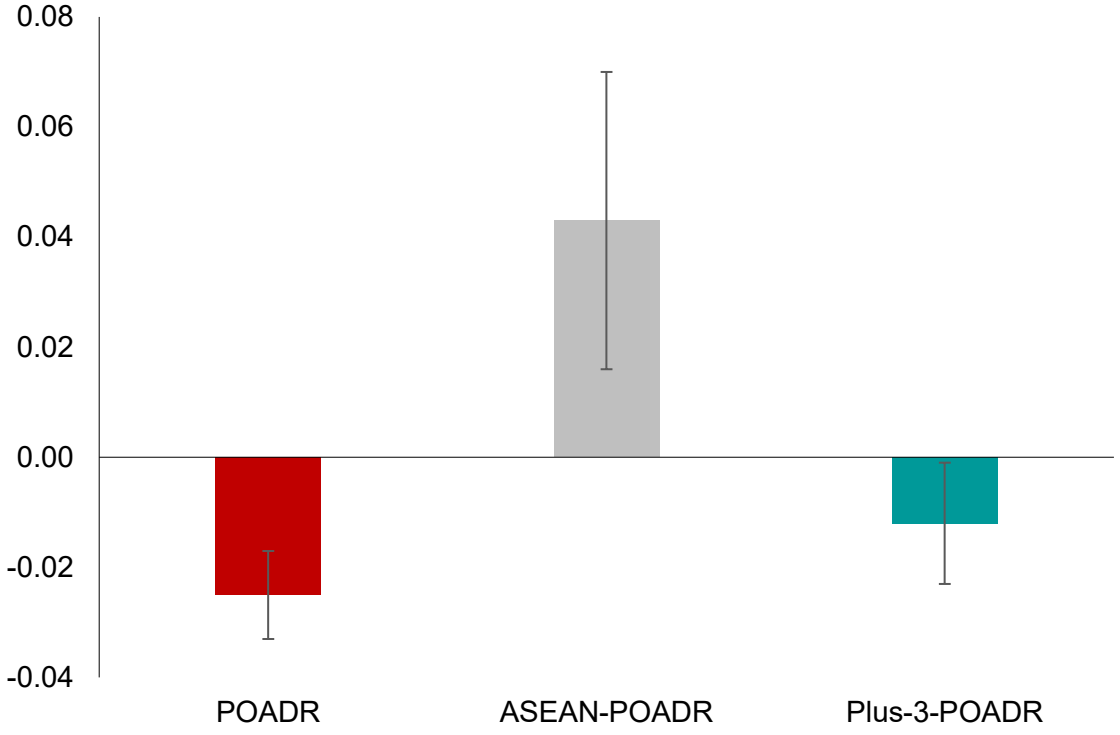
(Percentage point)



Source: Authors' estimates.

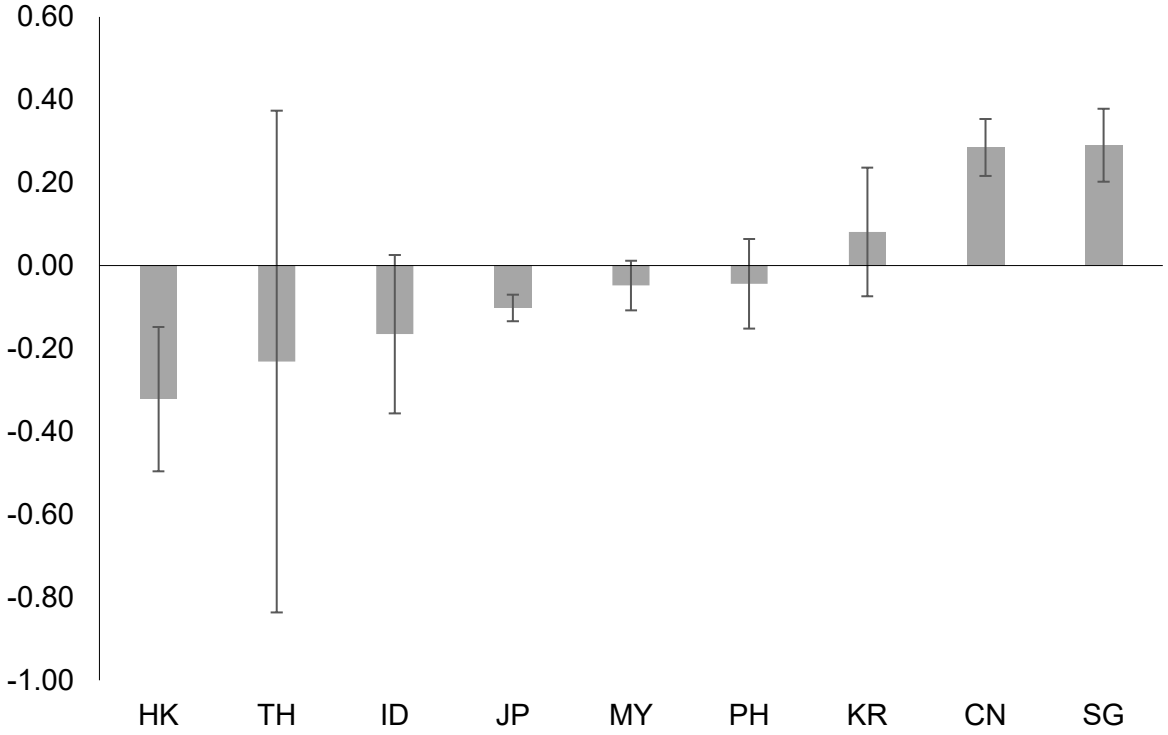
In ASEAN+3, the relationship between aging and economic growth is insignificant overall, but varies across individual economies

Baseline Regression: With ASEAN and Plus-3 Dummy Variables
(Percentage point)



Source: Authors' estimates.

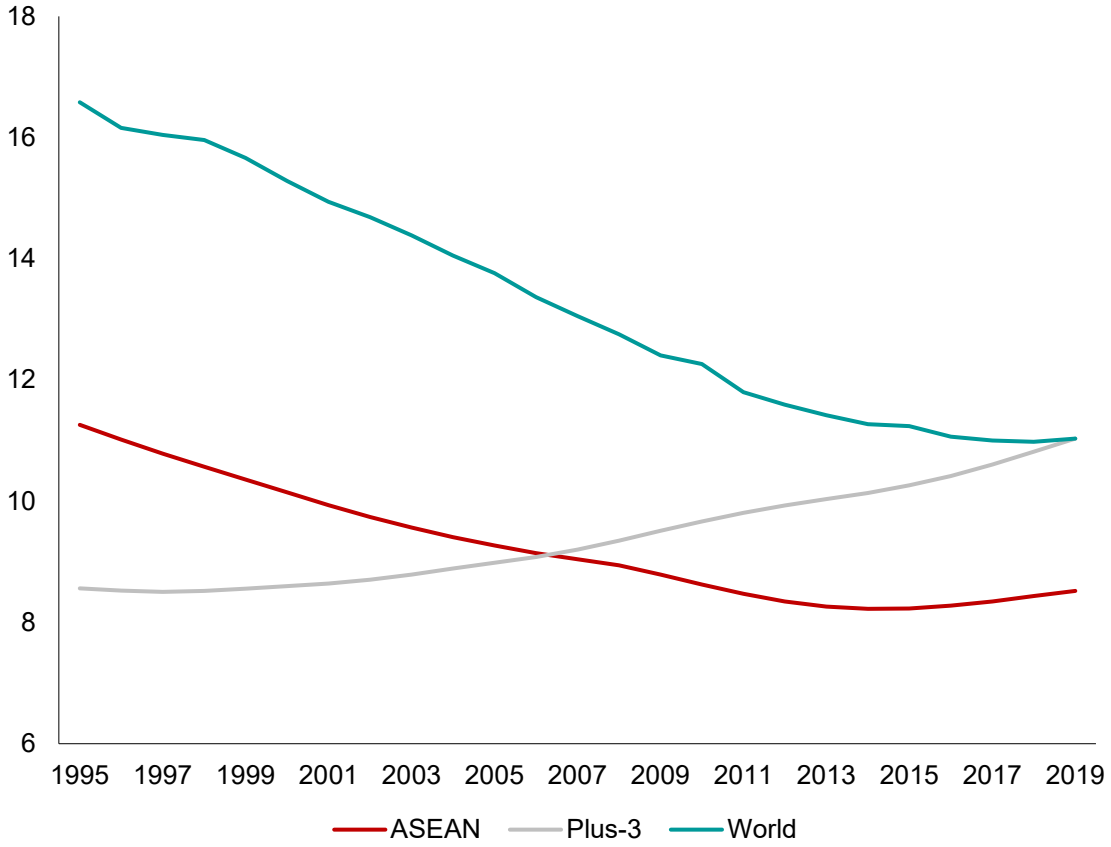
Regression: Impact of Aging on Economic Growth of Individual ASEAN+3
(Percentage point)



Source: Authors' estimates.
Note: CN = China; HK = Hong Kong, China; ID = Indonesia; JP = Japan; KR = Korea; MY = Malaysia; PH = Philippines; SG = Singapore; and TH = Thailand.

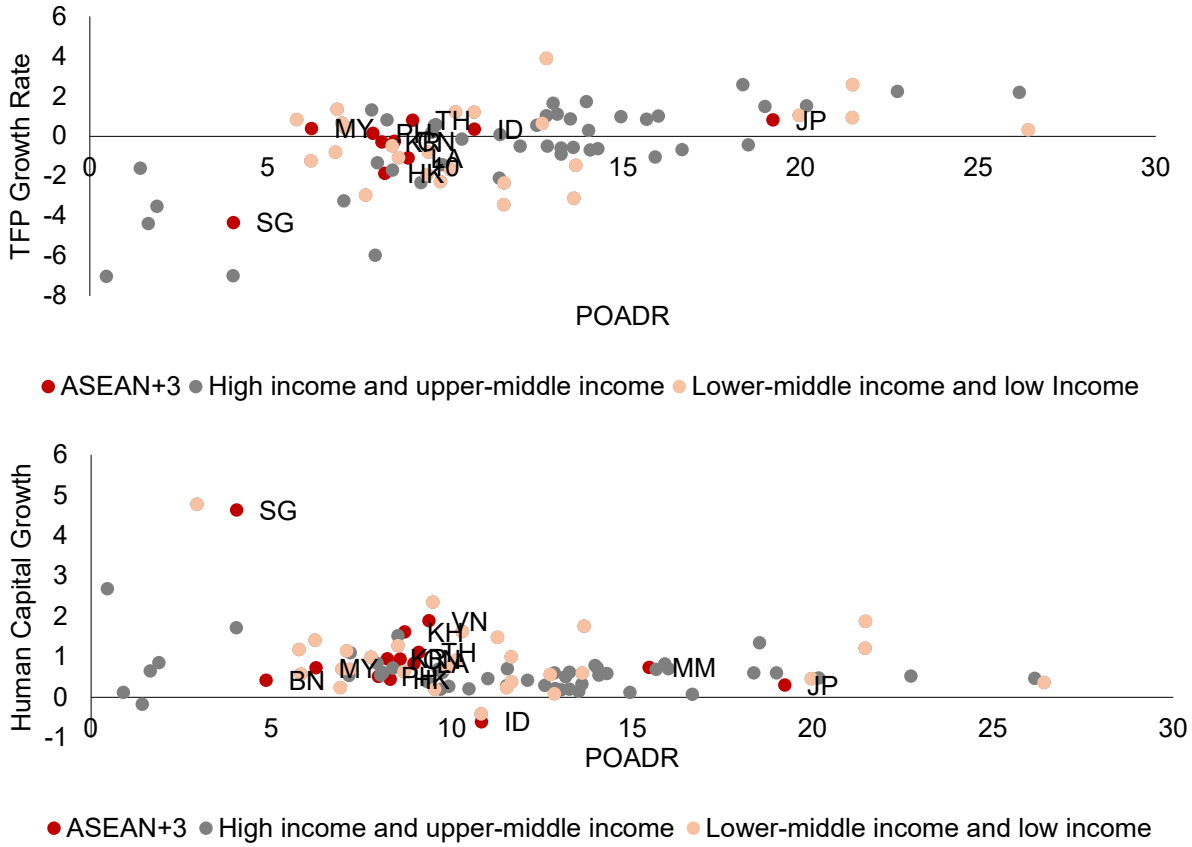
TFP and human capital accumulation, coupled with relatively young populations, may explain the overall insignificant impact

POADR across Regional Groupings
(Percent)



Source: Authors' calculations based on data from PWT and UN DESA.
Note: ASEAN refers to Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Plus-3 economies refer to China (including Hong Kong, China), Japan, and Korea.

POADR vs. TFP and Human Capital growth, 2019
(Percent)



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We offer several policy recommendations

"*… to the extend that both public institutions and popular cultures have enshrined age 65 as the appropriate age for retirement, a problem is created. The greatest challenge … may be to adjust our institutions and cultural perceptions as rapidly as populations experience chronological aging.*"

~ Ronald Lee
"Macroeconomics, Aging, and Growth"
in Handbook of the Economics of Population Aging

- Enhance human capital and technological advancements to leverage the economic benefits of aging.
- Ease retirement age restrictions and increase job opportunities, including reskilling and upskilling, for those wanting to stay in the workforce.
- Develop and leverage on the "silver economy"—i.e., all economic activities serving those over 50—as a source of growth.

Thank you

AMRO
ASEAN +3 MACROECONOMIC RESEARCH OFFICE

Contact Us

Add: 10 Shenton Way, #15-08/9, Singapore 079117

Tel: +65 6323 9844

Email: rui.shi@amro-asia.org; zhao.hongyan@amro-asia.org

Website: www.amro-asia.org