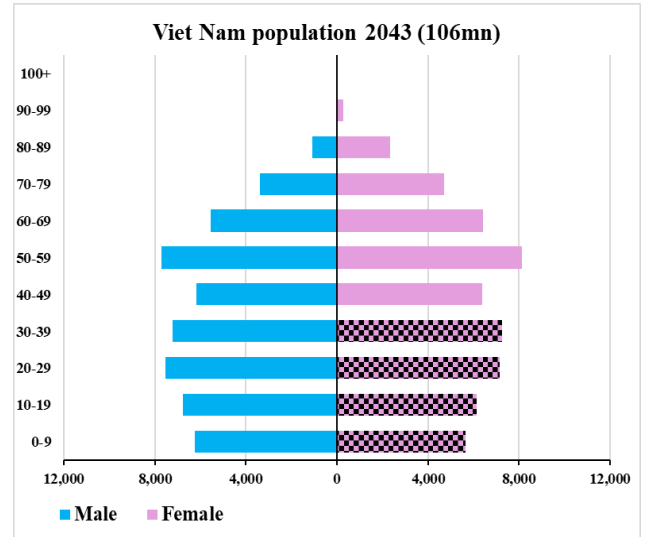
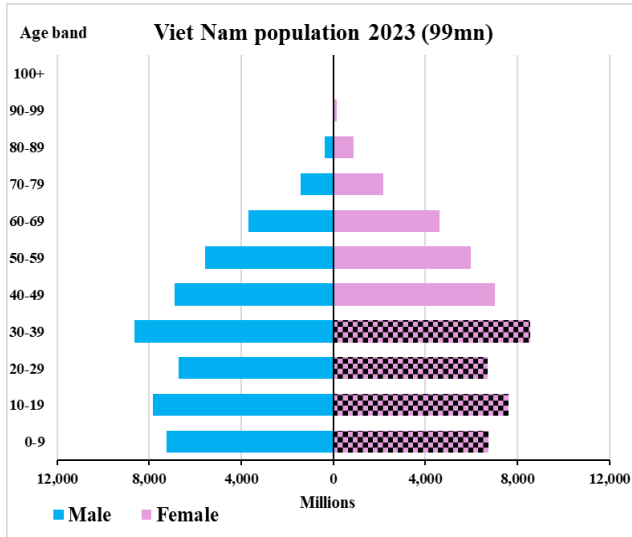




With a Larger Youth Population than America, Vietnam’s Demographics Seem Poised to Power Economic Growth for the Next Two Decades.

Prepared as of December 17, 2024

Vietnam’s Goldilocks Demographics



Demographics provide an almost perfect backdrop to the Vietnam investment story. Over the next 5-10 years, GDP growth at 6% pa will far outstrip population growth, which is expected to be 6% total over 20 years. A larger economy shared divided by the same population size should lift average income. Greater income without the burden of excessive aged and a modestly shrinking Young cohort makes it easy to lift educational spending per pupil. Rising educational levels should translate into greater productivity, creating wealth and rewarding company shareholders.

This all stands in stark contrast to both the “shrinkers” (e.g., China, Thailand and Japan), which will see shrinking workforces overburdened with government debt and ageing populations; and, the over-expanders (e.g., Indonesia and Mexico) whose rising populations relative to economic growth make it challenging to grow education spending per pupil, which could hamper productivity growth and wealth creation.

This information applies to the country of Vietnam, and unless otherwise specified below, data comes from United Nations, Department of Economic and Social Affairs, Population Division (2024). World Population Prospects 2024, Online Edition, see <https://population.un.org/wpp/Download/Standard/Fertility/>. as adjusted by Muddy Waters, using the methodology described below.

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Young, Stable and Fertile

As of the most recent available data (2023), the Young (0-18 years) make up 36% of Vietnam’s population. While the population is rising, it should grow more slowly than GDP. While Vietnam’s female fertility rate has dropped, it seems to have stabilized at 2.55, which should ensure sustainability. These factors should create a sweet spot that allows Vietnam to develop and create wealth well before its population gets old.

	Population 2023 (millions)	Young/ Total Population 2023 (millions)	Forecast Total Population Change 2023 to 2043 (%)	Female Fertility Rate*
Vietnam	99	28	7	2.5
China	1,413	21	(14)	1.4
India	1,415	31	11	2.9
Indonesia	277	31	10	3.0
Japan	124	15	(15)	1.6
Malaysia	35	2	16	2.3
Philippines	113	35	2	2.8
Thailand	71	19	(8)	1.6
Poland	38	19	14	1.7
UK	68	21	8	2.2
Brazil	209	25	0	2.3
Mexico	128	31	9	2.8
United States	340	22	4	2.3

A Robust Youth Population

In 2023, the Youth (i.e., 0-18 years) in Vietnam were 28% of the population. Workers were (64%) and the Elderly (over 66 years) were only 7.8 million or 8%. Over the next 20 years, the population is likely to age as food quality and medical care improves and families get smaller. However, during this period, the population balance will still be skewed to Youth, thereby favoring wealth creation. Even in 2043, the Worker to Elderly dependency ratio will still be four workers for each retiree. This ratio is much lower than the eight workers/retiree ratio in 2023, but still above the 2023 ratios in developed markets.

	Youth 2023 (millions)	Youth 2043 (%)	Worker/ Aged ratio 2023 (x)	Worker/ Aged ratio 2043 (x)
Vietnam	28	22	8.1	4.1
China	293	8	5.0	2.5
India	440	24	9.8	6.2
Indonesia	84	24	9.7	5.5
Japan	18	11	2.0	1.4
Malaysia	10	16	9.5	6.0
Philippines	40	19	12.5	7.8
Thailand	14	14	4.9	2.4
Poland	7	15	3.4	2.6
UK	14	16	3.3	2.5
Brazil	52	19	6.6	3.7
Mexico	39	22	8.3	4.9
United States	75	18	3.8	2.8

A Stable Worker Population

A stable Worker population, the Worker cohort (19-65 years) will only rise 6%, over the next 20 years. This means the state can focus improving productivity, rather than simply creating jobs. A stable population combined with rising GDP, currently growing around 6% each year should lift incomes providing the wealth to upgrade education. Moreover, Vietnam's Youth should be a benefit because the Youth to Worker ratio is 45%, *i.e.* there are plenty of people to refresh the workforce with the ability to learn the skills needed as companies adjust.

	Workers 2023 (million)	Workers 2043 (million)	Change (%)	Young/ Worker Ratio 2023 (%)	Young/ Worker Ratio 2043 (%)
Vietnam	63	67	6	45	35
China	933	801	(14)	31	12
India	885	1,031	17	50	36
Indonesia	175	195	12	48	37
Japan	70	57	(19)	26	21
Malaysia	23	29	27	43	23
Philippines	68	83	23	59	26
Thailand	48	39	(17)	29	23
Poland	24	27	11	29	24
UK	41	44	8	35	26
Brazil	136	133	(2)	38	30
Mexico	79	90	14	50	34
United States	209	214	2	36	29

Favorable Fertility

Rising incomes, better education and improved medical facilities have translated into smaller families. This reduction in family size is accelerated when countries favor boys over girls because fewer girls mean fewer babies. Unfortunately, Vietnam has a similar boy bias to China. However, while Vietnam has seen female fertility drop from 6.6% in 1983, to 3.0% by 2003 and 2.9% in 2013, the decline has slowed. In 2023, 2.5% of fertile women (15-49 years) still had baby girls. Even at the current rates of decline in Female fertility, the number of fertile females will only fall 8% by 2043.

	Boy/Girl births (%)	Female Fertility (%)	Fertile Females 2023 (million)	Fertile Females 2043 (million)	Change (%)
Vietnam	52.5	2.5	26	24	(8)
China	52.5	1.4	319	237	(26)
India	51.8	2.9	379	392	4
Indonesia	51.4	3.0	73	75	4
Japan	51.2	1.6	23	19	(21)
Malaysia	51.5	2.3	9	10	12
Philippines	51.8	2.8	31	34	9
Thailand	51.5	1.6	17	13	(23)
Poland	51.2	1.7	9	8	(6)
UK	51.3	2.2	15	15	2
Brazil	51.0	2.3	56	48	(15)
Mexico	50.9	2.8	35	36	2
United States	51.2	2.3	77	76	(2)

Notes

Female Fertility is the % of Fertile Females having a Female baby in a given year

The number of Fertile Females fall 8% between 2023 and 2043, despite the rise in the Worker Cohort, up 8%, due to a combination of aging and the male female disparity.

Source data

Based on data from United Nations, Department of Economic and Social Affairs, Population Division (2024). World Population Prospects 2024, Online Edition, see <https://population.un.org/wpp/Download/Standard/Fertility/>.

Methodology

We used the UN's Standard data, but then made the following assumptions:

- 1) 2023's survival rates are held constant to project future survival rates for each age band
- 2) 2023 pregnancy rates by age used to generate births, but these were adjusted by the 10 year decline in birth rates 2013-2023 to a minimum of 0 for 15-16, 0.25 for 17 and 0.5 18 and over.
- 3) Babies were allocated based on 2023's boy/girl bias.

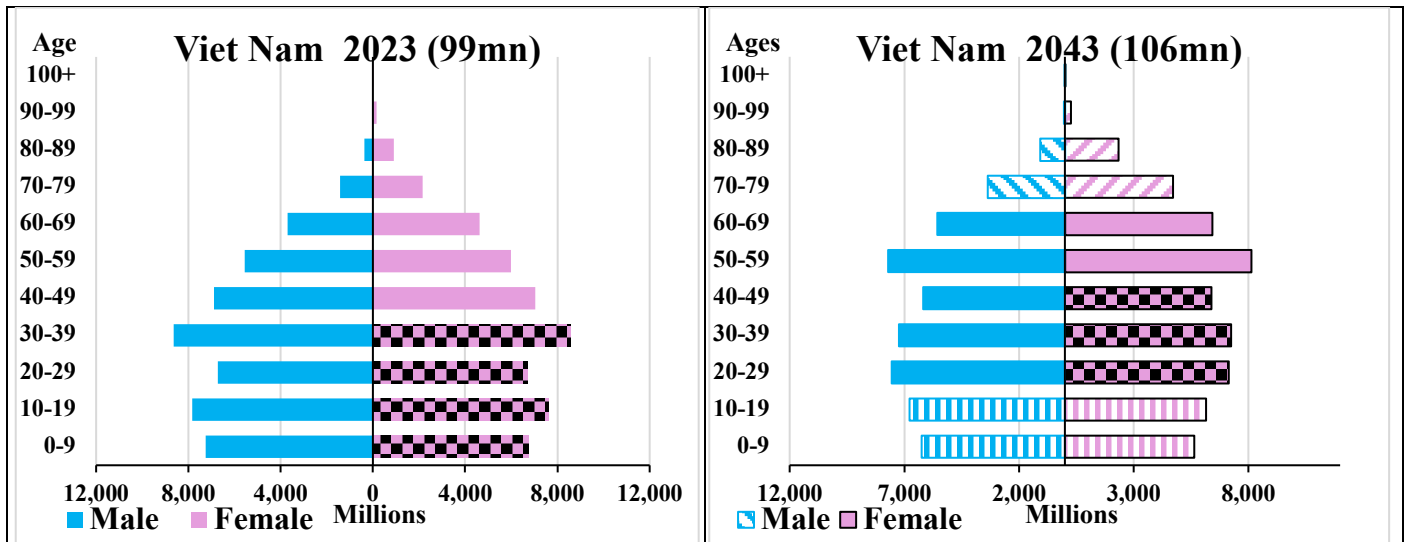
Female Fertility

We focus on the Female Fertility rate (Female children/Fertile Female (15-49) rather than the standard UN Fertility rate which includes all children. We believe the standard fertility rate could be misleading as it implicitly assumes a "natural" the boy/girl ratio. However, a country with a males skewed birth ratio, *e.g.* China and Vietnam, will have fewer female births and therefore fewer babies in the future when compared to a country with the same UN defined fertility rate but with a balanced male/female ratio.

Age Cohorts

Youth	0-18 years
Workers	19-65 years
Aged	66+ years
Fertile Females	15-49 years

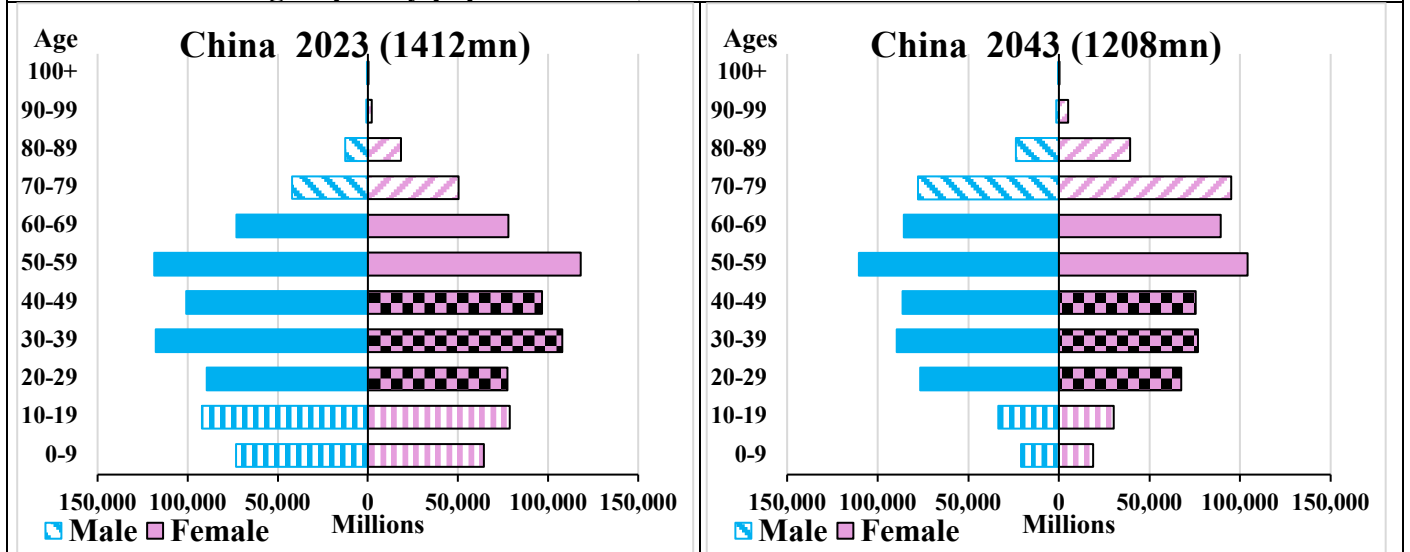
Appendix I: Population pyramids

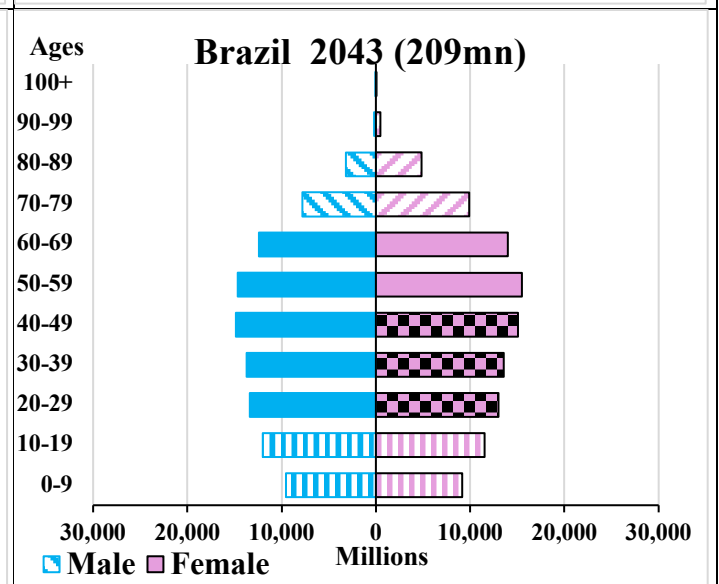
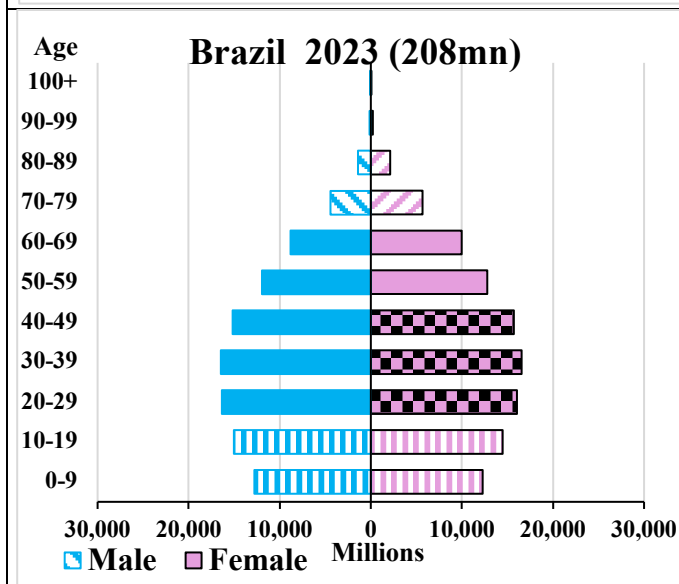
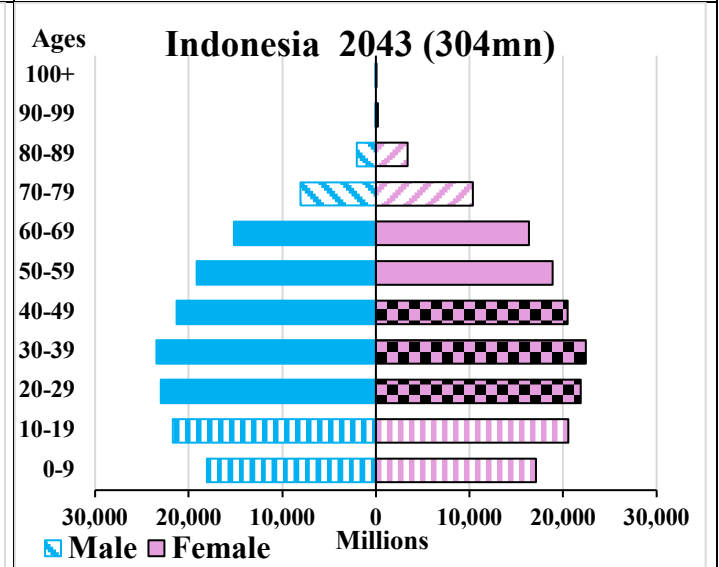
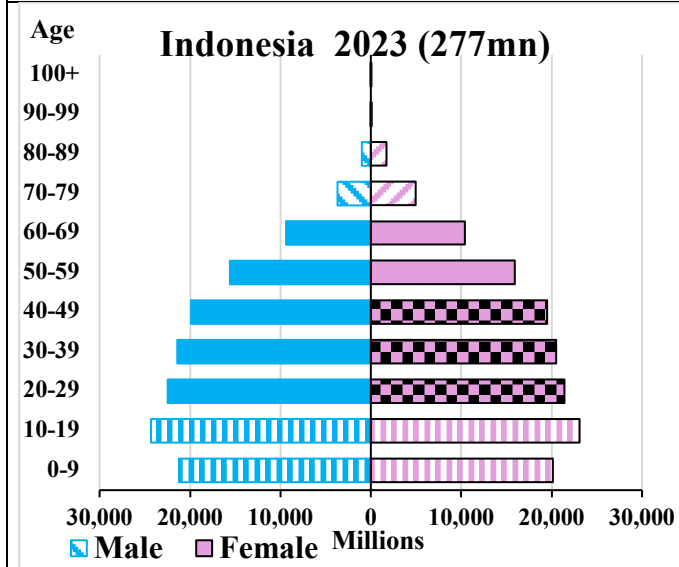
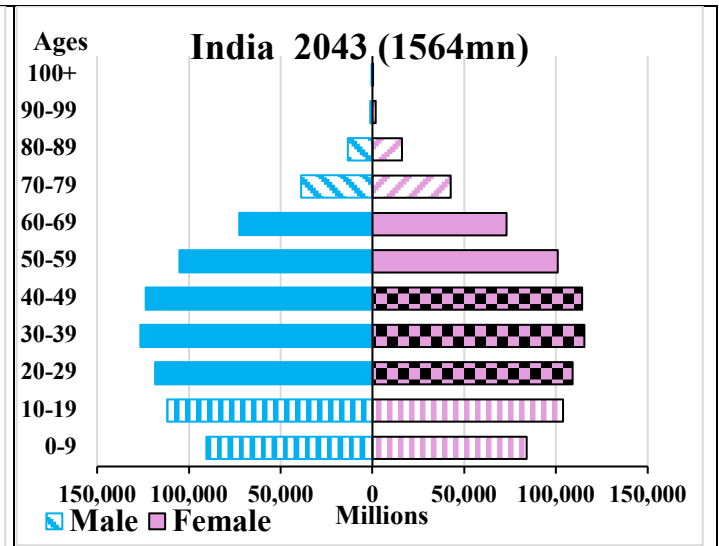
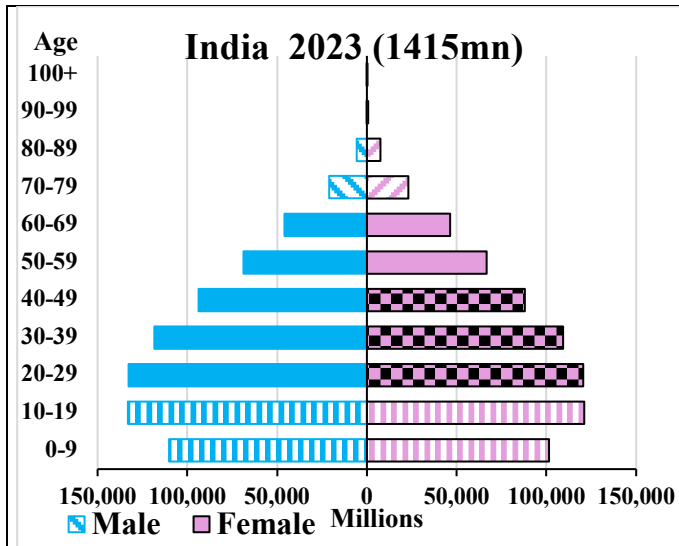


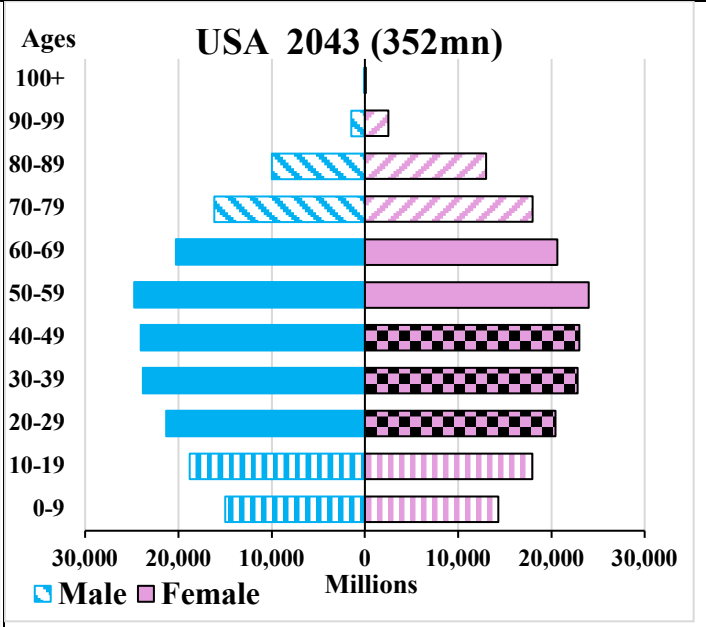
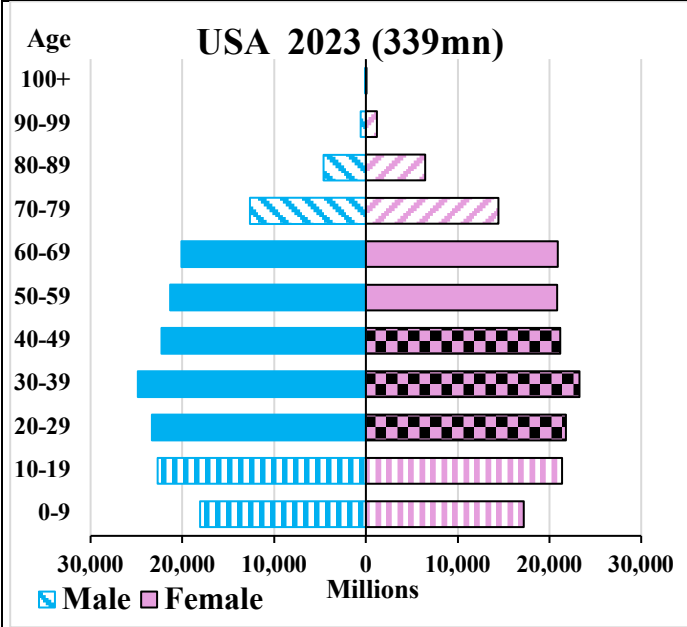
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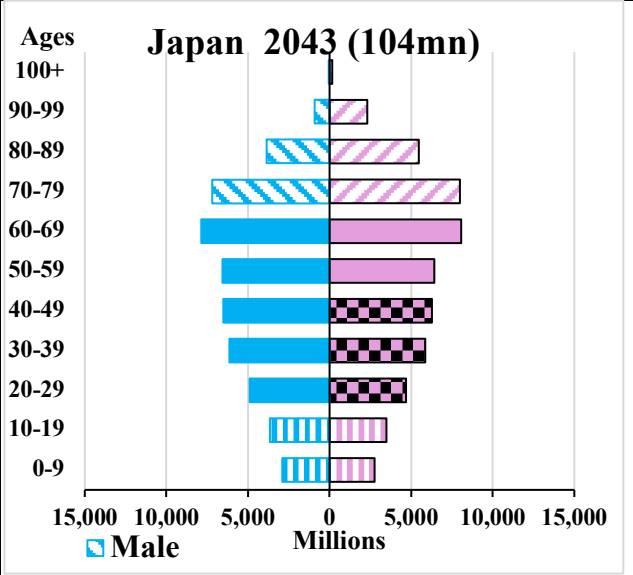
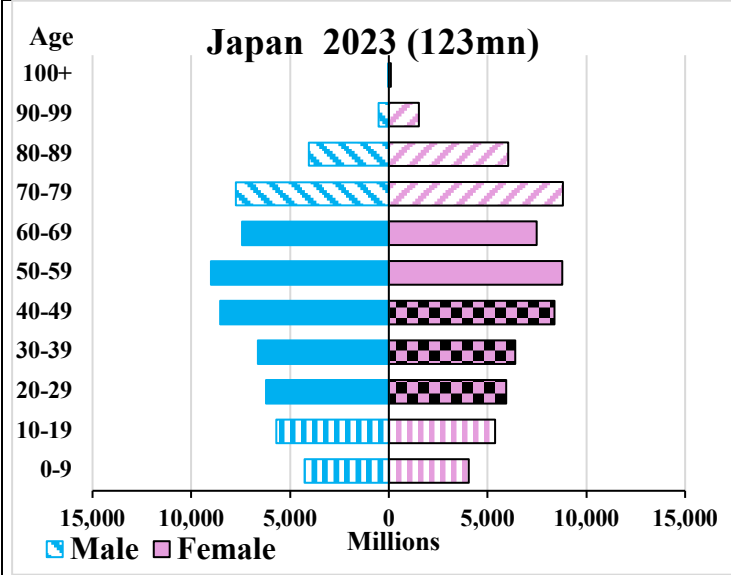
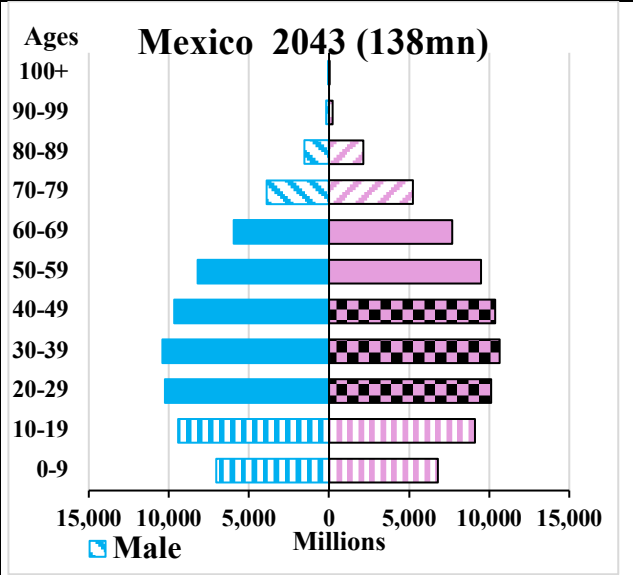
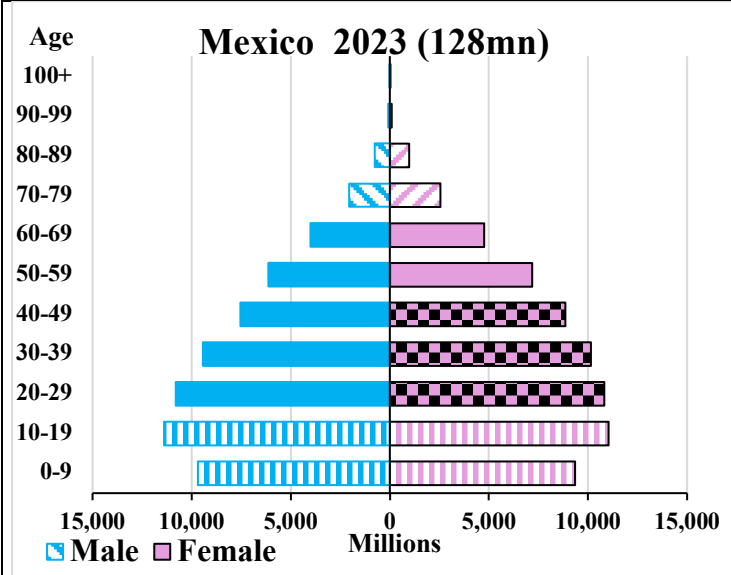
Males on the left, Females on the right, Vertical stripes for Young, Diagonals for the Aged, Pink and black checks for Fertile Females

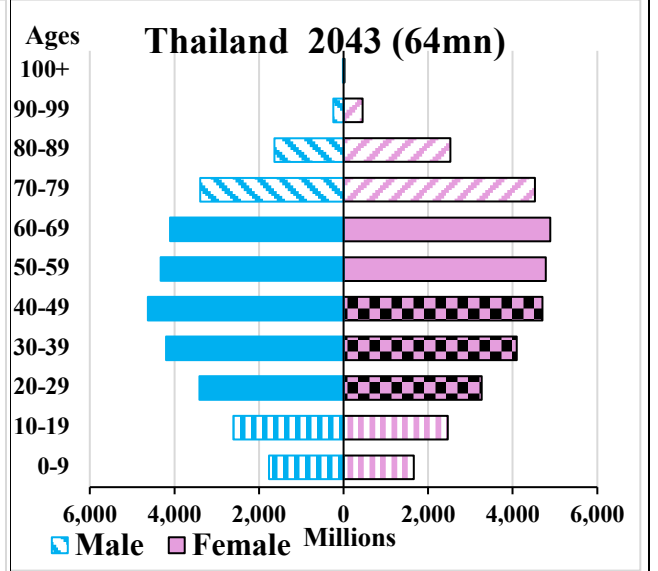
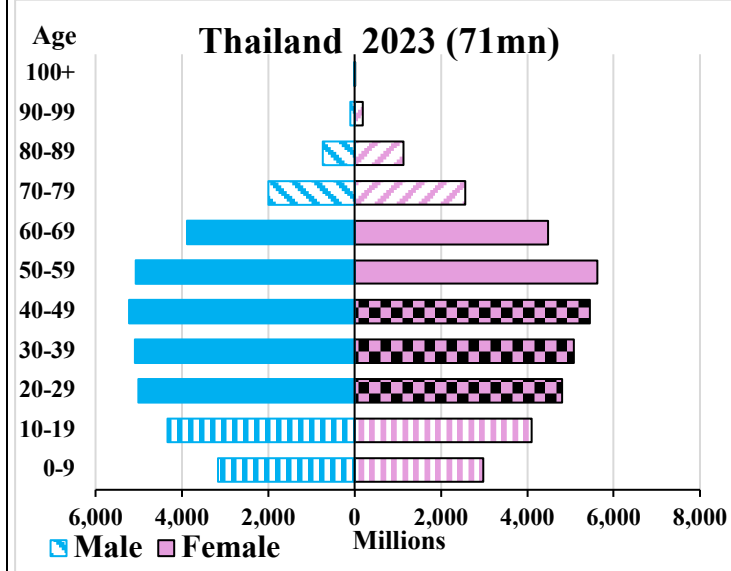
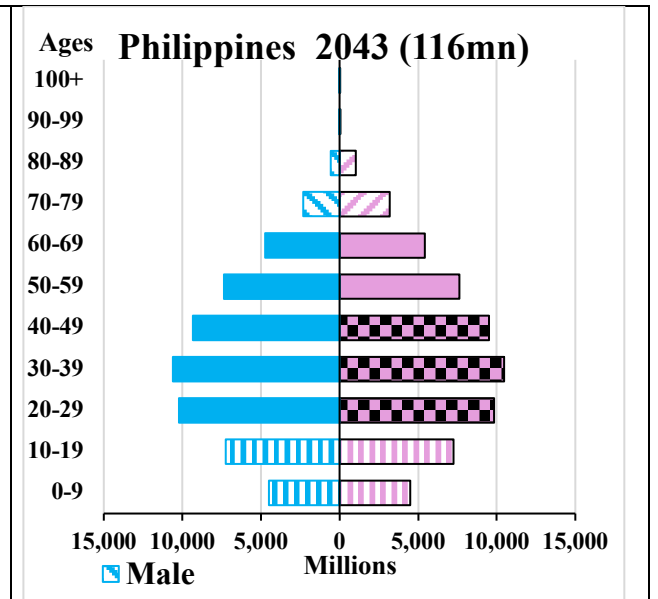
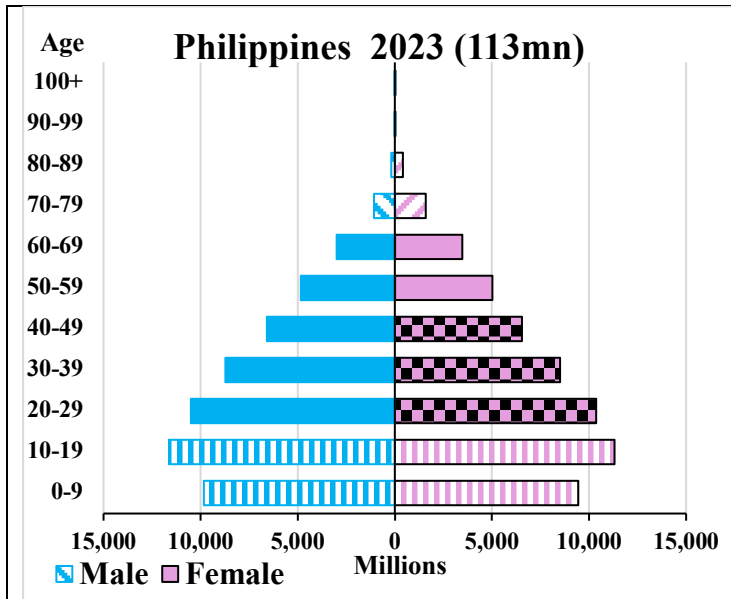
NB Countries are grouped by population size, be aware of the scale on the X axis

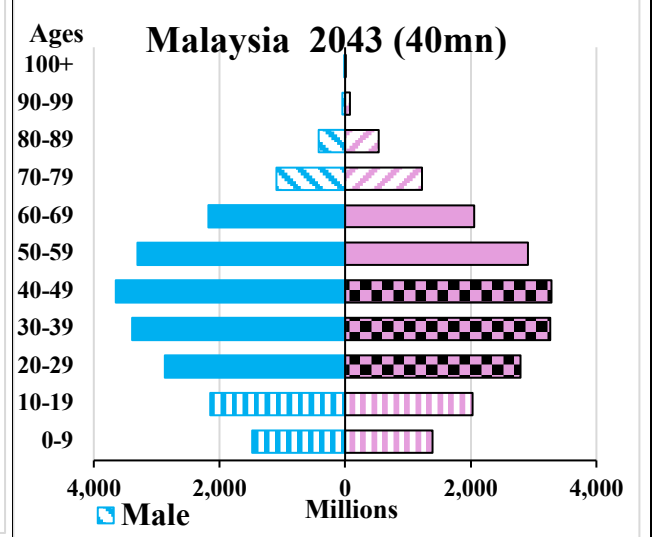
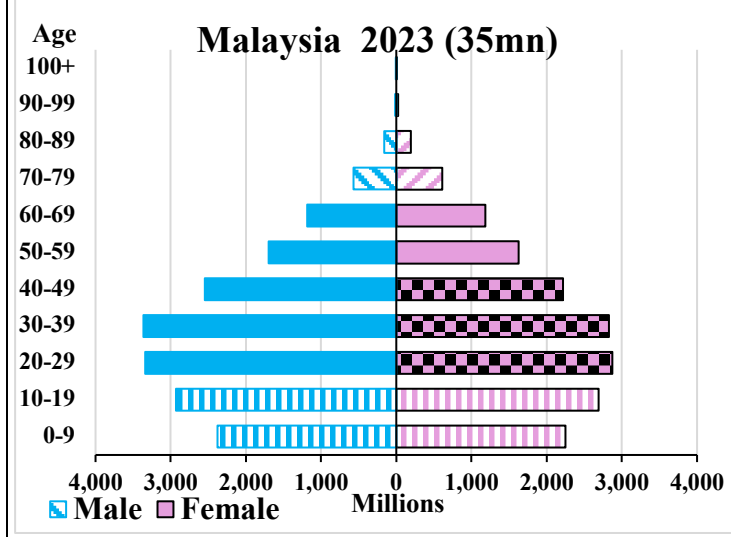
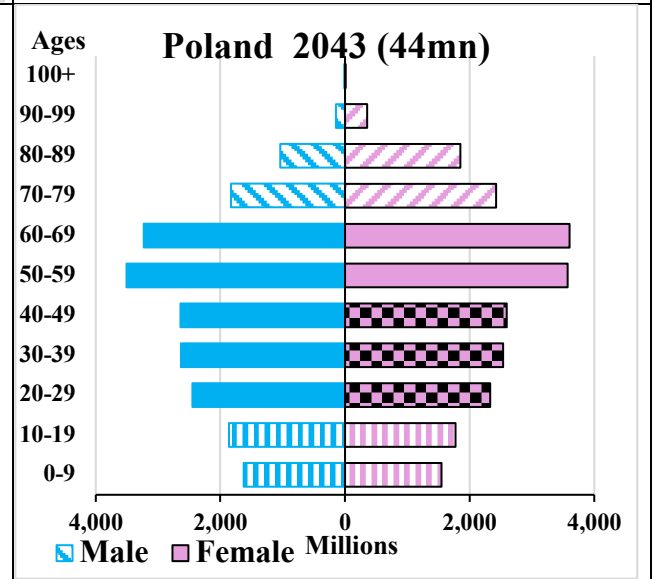
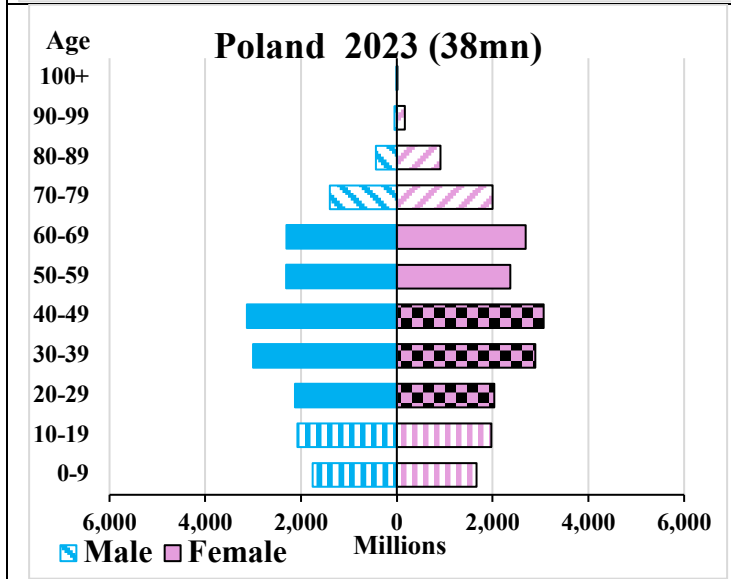
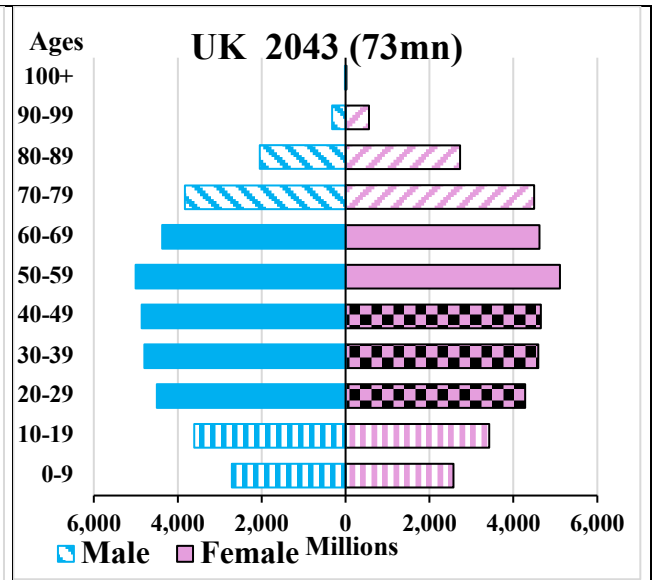
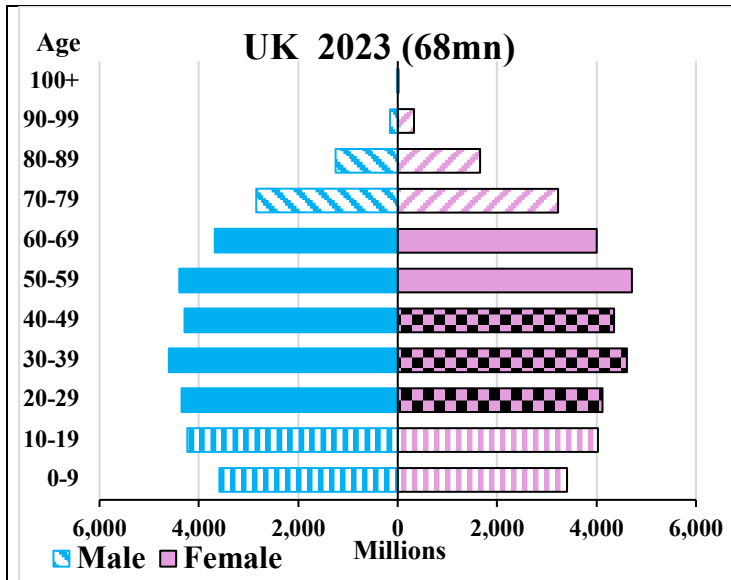












Appendix II: Girls born for every 100 Boys

The difference in birth rates between the 1950s and 2023 suggest that the natural rate is being distorted in most countries. However, China and Vietnam appear to have a much a stronger preference for boys.

	1950	1960	1970	1980	1990	2000	2010	2020	2023
China	94	95	95	94	90	86	85	89	90
Vietnam	95	95	95	95	95	94	91	90	91
Philippines	93	93	93	93	93	93	93	95	93
India	96	95	95	94	94	92	91	93	93
Malaysia	97	96	95	94	93	94	94	94	94
Thailand	97	95	95	95	94	94	94	94	94
Indonesia	97	97	97	95	94	95	95	95	95
UK	95	95	95	95	96	95	95	95	95
Poland	97	95	94	94	95	95	95	95	95
Japan	97	95	94	94	95	95	95	95	95
US	96	96	95	95	95	96	95	96	95
Brazil	98	97	97	97	96	96	96	96	96
Mexico	98	98	97	97	97	97	97	96	96

Appendix III: The % of Fertile Females giving birth to girls in a year

Asian birthrates remained high in the emerging countries well into the 1980s. Since then there has been a steep decline with most countries trending towards 2.3%. Assuming 35 fertile years that is the equivalent of 80% of women having a female child and a similar number having two children.

Drop below 2% and populations will age and decline quite rapidly. China's 1.4% means only 68% of women will have a female child, far below what would be needed to avoid collapse.

Vietnam is still at a healthy 2.5 and this would improve if the Government was able to encourage the population away from its preference for boys.

	1950	1960	1970	1980	1990	2000	2010	2020	2021	2022	2023
China	7.2	5.9	7.8	4.2	4.0	2.2	2.2	1.9	1.6	1.5	1.4
Japan	5.2	3.0	3.0	2.6	1.9	2.0	1.9	1.7	1.7	1.6	1.6
Thailand	8.2	8.7	7.6	4.9	3.3	2.5	2.1	1.7	1.7	1.7	1.6
Poland	5.2	4.4	2.9	3.6	2.8	1.8	2.1	2.0	1.9	1.8	1.7
UK	3.1	3.5	3.5	2.7	2.7	2.3	2.6	2.3	2.3	2.3	2.2
Malaysia	8.6	9.1	6.9	5.8	5.1	4.2	3.1	2.5	2.4	2.3	2.3
Brazil	8.4	8.5	6.8	6.0	4.6	3.5	2.7	2.4	2.3	2.3	2.3
US	4.4	5.0	3.7	3.0	3.0	2.7	2.7	2.4	2.3	2.4	2.3
Vietnam	6.7	8.6	7.4	6.7	5.5	3.0	2.8	2.7	2.7	2.6	2.5
Philippines	9.8	9.6	8.4	7.2	6.5	5.4	4.8	3.3	2.9	2.8	2.8
Mexico	9.2	9.6	9.4	7.3	5.4	4.3	3.6	3.0	2.9	2.9	2.8
India	7.7	8.1	7.8	7.1	6.3	5.0	3.9	3.0	3.0	2.9	2.9
Indonesia	6.8	7.8	7.8	6.4	4.7	3.8	3.5	3.1	3.0	3.0	3.0

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