

Global Economics Comment: Vaccination Timelines: Steep Summer in Asia; Upgrading India and Russia

- Global vaccinations were largely in line with our expectations in June, with Asia outperforming expectations. We upgraded our global production estimate to 13.1 bn doses by year-end (vs. 12.4 bn a month ago) following upside surprises from Chinese producers.
- The share of the world population with a first dose rose by 7pp to 25% in June, reflecting progress in North Asia, Western Europe, and India and should reach 34% by the end of July, although daily vaccinations are likely peaking. We still look for 50% of the world to be vaccinated with a first dose in November.
- Among DMs, all of the big four European countries vaccinated 50% of their populations with a first dose in June, as we had expected. Canada accelerated further (second doses) while the US (demand saturation) and the UK (mRNA supply constraints) slowed. Japan's acceleration stood out in June, and we expect the pace to increase further as supply remains very strong. Australia's acceleration was also strong, albeit slightly disappointing by the end of the month, but vaccinations should pick up with Pfizer deliveries in coming months. We still expect 50% of the population to be vaccinated with a first dose in late August in Japan and early September in Australia.
- The pace of vaccinations among many EMs picked up in late June as supply constraints eased. China again led the pack, meeting its goal to vaccinate 40% of the population fully by the end of June. Vaccinations also picked up in Brazil (34% first dose) and India (20%), were moderate in Mexico (24%) and slow but increasing in Russia (16%) and South Africa (5%). We significantly upgraded our timelines for Russia, following government vaccine mandates, and much of South (East) Asia where distribution has been quicker than expected.
- We expect 50% of the population to receive a first dose in early July in China (unchanged), early August in Brazil (mid-August previously), mid-September in Mexico (late August), late October in India (December), November in Russia (2022), and early 2022 in South Africa (December). Across most other supply-constrained EMs, vaccinations should pick up in coming months.
- Combining these vaccination timelines with estimates of infections, we estimate that our total immunity proxy has already hit 60% in the US, UK, and India, and will hit 60% in July in the EU and Brazil, October in Russia, November in China, and December in Japan.

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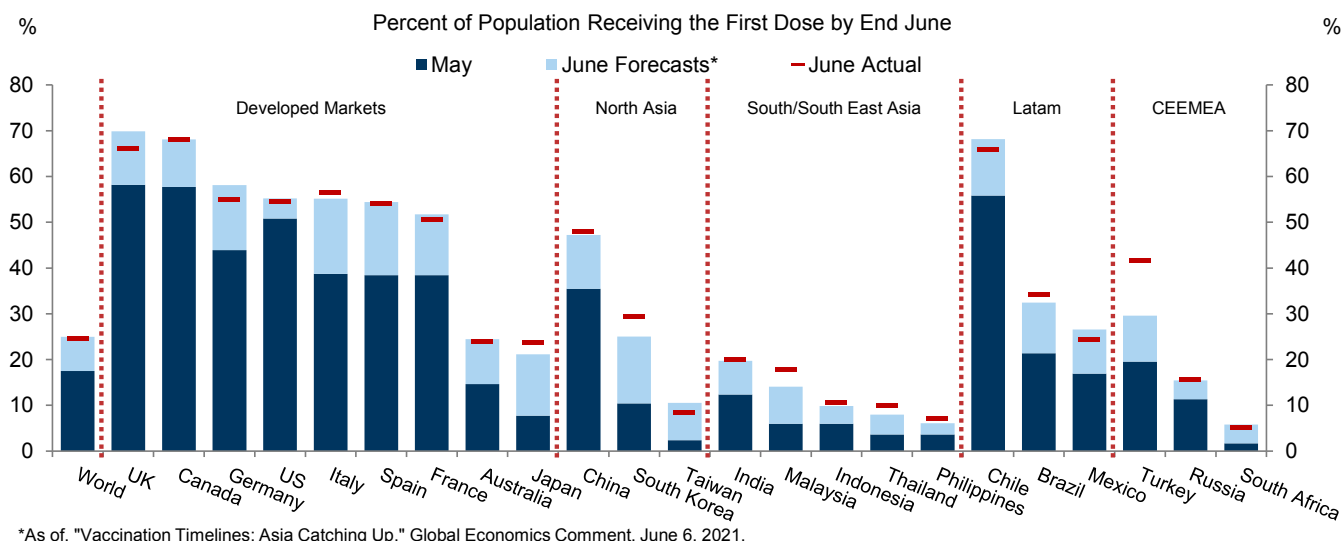
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Vaccination Timelines: Steep Summer in Asia; Upgrading India and Russia

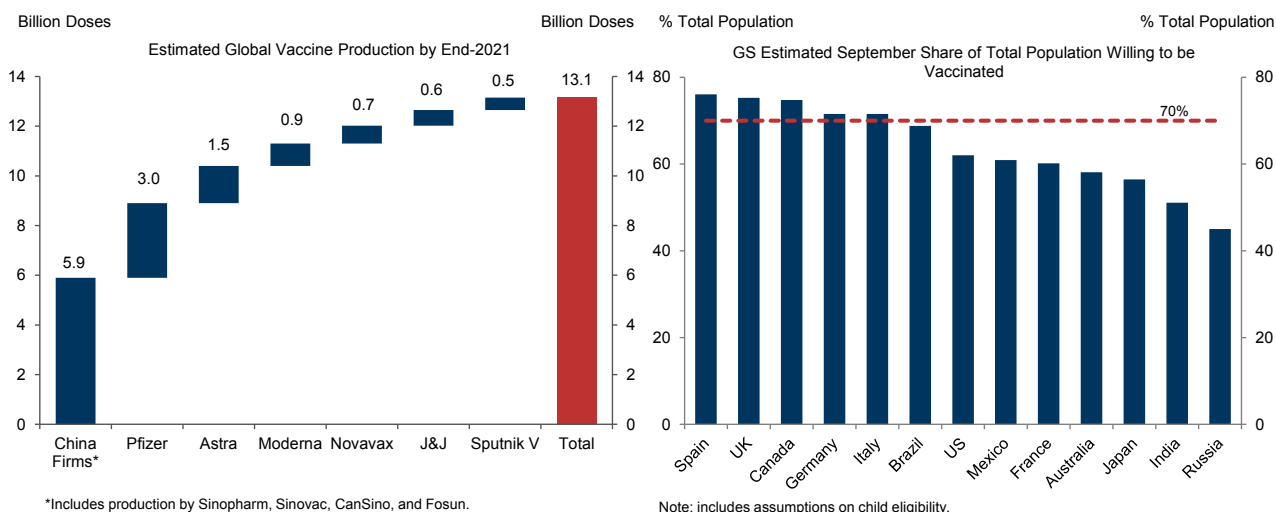
Exhibit 1: Global First Dose Vaccinations Were Largely in Line With Our Forecasts in June, With Asia and Turkey Outperforming Expectations



To estimate the share of the world population vaccinated with a first dose, we take the Our World in Data estimate and then add our internal estimates for China and Saudi Arabia, as these countries do not provide a regular first dose split.

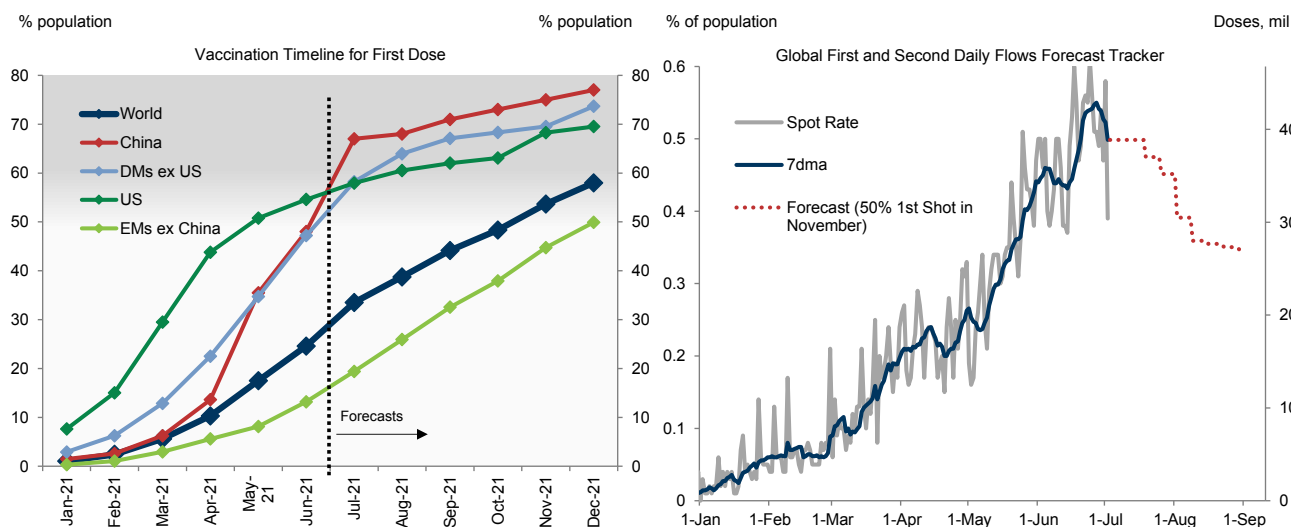
Source: Our World in Data, Goldman Sachs Global Investment Research

Exhibit 2: We Have Upgraded Our Global Production Estimate to 13.1 Billion Doses by End-2021 Following upside Surprises from China and Russia Vaccine Demand Following Mandates and Restrictions on the Non-Vaccinated



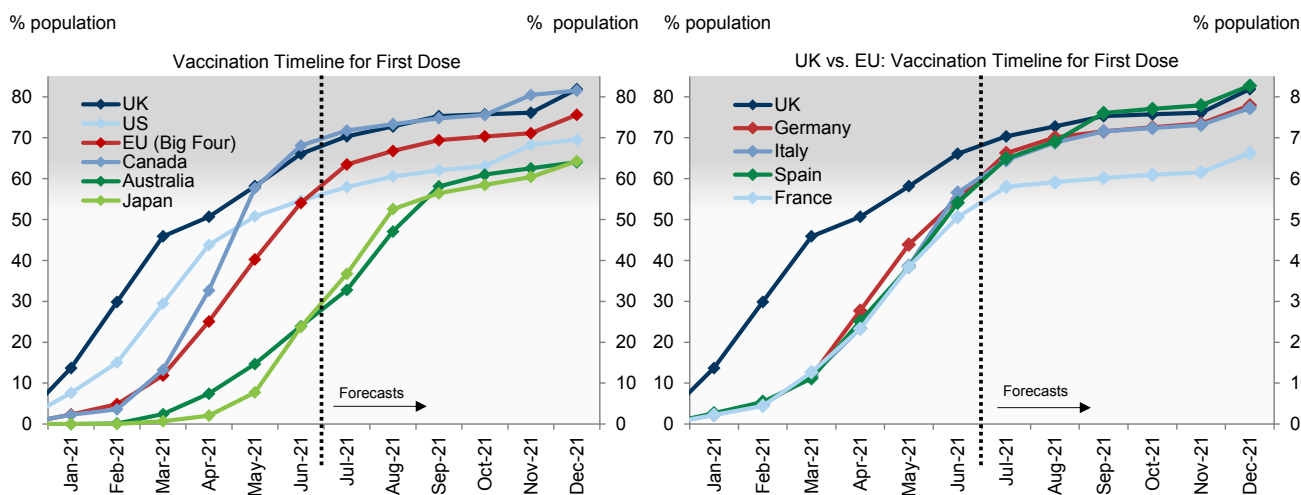
Source: Goldman Sachs Global Investment Research

Exhibit 3: We Expect the Share of the World Population Vaccinated with a First Dose to Increase from 25% Now to 34% By the End of the Month Although Daily Vaccinations Are Likely Peaking



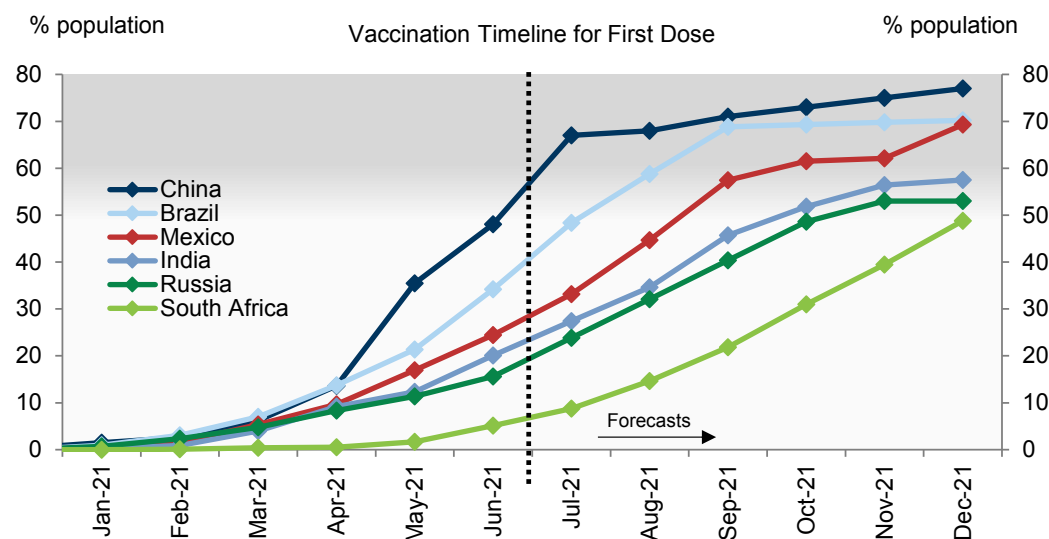
Source: Goldman Sachs Global Investment Research

Exhibit 4: We Still Expect 50% Of the Population to Be Vaccinated with a First Dose in Late August in Japan and Early September in Australia. Year-End DM Vaccinations Look Set to Be Highest in Spain, the UK, Canada, Germany, and Italy



Source: Goldman Sachs Global Investment Research

Exhibit 5: We Expect 50% Of the Population to Be Vaccinated with a First Dose in Early July in China (Unchanged), Early August in Brazil (Mid-August Previously), Mid-September in Mexico (Late August), Late October in India (December), and in November in Russia (2022). We Expect South Africa to Be Just Under This Mark at the End of the Year (December)



Source: Goldman Sachs Global Investment Research

Exhibit 6: Globally, Vaccinations Are Mostly Still Supply Constrained

Country	Region	% population vaccinated (first dose) as of 3 July 2021 or latest available	% population vaccinated (first dose) by end of July	Month where 50% vaccinated 1st dose	Month where 50% fully vaccinated	Currently binding constraint [^]	Main/top vaccine provider ^{^^}	Contact
<i>Developed Markets</i>								
US	North America	55	58	May	Jul	D	Pfizer/BioNTech	sid.bhushan@gs.com
Canada	North America	68	72	May	Jul	D	Pfizer/BioNTech	sid.bhushan@gs.com
Germany	Europe	55	66	Jun	Jul	S	Pfizer/BioNTech	sid.bhushan@gs.com
France	Europe	50	58	Jun	Aug	S	Pfizer/BioNTech	sid.bhushan@gs.com
Italy	Europe	57	64	Jun	Aug	S	Pfizer/BioNTech	sid.bhushan@gs.com
Spain	Europe	56	65	Jun	Jul	S	Pfizer/BioNTech	sid.bhushan@gs.com
UK	Europe	66	70	Apr	Jul	S	AstraZeneca	sid.bhushan@gs.com
Japan	Asia	24	37	Aug	Sep	L	Pfizer/BioNTech	sid.bhushan@gs.com
Australia	Asia	25	33	Sep	Nov	S	Pfizer/BioNTech	sid.bhushan@gs.com
<i>Emerging Markets</i>								
China	Asia	49*	67	Jul	Jul	S	Sinovac/Sinopharm	helen.hu@gs.com
India	Asia	20	27	Oct	2022	S	AstraZeneca/Covaxin	suraj.dhunna@gs.com
Indonesia	Asia	12	19	Dec	2022	L	Sinovac	rina.jio@gs.com
Philippines	Asia	7	16	Dec	2022	S	Pfizer/BioNTech	rina.jio@gs.com
Thailand	Asia	11	30	Sep	Nov	S	AstraZeneca	rina.jio@gs.com
South Korea	Asia	30	34	Aug	Sep	S	Pfizer/BioNTech	irene.choi@gs.com
Malaysia	Asia	19	38	Aug	Sep	L	Pfizer/BioNTech	rina.jio@gs.com
Taiwan	Asia	9	24	Sep	Dec	S	AstraZeneca	helen.hu@gs.com
Turkey	CEEMEA	42	59	Jul	Oct	S	Pfizer/BioNTech	tadas.gedminas@gs.com
South Africa	CEEMEA	5	9	2022	2022	S	Johnson & Johnson	tadas.gedminas@gs.com
Russia	CEEMEA	17	24	Nov	2022	D	Gamaleya	tadas.gedminas@gs.com
Brazil	LatAm	36	48	Aug	Oct	L	AstraZeneca/Pfizer/BioNTech	daniel.moreno@gs.com
Mexico	LatAm	25	33	Sep	Oct	S	AstraZeneca/CanSino	daniel.moreno@gs.com
Chile	LatAm	66	72	May	Jun	D	Sinovac	daniel.moreno@gs.com

* We estimated China's figure from the official daily report of total doses administered.

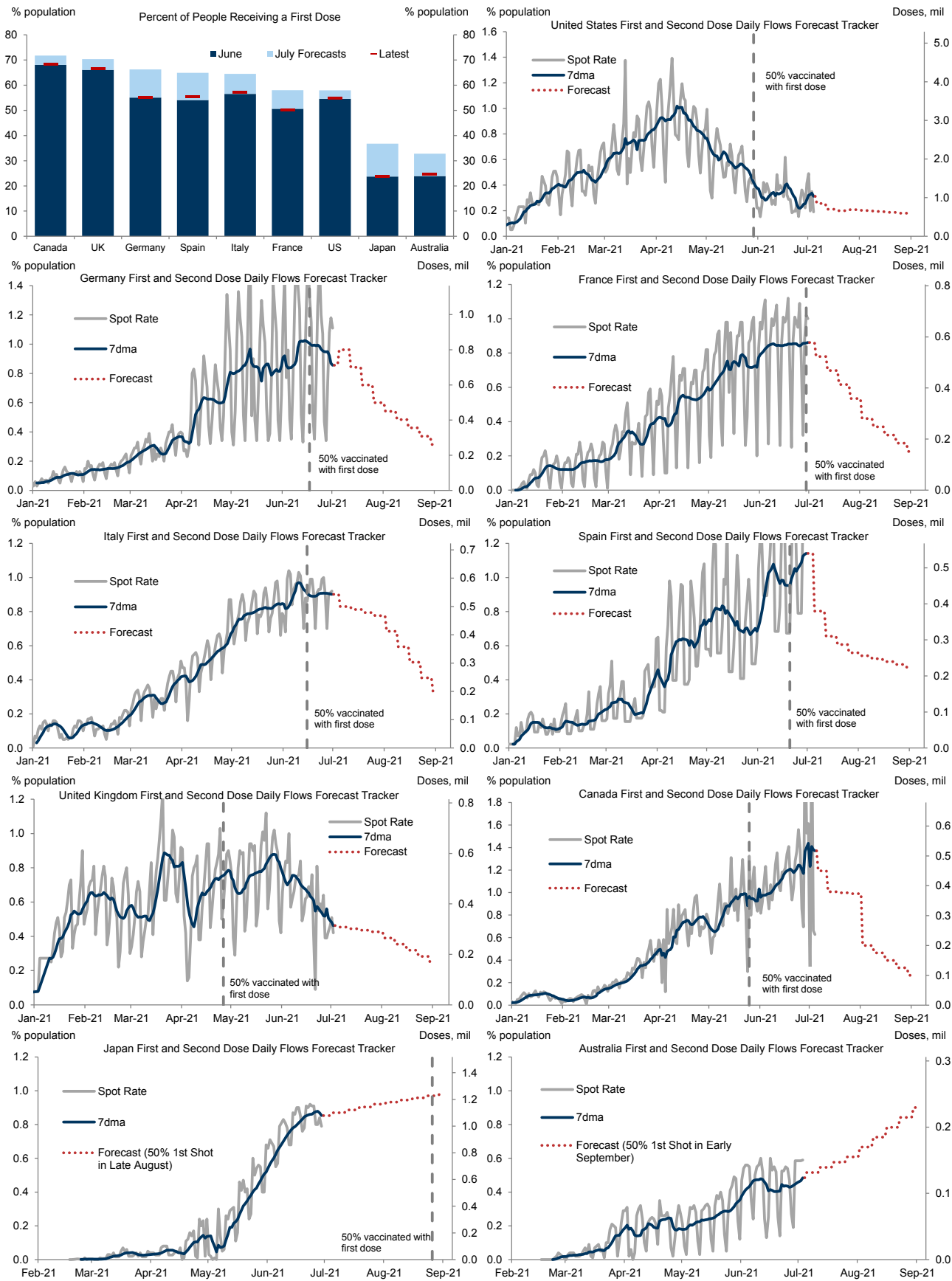
[^] S = supply constraint; L = logistics/distribution constraint; D = demand constraint, including government's restrictions on eligible age groups.

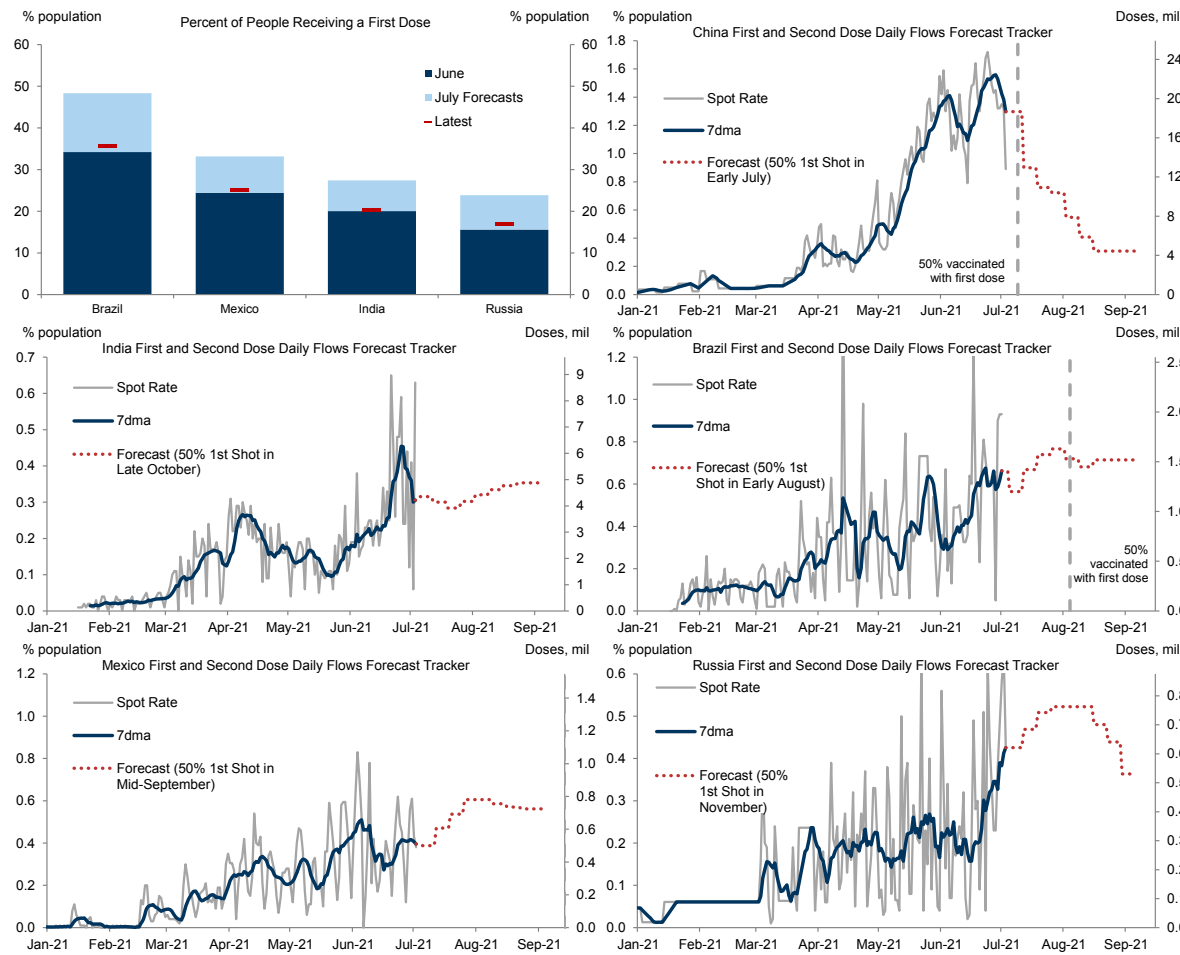
^{^^} Of total planned supply per 1 June 2021. By number of treatments (1/2 dose per person).

Note: countries are ordered by population size in each region (descending).

Source: Goldman Sachs Global Investment Research

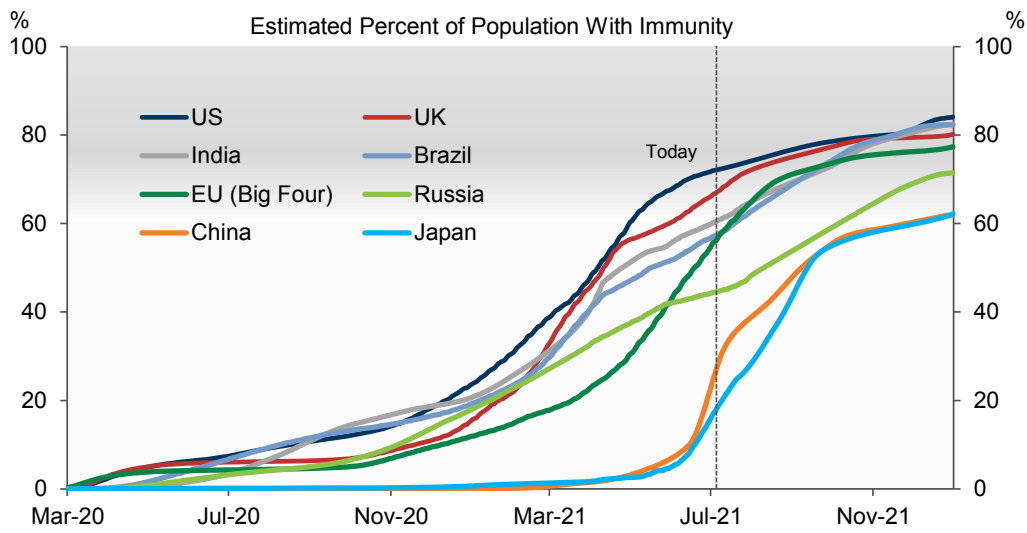
Exhibit 7: We Are Tracking Our Medium-Run Monthly Forecasts Based on an Example Path for Daily Flows of Total Vaccinations





Source: Goldman Sachs Global Investment Research

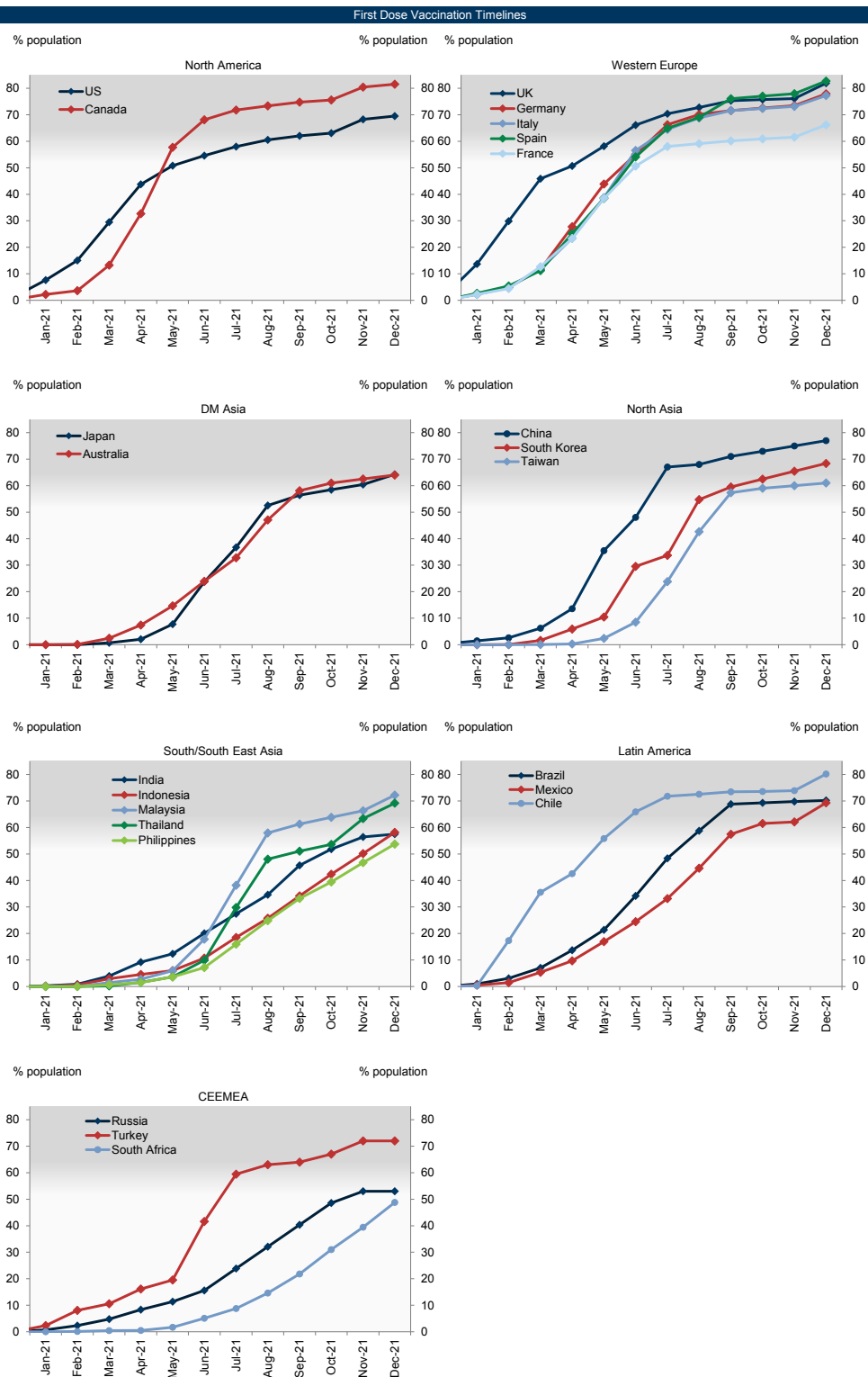
Exhibit 8: Combining These Vaccination Timelines with Estimates of Infections, We Estimate That Our Total Immunity Proxy Has Already Hit 60% In the US, UK, and India, and Will Hit 60% In July in the EU and Brazil, October in Russia, November in China, and December in Japan



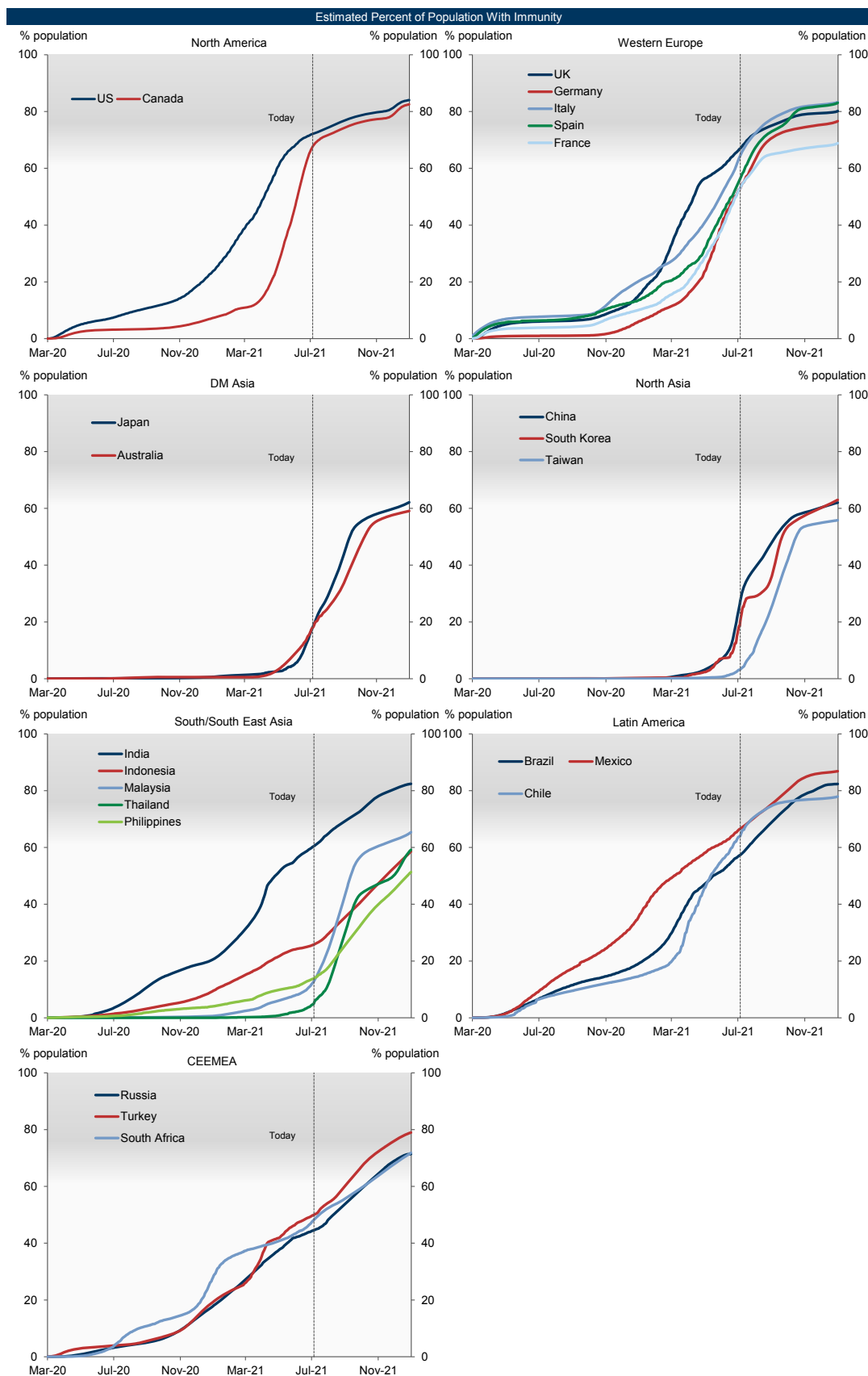
Source: Goldman Sachs Global Investment Research

Appendix

First Dose Vaccination Timelines



Source: Goldman Sachs Global Investment Research

Exhibit 9: Estimated Percent of Population With Immunity

Source: Goldman Sachs Global Investment Research

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