Just in case you don’t know, The Middle Class pays for all those millions of COVID-19 vaccines with higher taxes, They are not free

Omicron happened this week. 12-2021

And with the arrival of this new variant all the depressingly familiar potential pain points come tumbling back — along with some brand-spanking new ones.

On Thanksgiving (just nine days ago) we could really believe that COVID was winding down. Yes there was Delta and hot spots, but we were on a path. Then on Black Friday, (giving new meaning to the day) Omicron hit, and soon after cases all over the U.S.

We don’t know what Omicron means for us yet — other than maybe cancelling a holiday trip to Europe, (as my family is contemplating right now). The ambiguity is excruciating: How fatal is Omicron? How contagious? How resistant to vaccines? We’re even uncertain how to pronounce it, (either way: “OH-mee-kraan” or “AH-muh-kraan”). For millions around the world the stakes could be deadly.

Consider too, the people in the business of making COVID-19 vaccines. Talk about going into scramble-the-jets mode. Like us, these scientists and executives were beginning to get into a routine. Only instead of settling into a back-to-work cadence and taking real vacations again, they were finding a rhythm of rollout and deployment for their COVID fighting medicines.

Now they may have to reconfigure everything to fight Omicron. Fortunately, when it comes to Messenger RNA (mRNA) vaccines at least, (such those from Pfizer and Moderna), adaptability is at the very core of the science. Still it will be a pretty major pivot.

Just to give you an idea, in an interview with the Financial Times this week, Moderna CEO Stéphane Bancel predicted existing vaccines will struggle with Omicron. “There is no world, I think, where [the effectiveness] is the same level ... we had with [the] Delta [variant],” Bancel said. “I think it’s going to be a material drop. I just don’t know how much because we need to wait for the data. But all the scientists I’ve talked to ... are like, ‘This is not going to be good.’”
On the other hand, Yahoo Finance’s Anjalee Khemlani, (who’s been doing an awesome job covering all things COVID-19 for us), points out here that Pfizer (PFE) CEO Albert Bourla and partner BioNTech (BNTX) CEO Uğur Şahin both expressed confidence in their vaccine against Omicron.

(Andrew Romano and Sam Mathews at Yahoo News put together excellent explainers here and here laying out how Omicron could unfold over the coming months.)

And so as the medical world shifts to a yet-to-be-determined degree, a question comes to mind: Who will pay for all this? In fact, who’s paid for all the COVID-19 fighting to date? As I’m sure you’ve noticed, vaccines are 100% free. But nothing’s really free, right?

The simple answer is that mostly we pay, or rather, the government does through our tax dollars, (though insurance companies and hospitals have also been assuming some costs). Following that money as it wends its way through the system is far less simple though, and it also raises the question of who owns the rights to the vaccines and what’s a fair rate of return for a product that was funded to a large degree by public dollars. Then there’s the matter of what the obligations these companies have when it comes to providing vaccines not only to U.S. citizens but to the rest of the world.

Note that the fight against COVID-19 also entails tests and medicine, but I’m just going to focus on vaccines, as it’s a critical and deep topic that also happens to be rich with drama.

First you should know that the U.S. government has been in the business of funding vaccines long before COVID-19. Yes there have been ups and downs here, and if you ask scientists there’s never enough money, but no one can deny its significance.

“We’ve had a large public health infrastructure that does vaccination forever and ever,” says Sherry A. Glied, an economist and the dean of the Robert F. Wagner Graduate School of Public Service at New York University. “A lot of vaccines are provided for free by public health departments and a lot of vaccines are provided with no out-of-pocket cost because insurers are required to cover them. For the most transmissible, communicable diseases that are vaccine preventable, people should be able to get them at no cost either through public health or by insurance. It’s true of most childhood vaccines as well. Even the flu vaccine — most people are getting it for free one way or another. The COVID vaccine falls into that bucket.”
Vaccine funding takes several forms. For instance, there’s BARDA (Biomedical Advanced Research and Development Authority), an office of the U.S. Department of Health and Human Services, which “works with the biomedical industry, using grants and other assistance, to promote advanced research, innovation and the development of medical devices, tests, vaccines and therapeutics.”

BARDA has given U.S. medical companies billions of dollars for vaccine research (such as for a HIV vaccine) well before COVID, including hundreds of millions to help create “the mRNA platform ... to produce vaccines in response to the threat of pandemic flu,” according to this Health Affairs Blog.

Once COVID-19 hit however, government spending went into overdrive. This BARDA website maps out the vast sums the government has put out to fight the pandemic. Focus on just the vaccine efforts page and you can see that billions went to seven companies; Pfizer, Moderna, Janssen (part of Johnson & Johnson), Sanofi, AstraZeneca, Novavax and Merck — the latter of which is “no longer supported,” after Merck failed to produce a vaccine.

(Sidebar here: Merck has been focusing instead on a therapeutic oral medicine (aka pill) that won preliminary approval this week and could be available as early as next month. There have been questions however about the efficacy and safety of the pill. “In the coming weeks, the FDA may also authorize a similar pill from Pfizer that appears to be significantly more effective than Merck’s,” according to The New York Times.)

The Congressional Budget Office has calculated that BARDA alone has spent over $19 billion on vaccines, (there are other agencies like the Defense Department that have provided funding too, see below), at least half of that spend was buying vaccines for the American public from Pfizer, Moderna and J&J (from biggest to smallest). Overall, Moderna has received some $9 billion from the government while Pfizer has received over $10 billion from the government, but with important differences.

Unlike Moderna, Pfizer took no money from the government to develop the vaccine, as “Pfizer’s chief executive, Albert Bourla, said he didn’t want any government interference,” according to the Boston Globe.

The Globe story also notes that “in exchange for assuming the risk of developing the vaccine, Pfizer charged the government more for each dose in its initial contract, about $19.50, compared with $15 a dose on average charged by Moderna. Moderna’s vaccine also has had a far bigger impact on the biotech [company] than Pfizer’s vaccine has had on the pharmaceutical
giant. Moderna, an 11-year-old company, had never gotten a product to market before the FDA cleared the vaccine. In contrast, the 172-year-old Pfizer is one of the world’s biggest drugmakers, with dozens of products on the market.”

Got that right, and the proof is in the stock chart. Since March 1, 2020, Pfizer is up a tidy 70%, but that pales compared to Moderna (MRNA), which is up over 1100%. Moderna CEO Bancel’s 7.9% stake in the company is now worth $11.2 billion. Whoa.

Let’s drill down into Cambridge Mass.-based Moderna a bit more, because it’s the purest-play (now major) pharma-biotech COVID company and because many in the scientific community were skeptical of the company as it hadn’t produced a product and because it had what some called a secretive culture. The company proved the skeptics wrong and succeeded wildly, but now finds itself embroiled in battles on a number of fronts, which I’ll get to below.

Moderna makes money from three buckets; the smallest it calls collaboration revenue, which is money it garners from licensing fees and royalties, The second bucket is grant revenue from BARDA, the Defense Advanced Research Projects Agency (or DARPA) and the Bill and Melinda Gates Foundation.

But the real action has been in bucket No. 3 or product sales or sales of the COVID vaccine. Revenue there was $10.7 billion over the past nine months through September, up from zero the prior year. Much of that money as we’ve seen came from BARDA — as well as DOD and other agencies — and from foreign governments as well. “Investment in the research was basically done by pre-purchasing doses of vaccines,” says Cynthia Cox, vice president at the Kaiser Family Foundation. “Generally speaking that’s the way that governments tend to finance it.”

As noted the $15 a dose for each vaccine the U.S. has reportedly been paying Moderna is an average. For instance, here’s a DOD contract that seems to suggest it paid $16.50 per dose. In fact prices for vaccines are all over the map (literally), based on efficacy, dosage (for instance the Johnson & Johnson vaccine is a single dose) or whether a country or the EU contributed to the funding of the vaccine’s development. For instance this BMJ article reports that the EU, which did not subsidize the Moderna vaccine, pays $18 per dose.

If you assume that most of Moderna’s sales were to the U.S. government at that $15 per dose rate and go back to that $10.7 billion in revenue, the math works out to 713 million doses, which directionally matches the number, 770 million, the company says it has made (see chart below.) Bloomberg notes that
Moderna would have sold more if not for logistical problems, which it conveyed to Wall Street early last month, with its stock tanking on the news.

Moderna COVID vaccine shipments. Chart via Bloomberg. Earlier this year, BMJ reported that “Israel ... acknowledged paying $23.50 per dose on average to Pfizer and Moderna to obtain early shipments. Uniquely, Israel agreed to give Pfizer anonymised health data from all of its citizens as part of the deal.”

Another interesting note from BMJ is that “AstraZeneca and Johnson & Johnson have committed to not making a profit from the pandemic, while Moderna and Pfizer did not. AstraZeneca reserved the right, however, to declare the pandemic phase over and take profits from later vaccine sales.”

Why do governments pay for vaccines anyway? Presumably there are altruistic reasons, i.e., saving lives, but also to be honest, paying for vaccines is cheaper than the alternative. For example, even at that high price Israel paid for its vaccines ($23.50 per dose) BMJ says that vaccinating that country’s entire population costs the economy only as much as two days of lockdown.

And of course there’s the huge cost of an unvaccinated populace. “It’s costing Americans billions of dollars over the last several months to hospitalize people who could’ve had their hospitalization prevented if they had gotten the vaccine,” says Cynthia Cox. Cox looked at the cost of “people hospitalized after June, when they would've been able to be fully vaccinated. We accounted for the fact that vaccines are not able to prevent all hospitalizations. Even after accounting for that and lowballing the cost of hospitalization, it still adds up to a few billion dollars over the last few months.”

Cox also points out there are inevitable incremental costs even with vaccinated populations that are less recognized. “There’s the cost of administering the vaccine. It’s not just about producing the vials — you also have to get the shots into arms. Through [recently passed] legislation, insurance companies are required to cover the cost of administering the drug.”

In fact, iShares U.S. Healthcare Providers ETF (IHF) has underperformed the market a bit since March 2020, suggesting that COVID (the dominant health care event of this time) has not been a net positive for that business.

Dr. Gerard Brogan, chief revenue officer for Northwell Health and professor of emergency medicine at Zucker School of Medicine in New York, adds more color here: “Reimbursement for vaccines were roughly $30 for the material,
and the cost was another roughly $60 to administer the vaccine,” he says. “A portion of the staff, syringes, needles, alcohol wipes, all of those things are needed to administer the vaccine safely. For us as a health system, it was roughly $2 million to $3 million per month we were spending unreimbursed to perform this public health function.”

At the core of all this though are the vaccines. And as such you can see how critical a company like Moderna has become not only to the United States, but to the world. It’s in a complicated position and the sailing is not so smooth. Besides its aforementioned growing pains, the company must compete against industry behemoth Pfizer.

**In an interview with Anjalee Khemlani**, Pfizer CEO Albert Bourla noted that “we changed, dramatically, our strategy. We had invested to produce 1.3 billion doses for 2021, when we realized the situation, we put way more investments into the system and we were able to raise the volumes to 3 billion for this year, and 4 billion for next year.” **Bloomberg reports** that Pfizer recently **raised its 2021 forecast** for vaccine sales to $36 billion.”

Moderna, on the other hand, expects 2021 sales of $15 billion to $18 billion from the COVID-19 vaccines and up to $22 billion next year. Why the difference?

First of all big companies like Pfizer have factories already in place, plus existing relationships with suppliers and seasoned supply-chain experts. Also Pfizer’s vaccine for children has been approved in the U.S., while Moderna’s higher-dose vaccine still awaits approval. (And unlike Moderna, Pfizer has **That COVID-19 pill in its pipeline which could reduce demand for vaccines**.)

Then there’s Moderna’s nasty little tiff with the National Institutes of Health (NIH), which **The New York Times** first reported early last month. In a nutshell, Moderna is saying that NIH scientists who worked on developing the mRNA vaccine early on shouldn’t be credited with inventing the vaccine, because Moderna says, “only Moderna’s scientists designed” the actual vaccine. The Times notes:

“The dispute is about much more than scientific accolades or ego. If the three [NIH] scientists are named on the patent along with the Moderna employees, the federal government could have more of a say in which companies manufacture the vaccine, which in turn could influence which countries get access. It would also secure a nearly unfettered right to license the technology, which could bring millions into the federal Treasury.” Watch this space. It could get ugly.
Another bugaboo for Moderna is that some medical experts take issue with the company's plan to distribute vaccines to the rest of the world. Doctors Without Borders has called for Moderna to immediately share its vaccine technology and know-how with the World Health Organization. Ditto for the People’s Vaccine Alliance.

“The four-year timeline proposed by Moderna to bring vaccines to low- and middle-income countries is unconscionable,” writes Carrie Teicher, a physician, epidemiologist and director of programs at Doctors Without Borders in an opinion piece in STAT. “It means that Moderna and the world’s governments are choosing to let countless people die preventable deaths ... it’s the responsibility of the U.S. government to force Moderna to share its technology immediately.”

Maybe. That issue is obviously all tied up with the $10 billion Moderna received from the Feds — and its incipient patent dispute with NIH.

Moderna may have sound business and legal cases in all this — and a bright future as well. But executives there may discover that optics, never mind humanity, matter even more. And that maybe they aren’t mutually exclusive either.