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INNOVATION

Financing the Common Good: The Case for the GLP-1 Class of Drugs

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Image Credit | Diana Vyshniakova

The GLP-1 class of drugs requires governments across the world to act in coordinated fashion.

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Given that certain investments directly or indirectly benefit wide segments of the society, an optimal course could be for the government to finance those investments, so that the costs are distributed among a larger number of the people and are not borne just by a select few. An airport is used by air travelers as well as by those who profit from commerce facilitated by air travel. Other examples of such social goods are roads, infrastructure, ports, public schools, law enforcement, defense, clean air, clean water, healthcare, and literacy.

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We claim that the newly developed GLP-1 class of drugs also is a social good. The costs of research on innovation, safety of use, production, administration of the drugs, and distribution would be spread over a wide swathe of the population, via government initiative and funding, as the advantages would accrue to not only direct users but also the other segments of society. We allude to the recent example of Operation Warp Speed, which lead to the development of COVID-19 vaccines and created a common social benefit.

GLP-1 Drugs Can Lower Healthcare Costs to Society

GLP-1 drugs have been touted as **groundbreaking** biotech innovations on several fronts. Documented benefits offer treatment for **obesity**, **type 2 diabetes**, **depression**, **cardiovascular problems**, and **addictive disorders**. New evidence suggests that the next generation of obesity drugs could be even **more effective**.

Of particular interest to the society is obesity. **Three-quarters** of U.S. adults are now overweight or obese, a number that could reach 260 million by 2050, an epidemic by any proportion. A congressional report found that obesity could cost **$9.1 trillion** over the next 10 years. Other studies claimed that the cost of obesity would reach **$4.3 trillion annually** if prevention and treatment measures do not improve. The costs are imposed not just on overweight people, but also on their employers, coworkers, family and friends, and co-citizens. At almost 3% of global gross domestic product, this is comparable to the impact of COVID-19 in 2020.

While GLP-1 drugs have been shown to lower obesity, the response to them has varied. On the one hand are extreme claims such as "**New drugs could spell an end to the world's obesity epidemic**" and "**Semaglutide's Success Could Usher in a 'New Dawn' for Obesity Treatment**." On the other hand are calls for cautious optimism. Numerous issues must be addressed before GLP-1 drugs can be adopted widely and their true potential is realized. First, more research is needed about their benefits and side effects. Whether these drugs cure obesity remains unclear, because obesity is caused by a **myriad** of factors, including genetics, mental health, socioeconomic status, and environmental influences. Second, concerns have arisen about the side effects, some that have been reported on by the drugs' **producers** and some that are emerging from new **research**. Third, the **demand** far exceeds supply, causing a **national shortage**, which could lead to counterfeit operations. Drugs could come to be produced by unreliable, unregulated sources and marketed through unauthorized distributors. Fourth, costs of treatment are too high, ranging in the United States from $1,000 to **$1,300** per month. As a result, health insurance companies are adopting more stringent rules for coverage. Fifth, celebrity and TikTok influencers' **endorsements**, not potential health benefits, are driving usage. Finally, there are **ethical concerns** of relying too heavily on pharmacological solutions for obesity.

Meanwhile, the market cap of Nordisk, the Danish pharmaceutical giant that produces and markets the blockbuster weight-loss drug Wegovy, reached **470 billion dollars**, with stock returns exceeding 2,000% in five years. This is despite a 30% drop in its stock price over the last month or so.

Private Funding Drives Innovation in Biotechnology

The development chain of a new life-science product progresses through several phases: synthesis (discovery of a molecule or formulation), initial research (preclinical tests in a laboratory and trials on animals), and development (human trials). **Animal spirits**, a term coined by economist William Baumol for entrepreneurial initiatives, and economic forces underlie the innovation complexes in Silicon Valley (technology) and Boston (biotech and medical). Expectations of returns exceeding risks drive capital flows from private investors. Acting at different stages of the product cycle, venture capitalists, private equity firms, investment banks, and portfolio managers provide capital to promising projects.

Private enterprise boosts the development of new drugs and their public access. However, private funding often is prompted by the vagaries of the stock market, causing dramatic changes in the level of investments. For example, biotech venture capitalist funding more than **doubled** from Q4 of 2020 to Q1 of 2021, encouraged by a rise in biotechnology companies' stock prices, and then halved by Q2 of 2023. In a previous **CMR post**, we argued that the rapid rise and fall of biotech stocks adversely impacts society. Thus, the roller coaster in the fortunes of the biotechnology sector means a lower chance of developing new drugs and vaccines, as well as the loss of promising research efforts that are prematurely abandoned. Not discovering a drug or a vaccine means prolonged illness and pain or even more deaths. The fluctuating stock market fortunes of biotech firms would impact the health and well-being of citizens, something that personally touches others, whether they invest in stock markets or not.

The Case for Government Funding

Government funding often underlies innovations that, on the surface, seem like a pure private enterprise. Consider the emergence of trillion-dollar technology giants, riding on the backbone of the Internet, which was developed with **government** initiative and support. An array of key technological developments such as the **Global Positioning S**ystem and **microchips** started as **government-driven innovations**, before creating highly valuable private enterprises.

We do not argue that government funding is a substitute for private sector funding. Instead, we perceive that government funding is often pivotal for early-stage efforts when the potential economic benefits are too ambiguous for even the most risk-taking venture capitalists. Although government funding comes with **fiscal costs** that are ultimately borne by taxpayers, those costs are spread across wider segments of the society, and the net returns to the society can exceed the initial risks and costs, especially in medical and biotech innovation,

Counterintuitively, government intervention can supplement market mechanisms to enhance the private economic profits from an innovative product. For example, government subsidies can **cover the costs** of a **gym membership** or a device such as a step counter, following a simple actuarial estimation. Back-of-the-envelope math shows that subsidizing a gym membership would less cost than enduring adverse health conditions. More important, exceptional circumstances exist in which the government must proactively intervene to create social goods, when math becomes a no-brainer.

Operation Warp Speed as a Success Case

Operation Warp Speed was a public-private partnership to facilitate, at an unprecedented pace, the development, manufacture, and distribution of COVID-19 vaccines while ensuring their availability and affordability. The operation was originally funded under the **Coronavirus Aid, Relief, and Economic Security Act** with a budget of about **10 billion USD**. From a global perspective, estimates are that the **ex ante costs** associated with the pandemic were about **15 to 20 trillion** USD. The comparison is between billion and trillions. Taxpayers received a fair benefit for the tax dollars that were invested in the program. That is, Operation Warp Speed was a success, both from a public health and an economic perspective, with clear returns to taxpayers. Moreover, the technological benefits and **potential applications** of messenger ribonucleic acid (mRNA) technologies go way **beyond** COVID-19 vaccines and other **developments**.

What Can Government Do?

What specific steps can the government take to address the opportunities presented by the GLP-1 class of drugs?

1. Promote research into development of similar drugs or generic versions without violating patent laws. Patent laws should create economic incentives for the brightest scientists to engage in experimentation but should not create long-term monopolies in the biotech market.

2. Invest in production at a mass scale while bringing down the production costs. This aspect cannot be left to private enterprise as has been the case with semiconductor chips, for which the **government had to intervene after it was too late**.

3. Fund research on benefits and side effects. While the scientific community, investors, and the public are eager to celebrate the development of new drugs and treatments, understanding the potential side effects and properly communicating about them with nonexperts is essential to prevent broad public skepticism.

4. Design effective communication strategies while more effectively controlling miscommunication. The current demand, for example, is often driven by celebrity endorsements instead of medical needs.

5. Invest in distribution channels and logistics. As evidenced by the COVID-19 pandemic, the expedited development of effective vaccines was central to reducing infections and fatalities. Widespread adoption requires a reliable logistic infrastructure and public trust.

6. Improve the metrics of success and evaluation of scientists and grantees. Research shows that **innovation** requires labor **contracts** that are tolerant of (or even reward) early failure. When researchers are **rewarded** based on their long-term accomplishments and given greater freedom to experiment, they produce more innovative research. This formula differs from that on Wall Street, which often promotes short-term profits. Impactful bonus innovation cannot be assessed based

on short-term metrics, as recent anecdotal evidence from the **mRNA technology** suggests. Government can drive incentives that promote innovation in funding of research at the university level and associated research labs.

7. In the short term, negotiate hard as the largest buyer, while providing adequate returns on capital for the risky efforts taken by private enterprises.

In summary, in times of great opportunities and threats, the government must intervene proactively to create a common social good. The GLP-1 class of drugs is one such development. Governments across the world must act in coordinated fashion to lower the drugs' costs of production, study their side effects, and improve communication and distribution, to achieve a similar success to that of COVID-19 vaccines.

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