

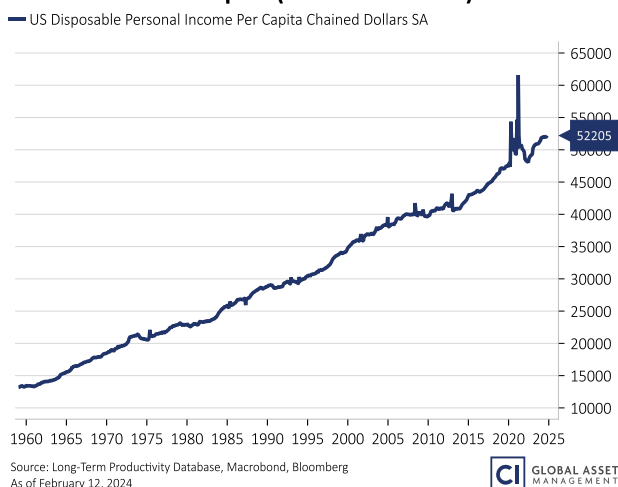
Industrial Revolution 2.0 and Globalization 2.0 Are Both Underway

December 2024

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The first round of industrial revolutions (coal, gas, nuclear, internet) saw the growing use of machines and computers to enhance human productivity. The job markets rebalanced effectively as a result of training and education moving humans up the food chain. We enjoyed decades of improved lifestyle due to increased income and reduced number of hours worked.

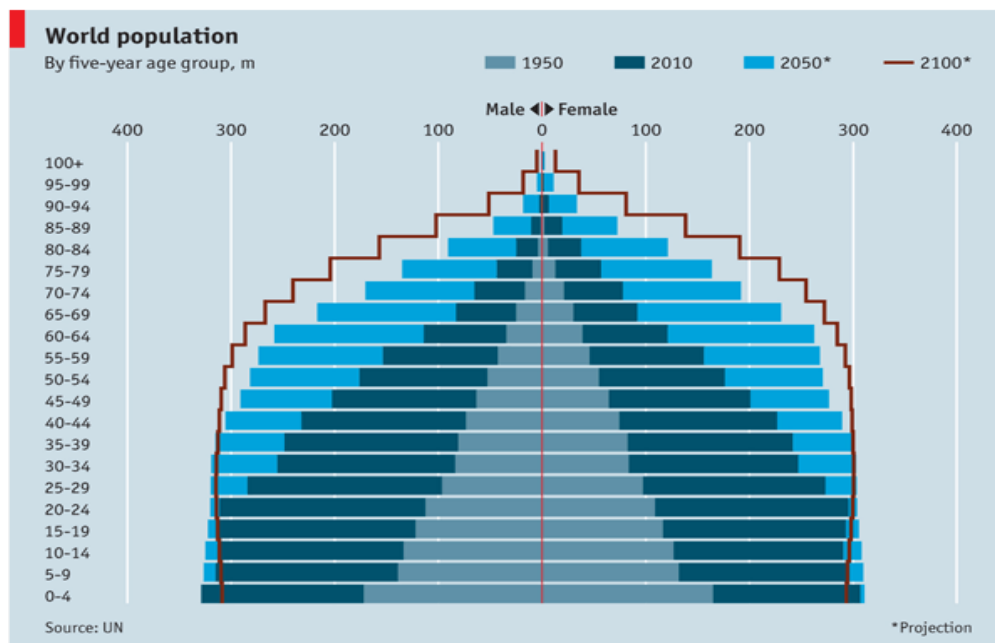
US Disposable Personal Income Per Capita (Chained Dollars)



The second round of industrial revolution has started with the introduction of high-speed computing, giving robots a much more powerful “brain” and, as a result, they are more than a machine (hence 2.0). These new generation robots come in different forms: data centres (robots with a brain, no eyes, no arms and legs), drones (robots with a brain, eyes and wings), full self-driving (robots with a brain and eyes) and humanoid robots (robots that look like humans with a brain, eyes, body, arms and legs). The common attribute of these robots is they all have “brains” and do not just perform a task repetitively. The technology is best described as “artificial intelligence”.

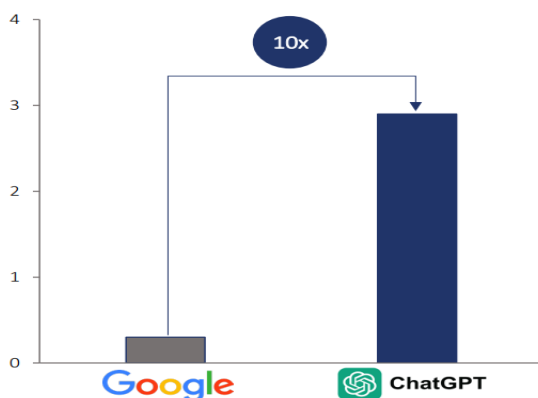
Artificial intelligence and biological intelligence (in humans) will likely complement and also compete with each other. There is a case for growing artificial intelligence to offset the loss of human intelligence on aggregate due to aging populations and low birth rates globally (see chart below for UN projection). Keep in mind that robots, at least at this stage, learn from humans and we have had a track record of outgrowing ourselves for decades. This

means robots will need to continue catching up to humans' intelligence. However, like what humans went through in the Industrial Revolution 1.0, certain jobs will be completely replaced. For example, full self-driving technology will soon replace our roles in driving completely, creating more effective use of roads and improving safety. Most of us will soon not own cars and not drive. In real-world testing, Tesla's full self-driving required 75 human interventions per 1000 miles. It is a gauge to evaluate full self-driving technology's effectiveness, and the goal is to continue to lower interventions as robots learn. Tesla has also unveiled the Cybercab (driverless taxi) which will be on the roads pending approvals.



Robots also complement us. For example, they have assisted in searching for information. We used to go to a library; books are stores of knowledge but they are also “hidden”. You only know you have not found the right information after spending time searching. From the millennium, we moved to online searches through Google where a large pile of information is at our fingertips. The latest development: ChatGPT and Microsoft Copilot effectively replace both tools, enhancing speed and relevance as your “copilot” is bringing you the information you want. While robots have learned quickly, we also have become more effective.

CHAT GPT VS. GOOGLE SEARCH QUERY (Wh)



Artificial intelligence is also driving Globalization 2.0. The first round of globalization was about labour optimization by country. Labour should no longer only include humans. Robots will be doing some of our jobs, and they are transportable. This means globalization will have different rules going forward. Geography will no longer be defined by availability and types of human labour; we also have to include technology in those considerations. In addition, climate and infrastructure will also play a role.

The new U.S. President-elect, Donald Trump, has vowed to add tariffs to America’s trading partners with the intention to move jobs back to the U.S. Some have called the initiative “de-globalization”, but we disagree. As noted before, globalization is going through changes. Labour was optimized through moving some of the entry level manufacturing jobs from developed countries to developing countries while skilled labour in the developed countries focused on design and management. That worked well for a while. The goal of lowering labour costs will continue with Globalization 2.0 where jobs will move from countries that supply lower cost labour to countries that supply even lower labour (robot) costs. Humanoid robots as we know them today will be very effective in manufacturing lines and over time will expand to include other sophisticated roles. We expect President Trump will attempt to bring Globalization 2.0 forward as technology is America’s competitive advantage.

Industrial Revolution 2.0 and Globalization 2.0 are both underway. It’s a race that compels us to adapt, innovate and grow—ultimately making us better. It’s inevitable, somewhat scary, but definitely interesting. So, stay curious, stay engaged and stay invested in this trend.

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1. Microsoft Corporation	6. UnitedHealth Group Incorporated	11. Bank of Montreal
2. NVIDIA Corporation	7. Meta Platforms Inc. Class A	12. Shopify, Inc. Class A
3. Royal Bank of Canada	8. Apple Inc.	13. Enbridge Inc.
4. Amazon.com, Inc.	9. WSP Global Inc.	14. Canadian Natural Resources Limited
5. Brookfield Corporation	10. Alphabet Inc. Class A	15. Suncor Energy Inc.



For more information, we encourage you to speak to your advisor or visit us at assante.com

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