

WEEKLY COMMENTARY

What We Know about AI’s Impact on the Economy

By Jimmy Jean, Vice-President, Chief Economist and Strategist

As artificial intelligence (AI) continues its dizzying growth, the big questions for economists are how it will impact productivity and how it will affect jobs. With regard to the first question, the technological advances of the past 15 years have had very little impact on productivity as measured by statistical agencies. According to [Brynjolfsson](#) and his fellow researchers at the Massachusetts Institute of Technology, there are a number of reasons for this, including the concentration of productivity gains in a handful of industries. It’s also because it takes a long time for organizations to introduce new technologies and restructure their operations around them. General purpose technologies like AI and the electric motor and microcomputer before it don’t become transformative overnight. Before they can have their full effect, substantial complementary investments have to be made and society has to adjust.

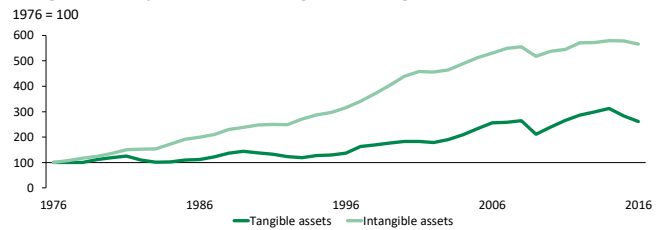
According to studies by Brynjolfsson, [Briggs and Kodnani \(2023\)](#) and others, the lag between the time a disruptive technology emerges and when it has its full impact on productivity is likely to be measured in decades, not years. That’s because the technology has to be adopted and processes reconfigured. Still, Briggs and Kodnani estimate that AI could add 1.5 percentage points to annual US productivity growth. That would be in line with previous transformative technologies.

Of course, this assumes productivity is being measured accurately, a hotly debated topic among economists when large amounts of intangible capital are involved. Currently with AI, tangible and intangible capital are working in synergy. According to a [study](#) by McKinsey, investments in semiconductors are expected to hit US\$1 trillion by 2030. The resulting increase in computing capacity should generate new AI discoveries, innovations and applications. Some even predict that investment in AI will account for 1% of business investment in the United States by the end of the decade.

Although statisticians are well versed in the challenges of measuring intangible capital, the incorporation of this type of capital remains incomplete, and its various components are typically introduced with delays of several years, as Statistics Canada economists have [explained](#). The fundamental challenge is capturing intangible capital formation and measuring it, including second-round and diffusion effects. However, once we do measure intangible capital more accurately, we see that it tends to grow faster than tangible capital (graph).

Canada
Intangible Capital Grows at a Much Faster Rate

Real gross fixed capital formation – Tangible vs. intangible assets



Statistics Canada and Desjardins Economic Studies

This results in the J-curve phenomenon—underestimating upstream capital accumulation, then over-attributing the eventual labour productivity gains to total factor productivity, a residual that Robert Solow famously referred to in 1957 as “a measure of our ignorance.”

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This is especially important to keep in mind as we try to determine whether the recent productivity gains in the US are just a statistical blip or an actual regime shift. Getting it wrong could have major monetary policy implications, as Alan Greenspan learned in the 1990s. We should at least recognize what Brynjolfsson et al. have shown—that the difference between perceived technological progress and the statistical data could be largely due to measurement errors.

As for AI's impact on jobs, an International Monetary Fund [study](#) released in January found that 60% of workers in advanced economies are in occupations with high levels of AI exposure. Unlike previous technologies that disrupted the job market, AI will likely impact more highly educated knowledge workers. But that doesn't mean AI will replace them. AI could very well boost the productivity of workers like judges and surgeons, as society wouldn't want technology to do their jobs. Workers such as telemarketers are more likely to be replaced, however. What's more, AI and the changes it's ushering in will create new jobs we can't even imagine today—a widely documented phenomenon that has proven Luddite-like doomsday predictions wrong in previous waves of industrialization.

In short, while academic research has shed some valuable light on these issues, we still don't know much. That makes it extremely difficult to incorporate artificial intelligence into a baseline forecast. How quickly will countries and economies adopt AI? Will society accept it, for example in the medical profession and other sensitive fields? How quickly will new jobs emerge, and what skills will they require?

Meanwhile the technology continues to develop at breakneck speed. For example, recent advances in robotics suggest AI-powered humanoid robots could soon be market-ready, meaning technology can do even more physical jobs (e.g., landscaping) that research has deemed to have lower AI exposure for now.

Finally, it's hard to know what the regulatory landscape will look like. AI's strength is a double-edged sword that brings both cybersecurity risks and increased inequality and other ethical and existential issues. Will regulations be excessive, lacking or just right? Will they be standardized across the globe? Will they be able to keep pace with change? When it comes to AI's impact on the economy, one thing's for sure: there's still a lot we don't know.

What to Watch For

By Randall Bartlett, Senior Director of Canadian Economics, Tiago Figueiredo, Macro Strategist, Marc Desormeaux, Principal Economist, Marc-Antoine Dumont, Senior Economist, and Francis Généreux, Principal Economist

MONDAY March 25 - 10:00

February	ann. rate
Consensus	680,000
Desjardins	690,000
January	661,000

TUESDAY March 26 - 8:30

February	m/m
Consensus	1.1%
Desjardins	-1.7%
January	-6.2%

TUESDAY March 26 - 9:00

January	y/y
Consensus	6.70%
Desjardins	6.60%
December	6.13%

TUESDAY March 26 - 10:00

March	Index
Consensus	107.0
Desjardins	106.2
February	106.7

FRIDAY March 29 - 8:30

February	m/m
Consensus	0.5%
Desjardins	0.5%
January	0.2%

UNITED STATES

New home sales (February) – New home sales appear to be recovering following a number of monthly declines in the second half of 2023. After hitting bottom in November, sales have climbed 8.9%, including a 1.5% jump in January. We believe the uptrend continued in February. The number of building permits for single-family homes and an upsurge in builder confidence both point in this direction. We therefore expect single-family home sales to have accelerated to 690,000 units.

Durable goods orders (August) – Durable goods orders started 2024 on the wrong foot. In January, they shrank by 6.2%, the biggest contraction since July 2017 if we don't count the first few months of the pandemic. Most of this was due to a 58.9% nosedive in nondefense aircraft orders. Boeing's woes likely continued to be a drag on aviation in February. Consequently, we believe transportation equipment orders fell by around 6% despite an expected uptick in motor vehicles and parts. Excluding transportation, durable goods orders are expected to have rebounded 0.4% after sliding 0.4% in January. All sectors combined, durable goods orders were probably down 1.7%.

S&P/Case-Shiller index of existing home prices (January) – Under the influence of high mortgage rates, existing home prices started 2023 on a sour note but then recovered enough to post average annual growth of 1.7% for the year. We believe that in early 2024 home prices continued to advance, albeit less forcefully. We're forecasting a month-on-month gain of just 0.1% for January, which would bring 12-month growth up from 6.1% to 6.6%.

Conference Board consumer confidence index (March) – After rebounding sharply in December and January, consumer sentiment as measured by the Conference Board faded in February. The index shed 4.2 points after soaring 11.8 points over the previous 3 months. One of the main factors driving this slump was probably rising gasoline prices. So far, pump prices have continued to pick up in March. We can expect them to keep eroding confidence, especially since both the stock market and interest rates stayed relatively flat over the month. Low weekly unemployment claims suggest the job market is still running hot, which could lift household sentiment somewhat. The University of Michigan consumer sentiment index has nevertheless already posted a modest decline, and we expect the Conference Board index to follow suit.

Consumer spending (February) – In January, real consumption kicked off 2024 with a 0.1% dip, which could even be revised downward slightly. Some of the downtrend was due to foul weather. Conditions clearly started to improve in February, as evidenced by a 6.0% run-up in new car sales and a 0.6% bump in retail sales. But a February slowdown in energy output suggests there was a major pullback in heating demand, which is a component of services consumption. All told, we expect real consumer spending to have increased 0.2%. In nominal terms, consumer spending likely ramped up 0.5%. We believe the 12-month changes in Personal Consumption Expenditures deflators remained unchanged from January to February, with the total deflator stalling at 2.4% and the core deflator, which strips out food and energy, standing pat at 2.8%.

THURSDAY March 28 - 8:30

January	m/m
Consensus	0.4%
Desjardins	0.3%
December	0.0%

SATURDAY March 30 - 21:30

March	
Consensus	n/a
February	50.9

CANADA


Real GDP by industry (January) – Real GDP by industry is expected to have advanced by 0.3% m/m in January, slightly less than Statistics Canada’s 0.4% flash estimate. The anticipated move higher should reflect a broad-based increase in services-producing sectors, with a rebound in education following the end of the public service strike in Quebec likely stealing the show. In goods-producing sectors, construction seems poised to be the only sector to have experienced a contraction, which was probably more than offset by gains in utilities and manufacturing output. Looking ahead to February, we’re projecting a 0.2% advance in real GDP by industry led by goods-producing sectors.


OVERSEAS

China: Composite PMI (March) – China’s composite PMI held steady at 50.9 in February. Recent numbers showed that the manufacturing (49.1) and non-manufacturing (51.4) components have remained on diverging trajectories. This disparity is even clearer once we look at services, which posted the strongest growth of all index components in February. That said, all components are still at relatively low levels, in keeping with a slowing economy. But they’re expected to rally over the coming months, as the government is rolling out new stimulus measures aimed at meeting its ambitious target of 5.0% real GDP growth in 2024.

Economic Indicators

Week of March 25 to 29, 2024

Date	Time	Indicator	Period	Consensus		Previous reading
UNITED STATES						
MONDAY 25	8:25	Speech by Federal Reserve Bank of Atlanta President R. Bostic				
	10:00	New home sales (ann. rate)	Feb.	680,000	690,000	661,000
	10:30	Speech by Federal Reserve Governor L. Cook				
TUESDAY 26	8:30	Durable goods orders (m/m)	Feb.	1.1%	-1.7%	-6.2%
	9:00	S&P/Case-Shiller home price index (y/y)	Jan.	6.70%	6.60%	6.13%
	10:00	Consumer confidence	March	107.0	106.2	106.7
WEDNESDAY 27	18:00	Speech by Federal Reserve Governor C. Waller				
THURSDAY 28	8:30	Initial unemployment claims	March 18–22	212,000	214,000	210,000
	8:30	Real GDP – third estimate (ann. rate)	Q4	3.2%	3.2%	3.2%
	9:45	Chicago PMI	March	46.0	47.0	44.0
	10:00	Pending home sales (m/m)	Feb.	1.8%	n/a	-4.9%
	10:00	University of Michigan consumer sentiment index – final	March	76.5	76.5	76.5
FRIDAY 29	---	Markets closed (Good Friday)				
	8:30	Personal income (m/m)	Feb.	0.4%	0.6%	1.0%
	8:30	Personal consumption expenditures (m/m)	Feb.	0.5%	0.5%	0.2%
	8:30	Personal consumption expenditures deflator				
		Total (m/m)	Feb.	0.4%	0.3%	0.3%
		Excluding food and energy (m/m)	Feb.	0.3%	0.3%	0.4%
		Total (y/y)	Feb.	2.4%	2.4%	2.4%
		Excluding food and energy (y/y)	Feb.	2.8%	2.8%	2.8%
	8:30	Goods trade balance – preliminary (US\$B)	Feb.	-89.5	-88.0	-90.5
	8:30	Retail inventories (m/m)	Feb.	n/a	n/a	0.4%
	8:30	Wholesale inventories – preliminary (m/m)	Feb.	0.2%	n/a	-0.3%
11:30	Speech by Federal Reserve Chair J. Powell					
CANADA						
MONDAY 25	---	---				
TUESDAY 26	8:00	Speech by Bank of Canada Senior Deputy Governor C. Rogers				
	---	2024 Ontario Budget				
WEDNESDAY 27	---	---				
THURSDAY 28	8:30	Real GDP by industry (m/m)	Jan.	0.4%	0.3%	0.0%
FRIDAY 29	---	Markets closed (Good Friday)				

NOTE: Each week, Desjardins Economic Studies takes part in the Bloomberg survey for Canada and the United States. Approximately 15 economists are consulted for the Canadian survey and a hundred or so for the United States. The abbreviations m/m, q/q and y/y correspond to month-over-month, quarter-over-quarter and year-over-year change respectively. Following the quarter, the abbreviations f, s and t correspond to first estimate, second estimate and third estimate respectively. Times shown are Eastern Daylight Time (GMT - 4 hours).  Desjardins Economic Studies forecast.

Economic Indicators

Week of March 25 to 29, 2024

Country	Time	Indicator	Period	Consensus		Previous reading	
				m/m (q/q)	y/y	m/m (q/q)	y/y
OVERSEAS							
MONDAY 25							
Japan	1:00	Leading indicator – final	Jan.	n/a		109.9	
Japan	1:00	Coincident index – final	Jan.	n/a		110.2	
TUESDAY 26							
Germany	3:00	Consumer confidence	April	-28.0		-29.0	
WEDNESDAY 27							
France	3:45	Consumer confidence	March	90		89	
Sweden	4:30	Bank of Sweden meeting	March	4.00%		4.00%	
Eurozone	6:00	Consumer confidence – final	March	n/a		-14.9	
Eurozone	6:00	Economic confidence	March	96.1		95.4	
Eurozone	6:00	Industrial confidence	March	-9.8		-9.5	
Eurozone	6:00	Services confidence	March	7.5		6.0	
THURSDAY 28							
Germany	8:00	Retail sales	Feb.	0.4%	-0.8%	-0.4%	-1.5%
United Kingdom	3:00	Real GDP – final	Q4	-0.3%	-0.2%	-0.3%	-0.2%
United Kingdom	3:00	Current account (€B)	Q4	-22.2		-17.2	
Italy	5:00	Consumer confidence	March	97.5		97.0	
Italy	5:00	Economic confidence	March	n/a		95.8	
Eurozone	5:00	M3 money supply	Feb.		0.3%		0.1%
Japan	19:30	Tokyo Consumer Price Index	March		2.5%		2.5%
Japan	19:30	Unemployment rate	Feb.	2.4%		2.4%	
Japan	19:50	Retail sales	Feb.	0.6%	2.7%	0.2%	2.1%
Japan	19:50	Industrial production – preliminary	Feb.	1.3%	-2.5%	-6.7%	-1.5%
FRIDAY 29							
Japan	1:00	Housing starts	Feb.		-5.5%		-7.5%
France	3:45	Consumer price index – preliminary	March	0.6%	2.7%	0.9%	3.0%
France	3:45	Personal consumption expenditures	Feb.	0.3%	-0.6%	-0.3%	-0.7%
Italy	6:00	Consumer price index – preliminary	March	n/a	1.3%	0.1%	0.8%
SATURDAY 30							
China	21:30	Composite PMI	March	n/a		50.9	
China	21:30	Manufacturing PMI	March	50.2		49.1	
China	21:30	Non-manufacturing PMI	March	n/a		51.4	

Note: Unlike release times for US and Canadian economic data, release times for overseas economic data are approximate. Publication dates are provided for information only. The abbreviations m/m, q/q and y/y correspond to month-over-month, quarter-over-quarter and year-over-year change respectively. Times shown are Eastern Daylight Time (GMT - 4 hours).