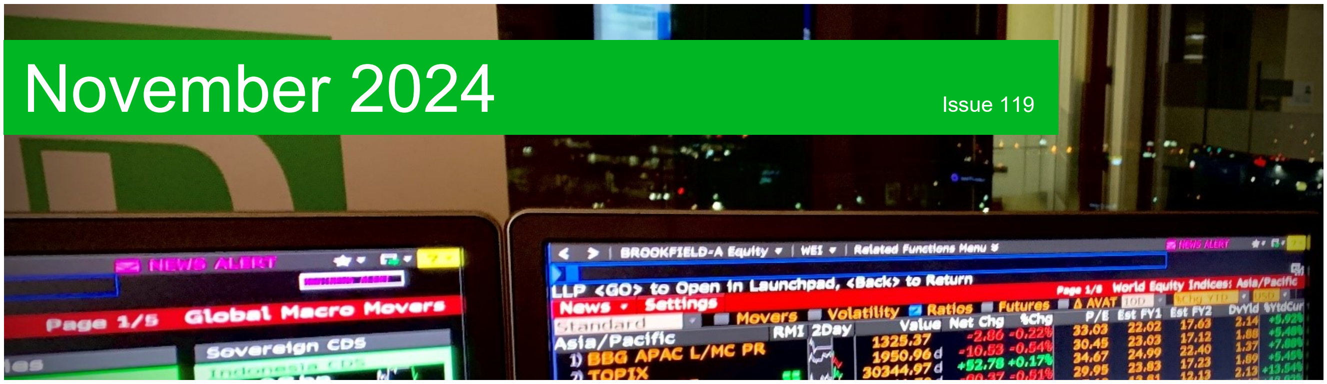
The Charter Group Monthly Letter



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Economic & Market Update

Atomic Allocation

In early September, the polling firm Ipsos asked British Columbians if they were supportive of reviewing the restrictions on nuclear power in the province. 58% responded that they were supportive.[1]

Nuclear energy is making a comeback which has caught a lot of investors off guard.

Wait, what?

It might be hard to imagine that support would have been this high a decade again when the Fukushima disaster in Japan was still fresh in many minds. Even prior to Fukushima, there was a concerted effort to decommission reactors in the U.S. and Europe, much of that based on the notion that it was too unsafe and produced radioactive waste.

More acceptance among the public, business, and governments is fueling this renaissance.

So, what happened?

It was likely a combination of things.

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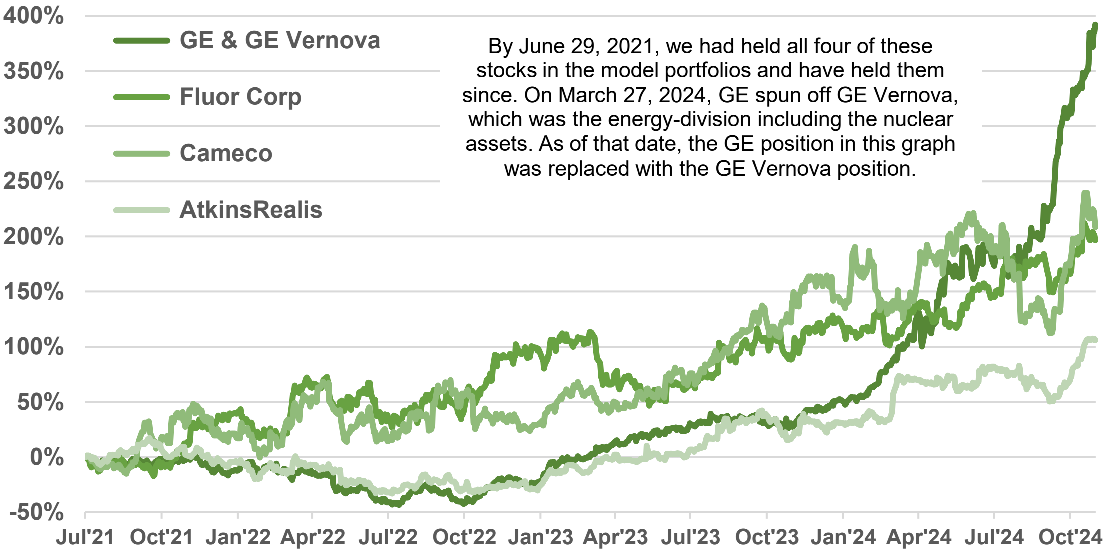
[1] Kyle Braid (September 6, 2024). *BC Residents Open to Range of Options to Meet Electricity Demands*. Ipsos SA.

Chart 1:

Nuclear-Related Stocks



Source: Bloomberg Finance L.P. as of November 5, 2024

First, it was a need to bridge the gap between conventional energy generation (primarily coal and gas) and the future when technology would finally deliver reliable 24/7 renewable energy. Prior to the pandemic, there was a belief that the energy transition to renewables was close at hand and all we needed was more spending and incentives to accelerate adoption. However, it then became clear to enough policymakers and decision-makers that the technology curve was too flat to be able to rely on renewables for baseload power in the near future. Although there are some carbon emissions in the construction of nuclear reactors and the plant facilities that surround them, there is very little produced during the actual generation of electricity.

The renaissance is also being driven by the massive increase in energy demand from EVs, AI, crypto, the "cloud", and home heat pumps.

It also appears that the transition to renewables will need a "bridge" that is not carbon-intensive since the technology required for reliable green energy still looks to be decades away.

Secondly was the increasing demand for electricity. Two areas of usage that have sprung up in recent years are electric vehicles and heat pumps. Both have virtues that have made them popular, and one would reasonably expect significant growth going forward. However, the electrical grid is woefully inadequate to accommodate mass adoption.

Another source of explosive demand has been the hyperscaling of data centres, especially by Amazon, Microsoft, and Google as they have expanded their cloud businesses. Businesses rapidly ditched much of their computer infrastructure as they saw the cloud as much more cost effective and more secure in terms of additional back-up. Also, the "software as a service" phenomenon has added to the attractiveness of the cloud. Why bother employing an expensive tech staff if one can easily access these capabilities from third parties via the cloud?

The blockchain and various cryptocurrencies that use iterative computations was another source of unforeseen demand. Interations are akin to trying over and over again, trillions of times, to solve puzzles. The power bitcoin needs to drive these calculations (bitcoin mining) is roughly equivalent to the power needs of countries similar in size to Argentina.[2]

Then, it was artificial intelligence (AI) that layered on a whole new and mostly unanticipated source of electricity demand. Some estimates suggest that if all queries on Google were done on Google's AI platform, called Gemini, instead of via normal Google searches, it would eat up additional electricity equal to the entire demand in Ireland.[3]

Microsoft, Amazon, and Google appear to have done the math and have all decided to engage in nuclear energy in some way.

Big tech companies are adopting nuclear energy to power their massive data centres.

Some are even looking to build their own reactors.

Microsoft has contracted with Constellation Energy (a non-regulated power company, meaning they can set the price at which they want to sell electricity) to buy the output from the reactor at Three Mile Island in Pennsylvania. Yes, you read that correctly. That facility was where a reactor partially melted down in 1979. The other reactor at the site continued to operate until 2019. It is *that* reactor that will be recommissioned and will start producing electricity for Microsoft beginning in 2028.

Following the Microsoft news, Google announced a deal where it would purchase energy from a company that plans to build small modular reactors (SMRs) and Amazon announced that it would be investing in another maker of SMRs with the intent of utilizing them eventually. SMRs are built with a very efficient cookie-cutter approach and can be co-located next to the data centres. They are expected to produce about 1/10th the power of those old one-gigawatt facilities with the giant cooling towers.

With each of these stories, the attention and acceptance of the nuclear energy renaissance seems to ratchet upwards. In addition to consumers and big tech companies, we are seeing governments and related agencies around the world realizing the contribution that nuclear will need make if climate goals are to be realistic.

Federal governments in North America and Western Europe have been amenable to funding research on better and safer reactors and Japan is working at bringing most of

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[2] Raúl Limón, "Bitcoin mining uses the same amount of energy as Argentina, while laptops need a ton of material." *El Pais*, August 20, 2024.
[3] Ellis Stewart, "Google's AI Could Eat as Much Energy as Ireland." Enterprise Management 360, October 12, 2023.

the country's reactors back online only a dozen years after Fukushima.

Even California, which championed the decommissioning its reactors over the last two decades, has scrambled to save the last one, allowing it to remain open until at least 2030.

Finally, at COP28 (the 2023 UN Climate Change Conference in Dubai), participating countries pledged for a tripling of nuclear energy output by 2050 in an effort to reach net-zero greenhouse gas emissions.

Despite all this, I would be somewhat surprised if the stocks in the nuclear sector saw the kind of frenzy that we witnessed with artificial intelligence (AI) stocks. There are plenty of existing regulatory barriers that can slow things down. Much of the technology that will drive safer next-generation reactors, and SMRs specifically, is still in a developmental stage. While the technology isn't a huge leap, like it would be for nuclear fusion,[4] it is capital-intensive and moves slowly because of constant approval requirements at various stages. As a result, I would not expect things like SMRs to be contributing a noticeable portion of overall energy until at least the end of the decade.

However, nuclear approvals take time. And, nuclear is very expensive. This could slow the growth.

Plus, there is still some lingering resistance. And expect debates about who should have priority to the nuclear power that is generated and at what cost.

There is also a political angle. Although governments have warmed to the need for nuclear, there could be some battles if it appears that the big tech companies and private enterprise start crowding out the general public for electricity, putting upward pressure on energy prices. Nuclear energy is not a cheap source of power. The research, construction, and operating costs combined with overall increase in demand could put regulated utilities under a strain that might only be solved near-term by politicians allowing them to charge higher prices. Not a big "winner" when it comes to politics!

In addition, it is not like most of the opposition to nuclear has suddenly evaporated. There are still significant pockets of resistance amongst the public. As a result, the next decade could feel like "two steps forward, one step back." At least, that would stretch out the period of opportunity to potentially find even more innovative companies in which to invest.

Despite the possibility for delays and hurdles, the investment opportunities could notable.

It may still be early innings.

[4] Fusion is different from fission (the conventional method of generating nuclear power). Fusion is like the "promised land" as it does not produce long-lived radioactive waste. However, it has been a fascination among promoters and researchers for all of my 35-year investment career. The problem is that the engineering needed is still out of reach for any realistic implementation at scale. The quip is that it is always "just ten years away."

Model Portfolio Update[5]

The Charter Group Balanced Portfolio
(A Pension-Style Portfolio)

	Target Allocation %	Change
Equities:		
Canadian Equities	12.0	None
U.S. Equities	38.0	None
International Equities	8.0	None
Fixed Income:		
Canadian Bonds	22.0	None
U.S. Bonds	6.0	None
Alternative Investments:		
Gold	8.0	None
Silver	1.0	None
Commodities & Agriculture	3.0	None
Cash	2.0	None

No changes were made to the asset allocations or the securities in the model portfolios during October.

No changes were made to the model portfolios in October.

Gold bullion continued its march higher during the month as it appeared that the potential unsustainability of the U.S. debt (and debt elsewhere) is becoming a growing concern. The U.S. budget for the fiscal year ended September 30 was $1.8 trillion, more than the $1.6 trillion that was planned for. Usually, these episodes lead us to an inflationary/devaluation destination, and gold has been the historical hedge against such a scenario.

Gold continued higher, perhaps driven by its inflation hedging reputation.

The rest of the markets were relatively flat during the month. Not bad for a month that is known for its scare factor with respect to ghosts, goblins, and stocks. If Canadians were looking for a scare this time around, the falling Canadian dollar might fit the bill, especially for those planning winter escapes to the U.S. In the case of the model portfolios, the

The Canadian dollar slid as lower Canadian interest rates sent more capital to the U.S. and their higher-yielding bonds.

[5] The asset allocation represents the current *target* asset allocation of the Balanced Model Portfolio as of November 5, 2024. The asset allocations of individual clients invested in this Portfolio may differ because of the relative performance of the asset classes since the last rebalancing and because of differences in the timing of deposits and withdrawals. The Balanced Model Portfolio is part of a sequence of five portfolios ranging from conservative to aggressive: Conservative, Balanced Income, Balanced, Balanced Growth, and Growth.

decline helped boost the value of the substantial weight in U.S. dollar-denominated investments. Hopefully that eases some of the stress involved with the trip planning. 😊

Post U.S. election, we are entering into the better seasonal half of the year through to the beginning of May. The one wrench that could be thrown into the works might be further anxiety around the growth in government debt. As of this writing, the Republicans have gained the White House and the Senate and may yet win the House of Representatives depending on some remaining ballot counts. This is not the Republican party of the past which tended to lean toward fiscal sobriety. And, with a sweep of Congress and the White House, we could see some bond market stress if it appears that the record budget deficits will continue to grow. The symptom to look out for is higher longer-term interest rates which could be a headwind for companies that need lower costs of capital in order to maintain profit margins. This good seasonal stretch could be more choppy than usual.

Despite changing government leadership in the U.S., the budget deficit looks set to continue its growth.

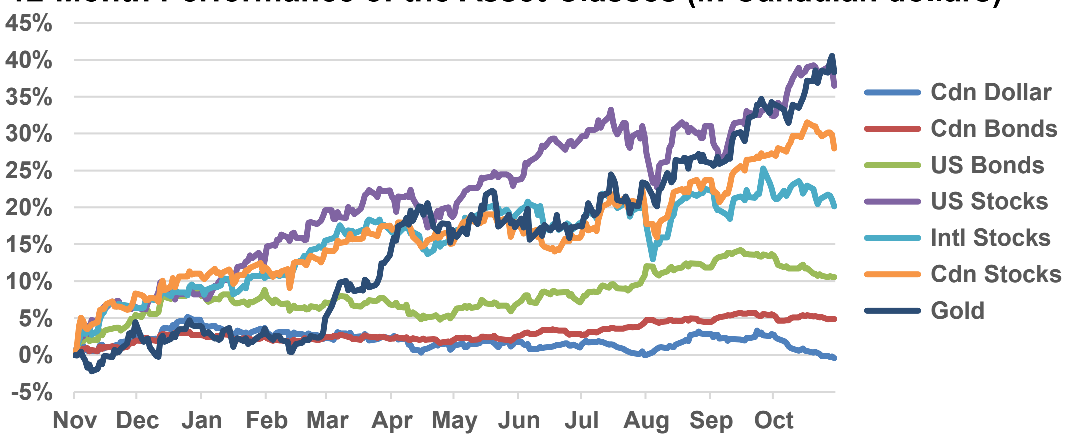
Bondholders could begin to rebel by demanding higher interest rates on longer-term bonds.

These higher rates could cause challenges for companies that need to borrow.

A preview of this might have been the recent rise in the yield (or interest rate) on the 10-year U.S. Treasury bond since September 18th when the U.S. Federal Reserve cut the Fed Funds Rate by 0.50%. From that point, the yield on the 10-year has risen by 0.78% regardless of the cut in short-term rates![6] Even U.S. mortgage rates are higher since.

Below is the 12-month performance of the asset classes that we have used in the construction of The Charter Group's model portfolios. (**Chart 2**).[7]

Chart 2:
12-Month Performance of the Asset Classes (in Canadian dollars)



Source: Bloomberg Finance L.P. for the interval from November 1, 2023 to October 31, 2024

[6] Source: Bloomberg Finance L.P. as of November 5, 2024.
[7] Source: Bloomberg Finance L.P. – The Canadian dollar rate is the CAD/USD cross rate which is the amount of Canadian dollars per one U.S. dollar; Canadian bonds are represented by the current 3-year Government of Canada Bond; US bonds are represented by Barclays US Aggregate Bond Index; U.S. stocks are represented by the S&P 500 Index; International stocks are represented by the MSCI EAFE Index; Canadian stocks are represented by the S&P/TSX 60 Composite Index; Gold is represented by the Gold to US Dollar spot price.

Top Investment Issues[8]

Issue	Importance	Potential Impact
1. Global Geopolitics	Significant	Negative
2. Canadian Federal Industrial Policy	Moderate	Negative
5. Inflation (Portfolio Impact)	Moderate	Positive
3. China's Economic Growth	Moderate	Negative
4. Canadian Dollar Decline	Moderate	Positive
7. Short-term U.S. Interest Rates	Medium	Negative
6. U.S. Fiscal Spending Stimulus	Medium	Positive
8. Long-term U.S. Interest Rates	Medium	Negative
9. Global Trade Wars	Medium	Negative
10. Canada's Economic Growth	Light	Positive

[8] This is a list of the issues that we currently deem to be the ten most important with respect to the potential impact on our model portfolios over the next 12 months. This is only a ranking of importance and potential impact and *not* an explicit forecast. The list is to illustrate where our attention is focused at the present time. If you would like an in-depth discussion as to the potential magnitude and direction of the issues potentially affecting the model portfolios, I encourage you to email me at mark.jasayko@td.com or call me directly on my mobile at 778-995-8872.

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The Charter Group is a wealth management team that specializes in discretionary investment management. For an annual fee, we manage model portfolios for private clients and institutions. All investment and asset allocation decisions for our model portfolios are made in our Langley, B.C. office. We do not outsource any of the decision-making for our model portfolios – there are no outside actively-managed products or funds. We strive to bring the best practices and the calibre of investment management normally seen in global financial centres directly to the Fraser Valley and are accountable for the results.

Accountability is further enhanced by the fact that we commit our own investable wealth to the same model portfolios in which our clients are invested.

The information contained herein is current as of November 5, 2024.

The information contained herein has been provided by Mark Jasayko, Senior Portfolio Manager and Senior Investment Advisor, TD Wealth Private Investment Advice, and is for information purposes only. The information has been drawn from sources believed to be reliable. Graphs and charts are used for illustrative purposes only and do not reflect future values or future performance of any investment. The information does not provide financial, legal, tax or investment advice. Particular investment, tax, or trading strategies should be evaluated relative to each individual's objectives and risk tolerance.

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Thank you to our clients and community for voting The Charter Group, your favorite for Investment Management and Financial Planning in Langley for the fifth year in a row.

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