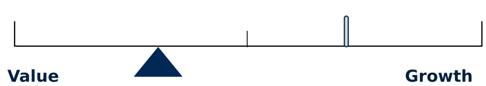
December 30, 2021

Key Insights For January

- **Inflation is sticky but under control**, while global growth continues to gain strength.
- **Risk assets and stocks continue to be attractive**, despite the volatility caused by the Omicron variant and the spectre of increasing rates.
- **Real estate continues to be a great play in the current environment.**
- **Commodities are also interesting**, but their volatility warrants some level of caution.
- **US large cap stocks continue to be attractive**, while small/mid-caps are struggling on a relative basis.
- **Cyclical developed markets and emerging markets** continue to struggle.

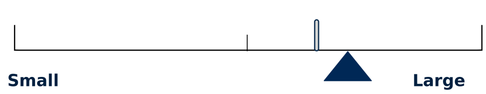
Factor Indicators

Value - Growth Factor



Although value outperformed recently, the growth-oriented US market continues to lead global stocks, including emerging markets and ex-US developed markets.

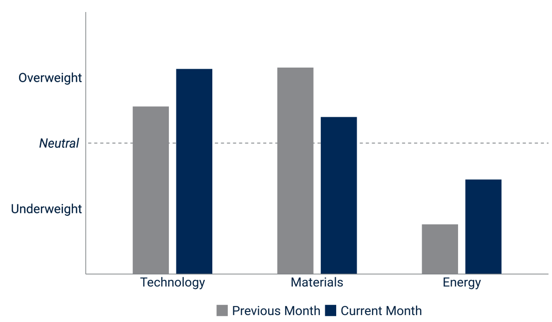
Small - Large Factor



Large caps continue to be preferred over small caps in the current environment.

Sector Indicator Highlights

Top Sector Changes



The top sector changes since last month include an increase in the **Technology (XLK)** sector, making it an overweight call for January.

Meanwhile, last month's overweight call in **Materials (XLB)** is now closer to equal weights, while PSIMON's earlier underweight call for the **Energy (XLE)** sector is also brought back closer to equal weight.

1. Market Outlook & Insights

Insights from PSIMON™

We regularly run PSIMON, our AI platform, to gain insights into market dynamics in addition to get specific forecasts. We summarize the key findings here.

What is PSIMON telling us this month?

1. Similar to last month, PSIMON is staying in risk assets in January, albeit with a healthy level of caution, driven by the higher volatility caused by the Omicron variant and the spectre of increasing rates.
2. The risk asset theme is very present in the Columbus portfolio, while the low volatility ESG portfolio is emphasizing a risk-off approach for January.
3. PSIMON is maintaining its real asset exposure in the Columbus model at 44%, similar to last month's 45%.
4. Meanwhile, equity exposure for the Columbus model is somewhat reduced from 46% to 40%, while fixed income increased to 15% at the expense of cash.
5. The real asset mix is shifting by reducing its exposure to volatile commodities while increasing its allocation to real estate, a less volatile and more consistent performer in the current environment.
6. Fixed income is now back in the Columbus portfolio with IEF and TLT, to provide a buffer against market volatility.
7. For the low-volatility ESG portfolio, PSIMON is emphasizing cash assets to the upcoming month.
8. PSIMON is emphasizing US large cap stocks (SPY) for the upcoming month, as large caps and technology are expected to continue to benefit in the current environment.
9. Last month, PSIMON underweighted the energy sector (XLE) and overweighted the materials sector (XLB). Both of these calls turned out as expected. For January, PSIMON is recommending an overweight in technology (XLK).

1. Market Insights

Interpreting PSIMON's Recommendations

Markets were particularly volatile in early December because of the double threats of the Omicron B.11.529 virus variant and the Fed's statement that it is likely to raise rates sooner than anticipated due to stickier-than-expected inflation.

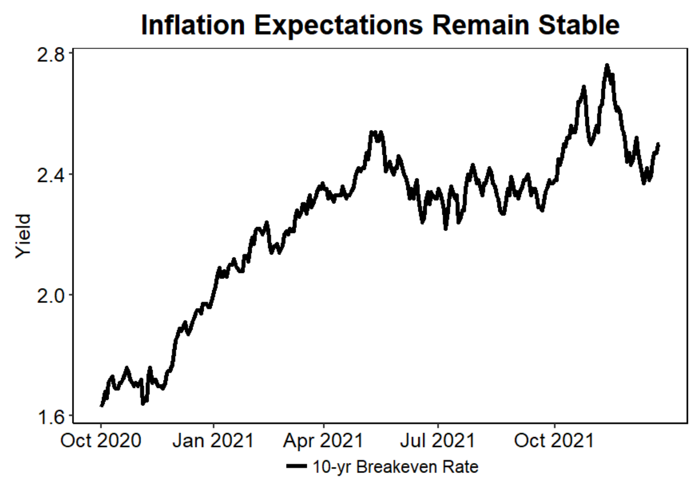
PSIMON's call last month was to stay with a risk-on portfolio, despite such possible threats. This paid off as markets are now ending the month (and the year) making new highs.

For January, PSIMON is taking a somewhat more cautious stance, as explained below.

Inflation Under Control

The following chart shows the 10 year breakeven inflation rate.

The breakeven rate shows the difference between the nominal treasury rate and the inflation-protected treasury rate. In other words, the difference is the expected inflation as perceived by fixed-income investors.



While inflation expectations were accelerating to the upside in November, we can see how it came down over the past month, staying more or less in line with the level seen during prior months.

It may very well be that the Fed's intention to raise rates in 2022 to keep inflation under control is having its intended impact on the markets.

In any case, the expectations are that inflation remains under control.

This bodes well for risk assets, and it supports the themes that performed well earlier this year, such as US large caps, real estate and real assets, and technology.

Risk-Off for Low Volatility ESG Strategy

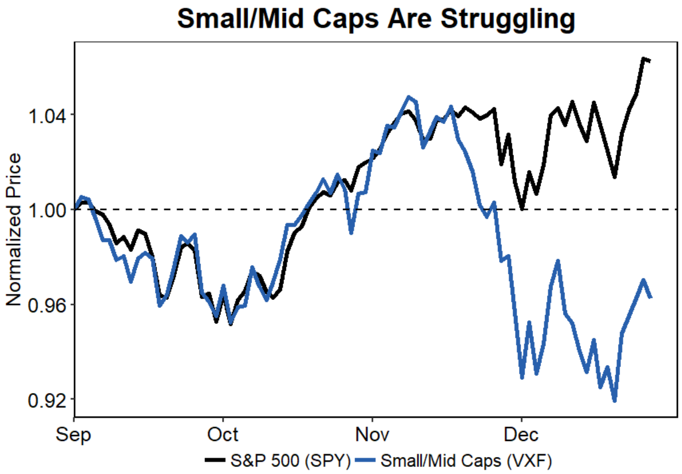
While inflation may be perceived to be under control, the market continues to be volatile. As a result, PSIMON is recommending a risk-off tilt for our low volatility ESG model.

Note that this strategy was constructed to be risk-averse by design, so it is behaving as expected in the current environment.

While the model maintains a position in the ESG USA equity ETF (ESGU), it is nevertheless staying very cautious and shying away from risk for the upcoming month.

Large Caps Are Preferred

The following chart shows the S&P 500 (SPY) and the small/mid caps ETF (VXF).



While small/mid caps (VXF) tracked SPY nicely until recently, we can see a clear divergence that started in late November.

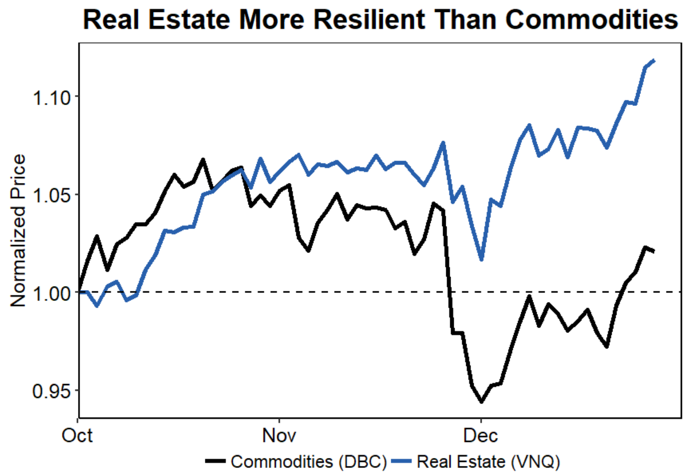
Small/mid caps took it on the chin with the Omicron scare, and are now seriously struggling to recover their lost ground, while SPY is making new highs.

This small/mid vs. large cap divergence is another way that shows how inflation is perceived by equity investors to be under control. This perception creates an environment that is favorable to large cap stocks.

Going forward, PSIMON is staying in large caps as the current environment continues to favor US large cap stocks.

Real Estate Preferred

The following chart shows our real estate ETF (VNQ) and our commodities complex ETF (DBC).



A controlled inflation environment, discussed earlier, provides a particularly good setup for real estate to perform going forward.

Indeed, VNQ was more resilient than DBC during the recent volatility bout, as it suffered less downside while enjoying a stronger rebound once signs of stability re-emerged.

PSIMON noticed this dynamic and while it is keeping a stable overall allocation to real assets, it is emphasizing real estate at the expense of the more volatile commodities ETF.

Fixed Income as a Hedge

PSIMON is also making a small allocation to our fixed income treasury ETFs, IEF and TLT.

However, this is not a call for outperformance.

Rather, it is a call for hedging the otherwise risk-on Columbus portfolio, as a precaution in a volatile environment.

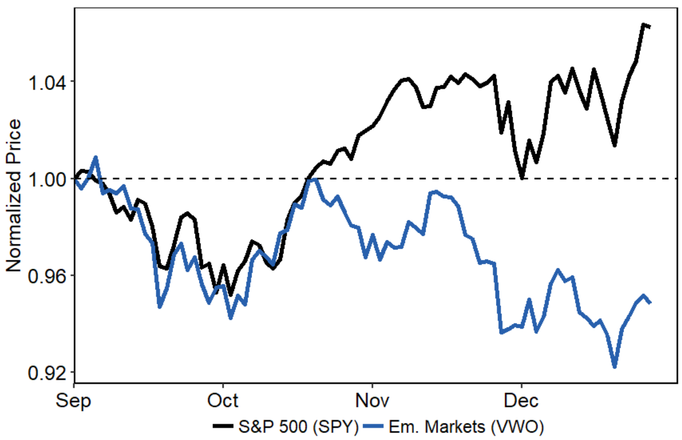
Emerging Markets Continue Their Struggle

The chart on the next page shows the S&P 500 (SPY) and our emerging markets ETF (VWO).

China's slowdown continues to be a drag for emerging markets as a whole.

As a result, PSIMON is staying away from VWO until the situation improves.

Emerging Markets Continue to Struggle

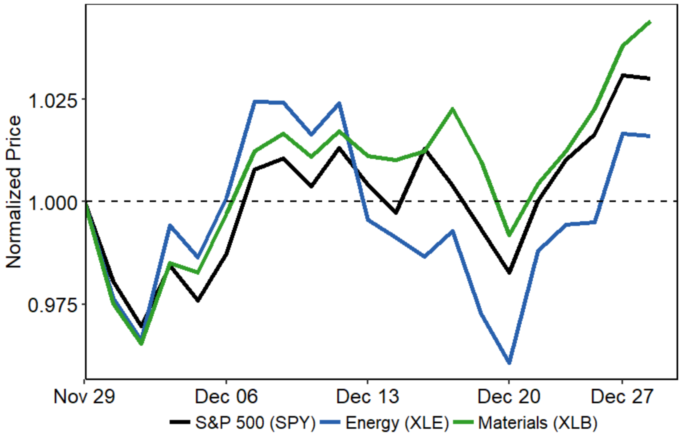


Sector Insights

Last month, PSIMON recommended an overweight of the materials sector (XLB) while also recommending an underweight for the energy sector (XLE).

Both of these calls performed as expected during the month, with XLB outperforming the S&P 500 while XLE underperformed slightly, as shown in the chart below.

Materials Outperformed Energy in December



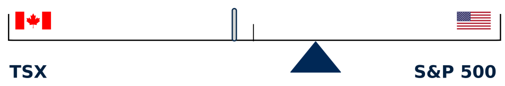
For Canadian Advisors

The following box shows the US/Canada relative stock market attractiveness indicator, useful for Canadian advisors.

TSX vs. S&P 500 Relative Attractiveness

The indicator below shows the relative attractiveness of the Canadian TSX index vs. the US S&P 500 index, adjusted for the USDCAD exchange rate.

Its purpose is to help Canadian advisors evaluate the attractiveness of the US stock market for clients based in Canada.



2. Tactical Models Allocations

Columbus Tactical Model

The table below shows the Columbus Tactical model allocations for this month. It also shows the changes from the prior period and the maximum weights allowed for each ETF.

A **green up triangle and value** show an increase in allocation, whereas a **red down triangle and value** show a reduction since last month.

S&P500 SPY *max 50%*	37%	▼ 7%
Small & Mid Caps VXF *max 40%*	-	
International Large Caps EFA *max 45%*	3%	▲ 2%
Japanese Equities EWJ *max 40%*	-	▼ 1%
Emerging Market Equities VWO *max 35%*	-	
Commodities DBC *max 35%*	15%	▼ 9%
Gold GLD *max 35%*	3%	▼ 2%
Real Estate VNQ *max 40%*	26%	▲ 10%
20+ Year Treasuries TLT *max 45%*	7%	▲ 7%
7-10 Year Treasuries IEF *max 60%*	8%	▲ 8%
Corporate Bonds LQD *max 60%*	-	
Inflation-Protected Bonds TIP *max 60%*	-	
Emerging Market Bonds PCY *max 50%*	-	
US Dollar Index UUP *max 60%*	-	▼ 5%
Short Term Treasuries SHY *max 100%*	1%	▼ 3%

The *max value* shows the upper weight limit for each ETF during an ideal market situation, when expected returns are high and volatility is low.

Totals may not add up to 100% due to rounding errors, in which case an adjustment should be made to SHY.

The model portfolio trades at **market close on the last trading day of the month**, which is one day after the report is sent to subscribers.

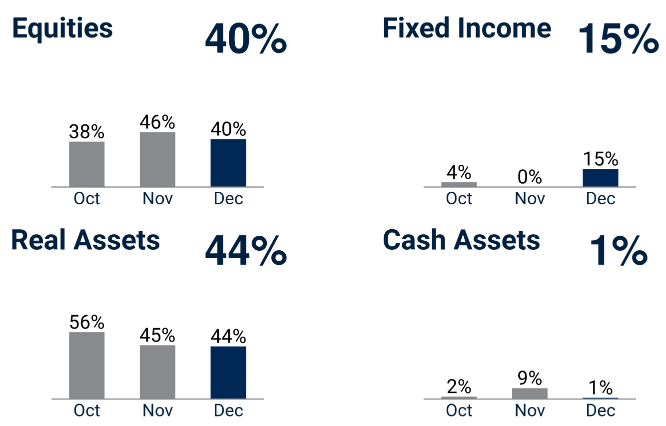
To learn more about how to use our Columbus Tactical model, please look at Appendix A - How to Use our Models. You can also find more details on the ETF universe for this model in Appendix B.

The chart below shows the summary allocations for the Columbus Tactical model. The allocation to each asset class is summed up in the chart.

ETFs are grouped as follows:

- **Equities:** SPY, VXF, EFA, EWJ and VWO.
- **Fixed Income:** TLT, IEF, LQD, TIP and PCY.
- **Real Assets:** GLD, VNQ and DBC.
- **Cash Assets:** SHY and UUP.

Columbus Allocation Summary



Low Volatility ESG Asset Mix Model

The table below shows the Low Volatility ESG Asset Mix model allocations for this month. It also shows the changes from the prior period and the maximum weights allowed for each ETF.

A **green up triangle and value** show an increase in allocation, whereas a **red down triangle and value** show a reduction since last month.

ESG MSCI EAFE Equities ESGD *max 100%*	-	
ESG MSCI Emerging Markets ESGE *max 100%*	-	
ESG MSCI USA Equities ESGU *max 100%*	13%	▼ 64%
ESG US Aggregate Bonds EAGG *max 100%*	21%	▲ 20%
ESG Corporate Bonds SUSC *max 100%*	-	
US Short Term Treasuries SHY ***min 20%**, max 100%*	66%	▲ 44%

The *max value* shows the upper weight limit for each ETF during an ideal market situation, when expected returns are high and volatility is low.

Totals may not add up to 100% due to rounding errors, in which case an adjustment should be made to SHY.

The model portfolio trades at **market close on the last trading day of the month**, which is one day after the report is sent to subscribers.

Because this is a **low volatility model,** it dynamically controls downside risk by emphasizing US Short Term Treasuries (SHY) whenever market volatility warrants it.

Moreover, the allocation to SHY has a set minimum of 20%, which effectively puts an upper exposure limit at 80% for equities and fixed income in aggregate.

To learn more about how to use our Low Volatility ESG Asset Mix model, please look at Appendix A - How to Use our Models.

You can also find more details on the ETF universe for this model in Appendix B.

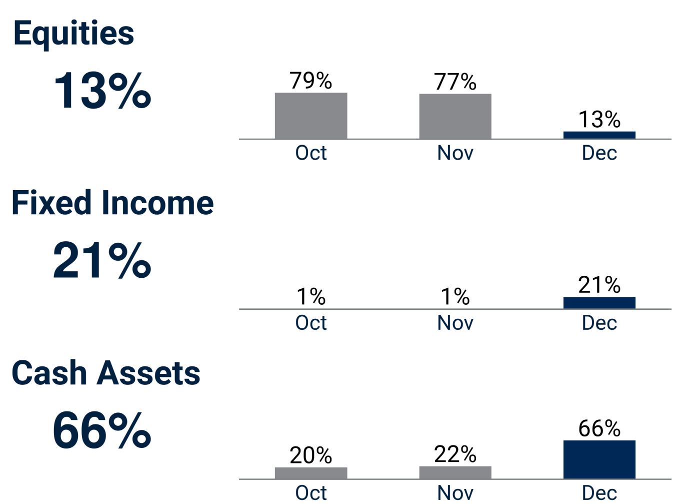
The chart below shows the summary allocations for the Low Volatility ESG Asset Mix model. The allocation to each asset class is summed up in the chart.

For this model, ETFs are grouped as follows:

- **Equities:** ESGD, ESGE, and ESGU.
- **Fixed Income:** EAGG and SUSC.
- **Cash Assets:** SHY.

Unlike the Columbus Tactical model, the Low Volatility ESG Asset Mix model is simpler by construction and does not include any real assets.

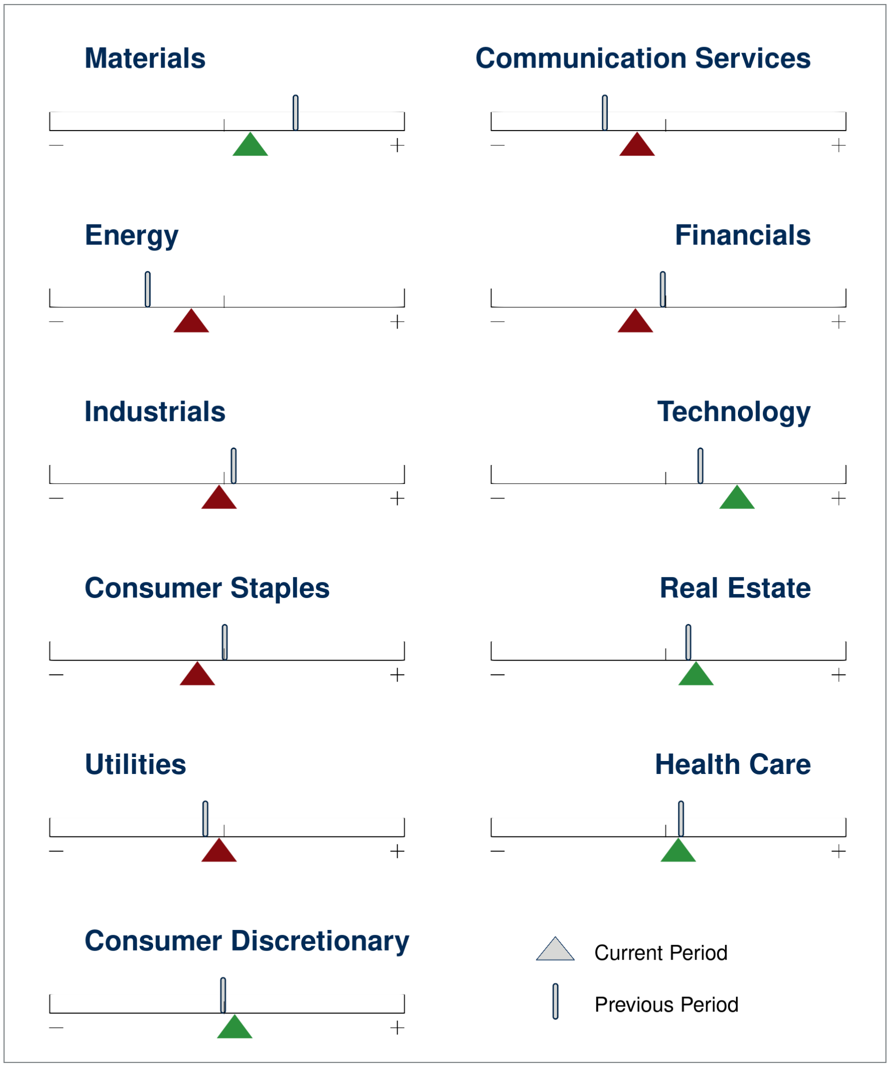
Low Vol ESG Allocation Summary



3. Sector Outlook

Sector Relative Attractiveness

The figure below shows the attractiveness of each sector **relative to the S&P 500 index**.



The triangle indicates the current attractiveness level, whereas the vertical bar indicates that sector's attractiveness forecast made in the previous period (last month).

A **green triangle** shows an overweight recommendation relative to the S&P 500. A strong overweight recommendation is associated with a triangle that is furthest to the right.

Conversely, an underweight is recommended when the **triangle is red** and on the left side of the indicator.

When the triangle is in the middle, a neutral weight relative to the S&P 500 is recommended.

For details on the S&P 500 GICS sector weightings, please see **Appendix B**.

4. Performance Summary

Columbus Tactical Model Performance

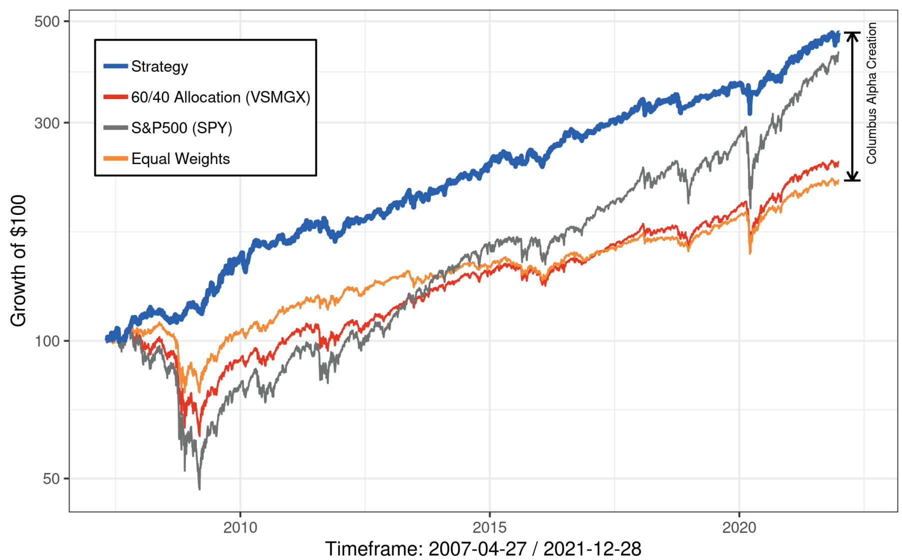
The chart below shows the Columbus Tactical model performance since April 2007. This is based on the **latest release of PSIMON, our AI platform.**

The blue curve shows the model performance based on the most recent software release. The grey curve is the S&P 500 ETF (SPY), whereas the red curve is the Vanguard Moderate Growth ETF (VSMGX), which provides a 60/40 allocation between stocks and bonds. The orange curve is the equal weights portfolio created by equally weighting all 15 ETFs forming the Columbus investment universe.

The investment value (alpha) created by the Columbus model is shown by the double arrow located on the right side of the chart (Columbus Alpha Creation). This double arrow compares Columbus (blue) to the no-skill portfolio represented by the Equal Weights benchmark (orange). Comparing these two curves over the period shows how the model generates returns above and beyond the Equal Weights no-skill portfolio over time.

As we continue to improve PSIMON by adding more training data, new economic and financial indicators, and improving our machine learning forecasters with the latest technological breakthroughs, **we expect the performance of the Columbus model to keep improving over time.**

The table below provides a performance summary of the model compared to the same three benchmarks shown in the chart.



	Columbus	60/40 Allocation	S&P500	Equal Weights
Annualized Return (%)	11.16	6.34	10.42	5.67
YTD Gain / Loss (%)	15.84	10.22	29.26	8.1
Maximum Drawdown (%)	-14.41	-41.11	-55.2	-29.85
Annualized Standard Dev. (%)	9.85	12.69	20.35	9.55
Positive Rolling Years (%)	97.94	81.46	84.69	83.44
Annualized Sharpe Ratio	1.13	0.5	0.51	0.59
MAR Ratio	0.77	0.15	0.19	0.19

Low Volatility ESG Asset Mix Model Performance

The chart below shows the Low Volatility ESG Asset Mix model performance since April 2007. This is based on the **latest release of PSIMON, our AI platform.**

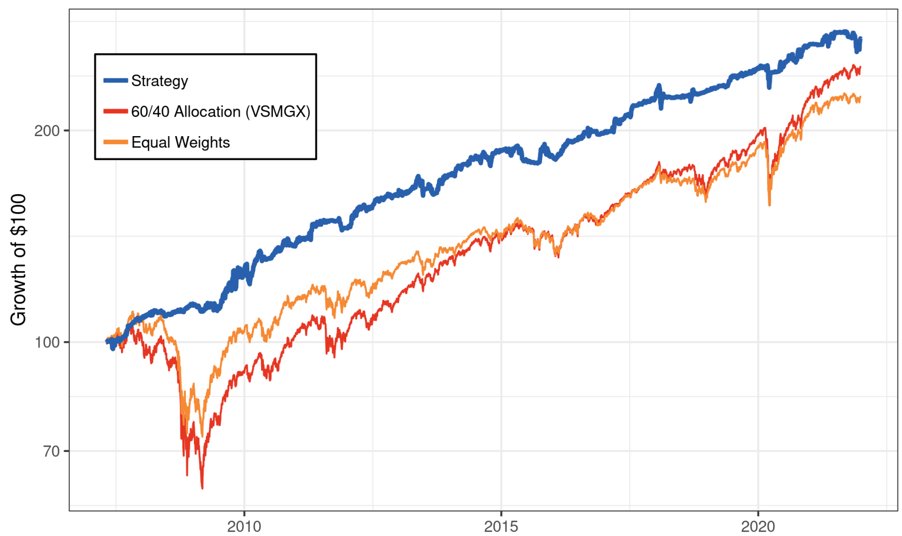
The blue curve shows the model performance based on the most recent software release. The red curve is the Vanguard Moderate Growth ETF (VSMGX), which provides a 60/40 allocation between stocks and bonds. The orange curve is the equal weights portfolio created by equally weighting all 6 ETFs forming the Low Volatility ESG model investment universe.

In addition to being ESG-qualified through the judicious selection of its ETF universe, this model seeks to provide returns similar to a 60/40 balanced portfolio, while **greatly reducing its volatility**, with a particular focus on containing the magnitude of the drawdowns.

As we continue to improve PSIMON by adding more training data, new economic and financial indicators, and improving our machine learning forecasters with the latest technological breakthroughs, **we expect the performance of the Low Volatility ESG model to keep improving over time.**

The table below provides a performance summary of the model compared to the same benchmarks shown in the chart.

Low Volatility ESG Asset Mix Performance



Timeframe: 2007-04-27 / 2021-12-28

	ESG Asset Mix	60/40 Allocation	Equal Weights
Annualized Return (%)	7.01	6.34	5.63
YTD Gain / Loss (%)	1.79	10.22	5.12
Maximum Drawdown (%)	-7.33	-41.11	-33.64
Annualized Standard Dev. (%)	5.95	12.69	10.76
Positive Rolling Years (%)	94.97	81.46	79.78
Annualized Sharpe Ratio	1.18	0.5	0.52
MAR Ratio	0.96	0.15	0.17

Appendix A

How to Use Our Service

Our service provides you with an outlook on the market for the upcoming month, supported by recommended allocations for two strategies and a recommendation for all 11 S&P 500 sectors.

The information is presented as follows:

1. The front page provides a summary of key take-aways, supported by PSIMON's outlook:
    - The top section provides a summary of key take-aways for the upcoming month. When appropriate, we also include a box for news and updates about our models and strategies.
    - The bottom section includes a bar chart showing the most relevant changes in sector outlooks for the upcoming month. It also includes indicators showing the popular factors Value vs. Growth and Small caps vs. Large caps.
2. Next, Section 1 provides market insights and a summary of PSIMON's outlook for the upcoming month.
    - The box provides the key highlights of PSIMON's outlook for the upcoming month.
    - Next, we interpret PSIMON's outlook, which typically includes a general context as well as some more detailed analysis on specific recommendations. This section helps you understand in plain English why PSIMON is making certain changes to its model allocations and indicators. This is all based on PSIMON's analysis and outlook.
    - For Canadian advisors, we include an indicator showing the relative attractiveness of the Canadian vs. the US equity market, adjusted for the exchange rate.
3. Section 2 provides the details on our tactical models. These models are 100% automated and run on our PSIMON AI platform. They were developed to help adjust client portfolios to the prevailing market trends to help capture alpha while reducing exposure to risk. Two models are included: the Columbus Tactical model and the Low Volatility ESG Asset Mix model. Both models adapt to the market every month and trade the day after the report is published.
    - The Columbus model is a tactical global allocation strategy that includes 15 ETFs, each representing a global asset class. The ETFs are grouped into stocks, bonds, real assets and cash assets. Up to 8 ETFs are selected each month.
    - The Low Volatility ESG Asset Mix model includes 6 ESG-qualified ETFs, grouped into stocks, bonds and cash assets. All 6 ETFs may be part of the recommended portfolio at the same time, but their relative weights change from month to month.
    - Details on these ETFs may be found in Appendix B.
4. Section 3 provides an outlook for each 11 GICS sector relative to the S&P 500. All 11 sectors are analyzed and an outlook is provided by PSIMON in the form of a simple indicator. These indicators show a relative attractiveness of the sector compared with the S&P 500. The appendix shows the list of ETFs used to represent these sectors, providing a simple way to over- or under-weight particular sectors as desired.
5. Section 4 provides the historical performance our each model, based on the latest PSIMON software release. Please contact us should you have an interest in learning about the performance of prior models.

Helping You Interpret Key Market Dynamics

PSIMON produces a lot of useful information every month, all of which is **free of opinions and human biases.**

You will find many **data-driven commentaries and discussions** throughout the report. These commentaries are meant to help you understand and bring clarity on the most relevant market dynamics at play.

We generally use charts and tables to illustrate key points. **Feel free to use these illustrations with your clients**, especially if you find them helpful to support your client discussions.

Ultimately, our objective is to help you **act with clarity and conviction** when you consider trades in client portfolios.

We are here to help, and we are always open to suggestions to improve our service. So don't hesitate to contact us with your suggestions.

Preserve Capital and Enjoy Consistent Returns

PSIMON was developed to help you preserve client capital during bear markets while also delivering consistent and compelling performance over the long run.

These dual objectives are achieved through **active tactical allocation** to adapt to the prevailing market conditions.

Columbus Tactical Model

Columbus Delivers Uncorrelated Returns

The Columbus Tactical model was developed to deliver uncorrelated returns during those times when it is most important to be **decorrelated from the stock market.**

The concept of uncorrelated returns is used extensively by asset managers such as large institutions and pension funds.

Rather than solely trying to maximize returns during bull markets, which often comes with amplified losses during bear markets, these asset managers use different sources of returns to build portfolios that are **resilient to global economic uncertainty.**

The Columbus model was developed with this idea in mind by providing a simple way for investment advisors to deliver uncorrelated returns within their client portfolios.

The primary objectives of the model are to protect capital during bear markets while also capturing stable growth over the long term.

During bear markets, Columbus invests in assets that are generally not correlated with the stock market. This helps deliver returns during those times when uncorrelated returns truly matters to overall performance.

Conversely, Columbus becomes correlated to global equities **during stable bull markets in stocks**. This allows it to capture stock market upside and ensure your clients do not miss out on those gains.

How Columbus Works

The Columbus model selects up to 8 assets from a universe of 15 low costs, highly liquid ETFs, each representing one of the world's major asset classes.

The strategy selects assets and adjusts their allocation weights to optimize for the best risk/return tradeoff, by emphasizing safety and capital preservation over short term gains.

The Columbus model trades monthly on the last trading day of the calendar month.

Columbus is Not a Market Timer

The Columbus model was **NOT developed to be a market timer.** Unlike a market timer, it may stay out of the stock market during times when it perceives a high degree of risks in equities, even though equities may turn out to be rallying strongly during those high risk periods.

Columbus is a Tactical Sleeve

Columbus may recommend a 100% stock allocation during high quality and stable bull markets in stocks, whereas it can also recommend a 100% allocation in government treasuries during bear markets. To ensure some level of diversification, certain allocation limits have been imposed on each ETFs, discussed in Section 2. These limts are dynamically reduced based on the expected volatility of each ETFs. While this provides a way to manage concentration risks into each ETF, it does not preclude the possibility of allocating 100% of the portfolio into equity ETFs.

For these reasons, Columbus should not be used as a portfolio core but **rather as a tactical sleeve to complement a client's core portfolio.**

Low Volatility ESG Asset Mix Model

Easy-To-Implement ESG Model

The low volatility ESG model universe was selected to simplify the task of ESG investing. We selected ESG optimized ETFs sponsored by iShares, each representing a broad asset class.

The equity asset classes represented include the US stock market (ESGU), international developed stock markets (ESGD) and emerging markets (ESGE). Bonds asset classes are represented with US aggregate bonds (EAGG) and corporate bonds (SUSC). Cash assets is represented with short term US treasuries (SHY).

Seeking Performance at Low Volatility

The Low Volatility ESG Asset Mix model is designed to rotate among these 6 ETFs as market conditions warrant.

The model has a preset minimum weight of 20% in SHY, useful as an insurance against swift, unforeseen and negative market shocks. However, the remaining 80

To manage market volatility, the model makes a careful assessment of the current market situation and its expected volatility in the short term.

Only when all lights are showing green - that is, low expected short term volatility - will the model invest up to 80% in the equity ETFs. Otherwise, it will seek refuge in SHY to protect against potential expected volatility.

As reference, the model allocated over 45% of its historical weightings in SHY to protect against such volatility.

Since it minimally holds 20% in SHY at any time, this implies that an additional 25% has been added, on average, to dynamically counter expected volatility bouts over the period since April 2007.

Sector Outlook Model

The Sector Outlook model provides a forecast on the relative attractiveness of the S&P 500 equity sectors over the next month.

By surgically over-weighting or under-weighting sectors in the S&P 500, the model can help you create additional alpha for your client portfolios.

Each of the 11 sectors has an associated ETF, making it easy to trade sectors directly. Appendix B includes the ETF list of along with their most recent published weight in the S&P 500 index.

How the Sector Outlook Works

The figure below provides an example of the Sector Outlook indicators.

For each sector, an indicator shows the attractiveness of that sector relative to all other sectors in the S&P 500.

The triangle indicates the current attractiveness level, whereas the vertical bar indicates that sector's attractiveness forecast made in the previous period (last month).

A **green triangle** shows an overweight recommendation relative to the S&P 500. A strong overweight recommendation is associated with a triangle that is furthest to the right.

Conversely, an underweight is recommended when the **triangle is red** and on the left side of the indicator.

When the triangle is in the middle, a neutral weight relative to the S&P 500 is recommended.

This same indicator format is used for all 11 sectors.

Sector Indicator Example

Using the Sector Outlook in Practice

The Sector Outlook can be used in an equity portfolio in several ways, including:

- The simplest approach is to purchase the equivalent SPDR sector ETF in an equity portfolio to overweight your portfolio in that sector.
- For portfolios that include individual stocks, an overweight signal can indicate to increase the weighting of stocks that belong to that sector.
- Conversely, also for individual stock portfolios, a sector underweight may indicate to reduce some stock positions that belong to that sector.
- A combination of the above may also be useful in certain types of client portfolios.

Market Factor Indicators

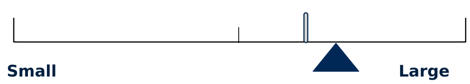
We also provide two market factor indicators on the front page. These are meant to help you assess which factor tends to prevail in the current market environment.

These factors are very broad in scope, and may occasionally be at odd with PSIMON's outlook. This is because PSIMON's outlook is generally far more surgical in scope, while the factors are represent broader market tendencies.

For all indicators, the **blue triangle** shows the current outlook while the vertical bar shows the previous month's indicator value as reference.

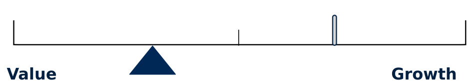
Small - Large Factor Indicator

This indicator provides a sense of whether small or large caps are currently in favor.



Value - Growth Factor Indicator

This indicator provides a sense of whether value or growth stocks are currently in favor.



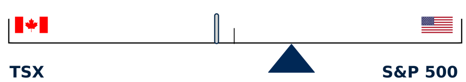
US/CAN Relative Attractiveness

For Canadian advisors

At the end of Section 1, we provide a box that includes an indicator showing the relative attractiveness of the Canadian stock market vs. the US stock market. This indicator is also adjusted for the USDCAD exchange rate, to express the US market as experienced from the perspective of an investor based in Canada, investing in Canadian dollars.

We developed this indicator for our Canadian advisor audience to help them evaluate US market opportunities from the Canadian perspective.

This indicator is intended to help Canadian advisors manage the un-hedged currency exposure to the US stock market.



Appendix B

ETFs Used by Our Models

Columbus Tactical Model ETF List

Our Columbus Tactical model uses a universe of 15 ETFs to represent the major asset classes available in global finance. These are some of the largest and most liquid ETFs available, and they all trade on the US market.

The US stock asset class is covered by two ETFs: the S&P500 ETF (SPY), representing large cap stocks, and the extended market ETF (VXF), representing small and mid cap stocks.

The international stock market is split among three ETFs: EFA to provide exposure to international developed market stocks (ex-US), VWO to provide exposure to emerging market stocks, and EWJ to cover the Japanese market which tends to have a relatively low correlation to other stock markets.

US Treasuries are represented by TLT and IEF, while inflated-protected bonds are represented by TIP. LQD is used to represent investment grade corporate bonds while PCY is used for emerging market sovereign bonds.

Real assets are represented by VNQ (real estate), DBC (commodities) and GLD (gold). For cash assets, we use short term treasuries (SHY) and the US dollar bullish ETF (UUP).

The table below provides a short description of all ETFs comprising the Columbus investment universe along with their total assets and annual expense ratios. Please refer to the ETF sponsor's web site for details.

Symbol	Exp. Ratio	ETF Name and Description
SPY	0.09%	SPDR S&P500 Index
EFA	0.32%	iShares MSCI EAFE Index
VWO	0.10%	Vanguard FTSE Emerging Market Equities
VXF	0.06%	Vanguard Extended Market (US small & mid caps, ex-S&P500)
EWJ	0.51%	iShares MSCI Japan Equities
VNQ	0.12%	Vanguard REIT Index
GLD	0.40%	SPDR Gold Trust (Gold Bullion)
DBC	0.82%	PowerShares DB Commodity Index Tracking Fund
IEF	0.15%	iShares 7-10 Year Treasury Bonds
TLT	0.15%	iShares 20+ Year Treasury Bonds
TIP	0.19%	iShares TIPS Bonds
LQD	0.14%	iShares iBoxx $ Investment Grade Corporate Bond Fund
PCY	0.50%	PowerShares Emerging Markets Sovereign Debt Portfolio
UUP	0.68%	PowerShares DB US Dollar Bullish Index Fund
SHY	0.15%	iShares 1-3 Year Treasury Bonds
AVERAGE	**0.29%**	

Sector Outlook ETF List

The S&P 500 is composed of 11 sectors defined by the Global Industry Classification Standard (GICS).

We use the Select Sector SPDR ETFs to track these sectors. PSIMON uses these ETFs to produce the Sector Outlook indicators.

As of September 30, 2021, the GICS sector weightings were as shown in the table below.

Please consult the ETF sponsor's web site for more information.

Symbol	Exp. Ratio	GICS Sector Weight	Description
XLB	0.13%	2.5 %	Materials Sector SPDR ETF
XLC	0.13%	11.3 %	Communication Services Sector SPDR ETF
XLE	0.13%	2.8 %	Energy Sector SPDR ETF
XLF	0.13%	11.4 %	Financials Sector SPDR ETF
XLI	0.13%	8.0 %	Industrials Sector SPDR ETF
XLK	0.13%	27.6 %	Technology Sector SPDR ETF
XLP	0.13%	5.8 %	Consumer Staples Sector SPDR ETF
XLRE	0.13%	2.6 %	Real Estate Sector SPDR ETF
XLU	0.13%	2.5 %	Utilities Sector SPDR ETF
XLV	0.13%	13.3 %	Health Care Sector SPDR ETF
XLY	0.13%	12.4 %	Consumer Discretionary Sector SPDR ETF
AVERAGE	**0.13%**		

Low Volatility ESG Asset Mix ETF List

We selected a list of low cost ETFs provided by iShares to develop the universe of our Low Volatility ESG Asset Mix model.

The model always selects these 6 ETFs, but their realtive weights will change from month to month, depending on the prevailing risk/return situation in the market.

To learn more about these ETFs and the methodology they use to optimize for their respective ESG mandates, please consult the ETF sponsor's web site.

Symbol	Exp. Ratio	ETF Name and Description
ESGU	0.15%	iShares MSCI USA ESG Optimized ETF
ESGD	0.20%	iShares MSCI EAFE ESG Optimized ETF
ESGE	0.25%	iShares MSCI Emerging Markets ESG Optimized ETF
EAGG	0.10%	iShares ESG US Aggregate Bond ETF
SUSC	0.18%	iShares ESG USD Corporate Bond ETF
SHY	0.15%	iShares 1-3 Year Treasury Bonds
AVERAGE	**0.17%**	

Appendix C
About PSIMON™

PSIMON is Laplace Insights™ proprietary machine learning platform used to produce the investment outlooks and tactical models found in this document.

It is the result of 6 years of research in partnership with the AI research team at the University of Sherbrooke in Canada. It includes an ensemble of state-of-the-art machine learning algorithms that were specifically developed to address the unique challenges of predicting financial markets.

PSIMON Adapts to Changing Markets

Our AI research is focused on developing and improving machine learning algorithms that can learn the market in real-time and adapt to regime changes and structural breaks as they occur.

For example, our models were developed to perform well in challenging situations such at the Covid crash in March 2020, as well as more traditional bear markets such as the 2008 financial crisis.

Our models adapt to both slow and fast changing market situations, enabling them to perform well during both types of crises. This includes history's shortest bear market in March 2020, and more traditional bear markets that take longer to unwind such as the 2008 Financial Crisis or even the Dot-Com crash of 2000.

Learning Fast and Slow

History often matters a lot, as Mark Twain is reputed to have said in this quote:

"History doesn't repeat but it often rhymes."

PSIMON is built using an ensemble of many predictive models, each with the ability to provide forecasting value and insights in specific types of market situations.

At one extreme, PSIMON includes models that are quick to learn and adapt to the market's rapidly changing dynamics, enabling it to react to major market shifts such as the Covid crash of March 2020.

On the other hand, PSIMON also includes models that have been trained using decades of data, enabling it to capture the lessons of history. In other words, PSIMON can recognize and adapt to these situations as they happen in real-time.

Combining models that can learn and adapt quickly with models that have learned and endured the lessons of history gives PSIMON the unique ability to deliver performance in both **stable and rapidly changing markets**, as they occur at different times.

Continuously Improving PSIMON

Our research team is continuously at work to improve the algorithms used by PSIMON, providing it with more depth and breadth of analysis.

This not only results in better performance, but it also makes PSIMON more robust to future, *unseen-before events*, while giving it the resilience to quickly bounce back during important market stresses.

We develop and release new models and improved versions of PSIMON on a regular basis. These efforts ensure that PSIMON keeps getting better over time, providing you with the value you seek for your clients.

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