PGIM FIXED INCOME

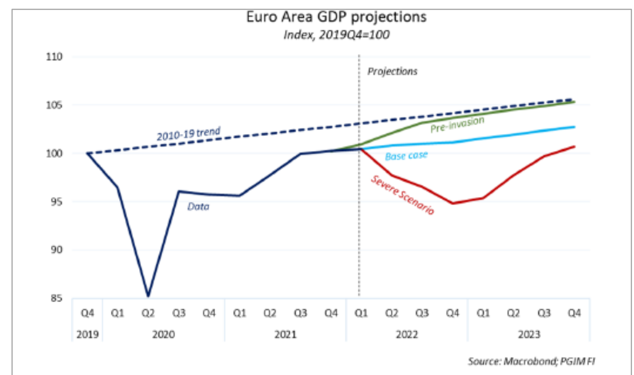
Feeling for Fault Lines

WEEKLY VIEW FROM THE DESK | May 16, 2022

QUICK LINK TO THE RETURNS TABLE

MACRO

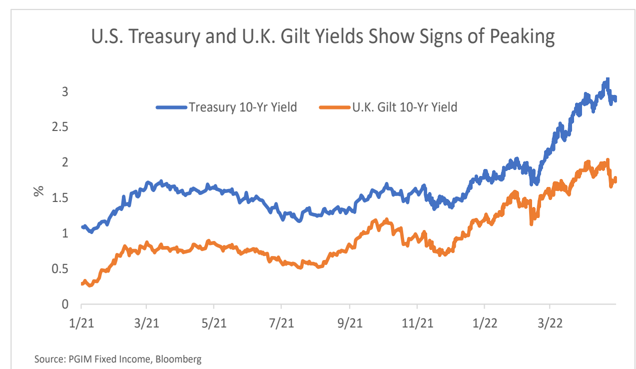
- While the global economy certainly isn't lacking in widely recognized, grave concerns, we remain well aware that hidden fault lines may exist across the financial system. It's necessary to search for these fault lines as they tend to reveal themselves when market functioning becomes more fragile and volatility concurrently surges across the major asset classes. Furthermore, the markets are in uncharted waters—it has been decades since they were stress tested for sustainably elevated inflation and interest rates.
- While banks are much better capitalized than they were heading into the Global Financial Crisis, stringent regulations have disincentivized them to make markets and provide liquidity, thus pushing risks to non-banks and exacerbating the risk of unexpected events. Meanwhile, central banks, which have been key buyers of fixed income, are stepping back, further increasing the risks of market dislocations. As they withdraw, policymakers' priority has firmly shifted from supporting growth to bringing down inflation, undercutting hopes of the Fed, amongst other major central banks, pursuing a gentler hiking path in an effort to curtail further market volatility.
- As for the global economy, our 2.5% growth forecast for the euro area this year is a bit lower than consensus, and our 2023 forecast of 1.3% falls significantly under the 2.3% median expectation. As the Russia-Ukraine conflict drags on, the market has yet to fully consider the likelihood of a sudden stop in Russian gas into Europe, and we see a 15% probability of such a scenario. Meanwhile, the U.K. offers a cautionary tale for central bank independence as inflation expectations continue to climb, leading politicians to increasingly criticize the BoE for the cost-of-living squeeze facing the public.



- We also recently lowered our 2022 GDP forecast for the U.S. from 3.4% to 2.9%—which is still above the longer-term trend of about 2.1%—as the -1.4% GDP print in Q1 imparts a weaker trend for the year. Underlying growth is still solid, but a significant amount of the spending has been on imports (net exports have been quite weak) and much of the inventory rebuilding has occurred, at least outside of autos. Furthermore, financial conditions have tightened more rapidly than expected, and higher energy prices are hitting consumers.
- China's growth outlook is also concerning as it reported sharp April slowdowns in industrial production, fixed-asset investment, retail sales, and property activity. While industrial production is still expanding at an above-trend rate, retail sales have significantly slumped to levels last seen five years ago, reversing any efforts by the Chinese government to rebalance the economy away from resource-heavy industries to domestic consumption. What's perhaps more worrying for Chinese officials and their prospects for political stability is the sharp increase in the unemployment rate to more than 6%, the highest in at least a decade. Indeed, we've seen high-ranking policymakers urging proactive actions to support the economy given the general lack of specific measures thus far. Ultimately, it's possible that headlines about zero-COVID measures are a red herring regarding the true underlying weakness of China's economy as the real estate sector was already in sharp slowdown following a series of defaults, and earlier efforts to clamp down on leverage may have pricked the bubble for a sector that is responsible for 25% of China's GDP.

RATES

- The relentless rise in developed-market yields may be beginning to peak, as U.K. gilts led the global rally last week with around 30 bps of yield declines across the curve. Treasury yields also dropped substantially, a move that is disproportionately driven by TIPS-implied breakevens. Along with the decline in yields, expectations for a rapid tightening cycle have cooled slightly, and the vast majority of the rate increases is still expected in 2022. Long-end auctions last week were well received as investors welcomed the higher level of yields, a good sign for the upcoming 20-year sale on Wednesday (even though it cheapened leading into the auction).
- Meanwhile, Fed officials reiterated their determination to bring down inflation and willingness to let financial conditions tighten further. The rolling four-month change in the Goldman Sachs financial condition index has reached 2020 and 2008 levels, with the equities and long-rate components contributing the most to the tightening.



- Agency mortgage-backed securities continued to firm after the market found a local wide in spreads a few weeks ago. We think light origination will keep benefitting the market, although primary rates have reversed their rapid increases as yields fell and MBS held in. Lower 30-year coupons continue to outperform given originator buybacks and dealers' preference to move away from production coupons despite better buying from mortgage REITs and money managers.

IG CORPORATES

- The complexion of the U.S. IG market has changed with the recent decline in dollar prices in longer-maturity bonds. While many observers point to the improved convexity in the space, that warrants some context as the spread curve remains relatively flat and the bonds have longer durations that also

For Professional Investors only. All investments involve risk, including possible loss of capital.

offer less spread per unit of duration, which may warrant a focus on the intermediate portion of the curve. However, there is an argument for the improved convexity, particularly among BBB-rated issuers with a strong incentive to maintain their investment-grade ratings.

- From a more tactical perspective, pensions and other institutional investors with long-term liabilities continue to place a bid under the back end of the curve, while a broader range of investors—perhaps with more acute economic concerns—continues to place a bid under the front end of the curve. As a result, the intermediate portion of the curve has been underperforming recently. Last week, financials outperformed industrials, while A-rated issues outperformed BBBs. Recent issuance has also been concentrated in A-rated names amid investors' preference for stronger IG credits, despite the potential for increased event risk in A-rated industrials.
- In Europe, the gap between prices for IG corporate bonds and bank bonds narrowed last week. With no new bank issuance, the sector's spreads tightened 10 to 20 bps. This recovery amounted to around one quarter to one third of the widening in bank bonds' spreads in the last two months. By contrast, a moderate volume of new IG corporate bonds were issued at concessions of five to 10 bps last week, which consequently pushed secondary spreads wider.
- In terms of potential fault lines, the ECB owns around 30% of all eligible IG-rated corporate bonds in Europe, which is the only segment where spreads haven't materially widened this year and looms as a potential risk as the bank reduces its corporate bond holdings.

HIGH YIELD

- U.S. high yield posted negative total and excess returns for a sixth consecutive week as spreads widened and yields rose. By quality, BBs held in the best while CCCs declined the most. For much of the year, BBs underperformed as the market focused on inflation and interest-rate risk, but they have outperformed in recent weeks as the market has turned its attention to recession risk.
- By industry, all sectors posted negative returns for a third week in a row. The worst performing sectors were retail (-2.53%), healthcare (-2.03%), and media (-1.65%). Electric Utilities (-0.26%), food/beverage/tobacco (-0.56%), and paper (-0.58%) were the top performing sectors last week. Primary activity remained light as Frontier Communications priced a $1.2B B3/B secured 8NC3 at 8.75%. The bonds traded up nearly two points on the break, indicating that demand remains strong for deals that are priced fairly. YTD issuance totals $58.6B, down 75% over the same period in 2021.
- Loans posted a relatively sizeable negative return last week after entering the week down just modestly for the year. At 94.72, the index now stands its lowest level since November 2020. The selloff was largely technical in nature as CLO formation has been hampered by a lack of AAA buyers. Loan mutual funds also saw outflows, with ETFs posting a $440M outflow, which pressured some of the largest, most liquid names. Consumer, retail, building products, as well as any names that reported weaker earnings, were lower on the week.
- In European high yield, average yields declined and spreads widened as volatility and recession risk continued to weigh on sentiment. CCCs underperformed, and we believe they remain vulnerable to further downside should the market begin pricing in higher defaults. That said, we continue to expect default rates to remain low over the next 12-24 months despite a growing risk of recession—assuming that a potential recession remains shallow. Loans posted a negative return, significantly underperforming high yield last week. While we were more constructive on loans than bonds, we have recently grown more cautious in light of a reduced bid for CLOs.

EMERGING MARKETS

- EM bond prices remain under pressure as EM central banks continue to raise interest rates to control inflation and growth in China continues to slow. If China's slowdown turns out to be the result of its government's zero-covid policy, then loosening that policy should be a straightforward approach to an economic recovery. But, as previously noted, China's economic woes might run deeper: its property bubble may be deflating, dragging down consumption with it. Monetary policy appears to have little or no effect—China's interbank rate has fallen 0.50% in the last two months—and fiscal policy has not been ambitious enough. The prospect of structural or political reform—like measures after the Asian currency crisis when China restructured its state enterprises and joined the WTO—seems remote.
- Across EM hard-currency bonds, spreads continued to widen, particularly for lower-rated issuers. We maintain the barbell structure of our portfolios and are considering adding more higher-quality issues at the long end and more higher-yielding issues at its short end, in government as well as corporate hard-currency bonds.
- EM local-currency bond yields continued to rise as well, especially in lower-quality issues. We continue to underweight EM local-currency bonds in our portfolios. In EM currencies, we maintain our long US-dollar bias. Here, too, the weakest EM currencies continue to selloff the most.

SECURITIZED PRODUCTS

- U.S. conduit AAA CMBS spreads widened on macro volatility last week, and a couple conduit deals moved their timing up, and we now expect up to four deals in the next month. SASB floater spreads also followed broader markets wider. Issuance remains steady, and there is currently a $3B floating hotel/casino deal in the market with AAA talk at SOFR+210 bps. A ~$2B CRE CLO priced last week with the AAA at SOFR+235. Non-agency RMBS spreads were wider last week, especially in CRT. Freddie's new issue CRT widened 5-15 bps in secondary trading. Generically, CRT M2s widened 20-50 bps and B1s 35- 75 bps.
- U.S. CLO spreads were wider across the capital structure last week. Primary levels continue to lag secondary spreads as some investors do not grasp the widening occurring. Primary spreads are now ~20-30 bps tighter than where similar secondary trades are clearing. We believe spreads for benchmark issuers in the U.S. are ~3M SOFR+159/240/285/415/795 for AAA/AA/A/BBB/BB, respectively for 5-year reinvestment period deals. Total issuance across new issue, refinancings, and resets was ~$3.3B for the week, in line with the ~$3.2B the prior week. European spreads were wider across the capital structure last week with mezzanine tranches particularly impacted by the widening. However, AAA spreads continue to lag as they remained in the 3E+120s, roughly 20 bps tight to secondaries.
- ABS spreads were wider in aggregate last week due to broader market volatility, coupled with near term surge in new issue supply. For example, a Marriott timeshare deal widened the senior class 30 bps to T+130-140bps to clear, and Santander subprime auto deal moved spreads out 10-20 bps to clear senior and subordinate classes (AA class at T+170bps). The exception was 1yr top tier prime auto which tightened to T+60s. Secondary spreads remain soft, particularly unsecured consumer loans, as dealers remain risk averse. New issuance surged for the second straight week with $10B pricing, and similar heavy supply expected this week. YTD issuance reached $104B, 20% ahead of 2021 pace. We would continue to opportunistically sell, while being highly selective on additions. Fundamentals continue to be stable, though inflationary and monetary policy headwinds persist.

MUNICIPAL BONDS

- Muni technicals remained soggy last week with $10B of outflows for the 18th consecutive week of outflows for a total of $54.8B. Supply reached $8.1B, 103% of the five-year average, and BWIC volume reached a record of $2.5B on Wednesday. Not surprisingly, performance remained weak and failed to catch the mid-week rally in Treasuries. Many deals continue to struggle cross the finish line amid uncertain pricing and demand.

For Professional Investors only. All investments involve risk, including possible loss of capital.

THE RETURNS TABLE As of May 13, 2022

Sovereign Rates	Duration	YTM	OAS	Yield/ OAS Change (BPS) WTD	QTD	YTD	Prior Year	Total Return (%) WTD	QTD	YTD	Prior Year
U.S. 2-Year	1.9	2.58	---	-15	25	185	243	0.24	-0.30	-2.79	-3.30
U.S. 5-Year	4.6	2.89	---	-21	41	160	204	0.80	-1.82	-6.76	-7.78
U.S. 10-Year	8.6	2.94	---	-21	58	141	126	1.67	-5.01	-11.42	-9.00
U.S. 10-Year Breakeven	--	2.74	---	-12	-9	15	20	---	---	---	---
U.S. 10-Year TIPS	4.8	0.19	---	-8	68	129	107	0.66	-5.25	-8.53	-2.61
U.S. 20-Year	15.2	3.33	---	-13	71	138	104	2.00	-10.29	-19.49	-13.56
U.S. 30-Year	19.8	3.11	---	-15	63	118	69	2.40	-12.69	-22.65	-12.77
UK 10-Year	8.3	1.74	---	-25	13	77	85	2.15	-0.92	-5.71	-4.86
Germany 10-Year	9.7	0.94	---	-19	40	113	107	1.82	-3.74	-9.56	-9.56
Switzerland 10-Year	9.8	0.74		-25	17	89	89	2.43	-1.56	-8.13	-7.90
Japan 10-Year	9.6	0.24	---	0	3	18	15	-0.02	0.02	0.02	0.02
Australia 10-Year	9.2	3.40	---	-7	56	173	159	0.66	-4.70	-14.07	-11.65
Canada 10-Year	8.7	2.96	---	-17	56	153	139	1.52	-4.45	-11.66	-9.53
MAJOR FI MS INDICES											
Global Aggregate Unhedged	7.2	2.58	50	1	8	14	18	0.30	-6.39	-12.16	-13.35
Global Aggregate Hedged	7.2	2.58	50	1	8	14	18	0.87	-2.82	-7.65	-6.58
U.S. Aggregate	6.7	3.43	50	1	9	14	19	0.89	-4.02	-9.71	-8.45
Euro-Aggregate (Unhedged)	7.2	1.43	85	-1	15	28	36	1.39	-3.50	-8.73	-8.39
Japanese Aggregate	9.4	0.28	1	0	0	0	0	0.14	-0.37	-1.92	-1.82
MAJOR FI CREDIT INDICES											
Mortgage-Backed (Agency)	6.2	3.52	36	-3	13	5	24	1.19	-3.25	-8.06	-8.19
Global IG Corporate Bonds	6.8	3.83	152	8	28	56	61	0.15	-6.89	-13.82	-13.72
U.S. IG Corporate Bonds	7.8	4.32	141	7	25	48	53	0.60	-6.15	-13.37	-10.76
European IG Corporate	5.0	2.20	170	10	41	75	86	0.75	-3.26	-8.06	-8.00
U.S. High Yield Bonds	4.8	7.62	458	56	133	175	153	-1.21	-5.85	-10.41	-7.43
European High Yield Bonds	3.8	5.85	512	25	118	194	209	0.34	-4.32	-8.27	-6.74
U.S. Leveraged Loans	0.3	8.06	545	43	96	94	95	-1.63	-2.03	-2.13	0.48
European Leveraged Loans	0.3	4.02	547	40	76	132	130	-1.05	-1.81	-2.36	0.07
EM Hard Currency Sovs.	7.0	7.71	475	30	75	106	139	-0.43	-7.37	-16.65	-16.15
EM Corporates	4.6	6.45	357	29	26	45	62	-0.41	-3.26	-11.79	-10.98
EM Currencies	---	6.68	---	72	212	235	417	-0.96	-4.42	-9.70	-12.02
EM Local Rates	4.9	7.04	7	0	1	1	2	-0.45	-3.41	-11.26	-13.45
CMBS	4.9	3.75	94	5	9	26	34	0.66	-2.39	-7.85	-7.91
ABS	2.3	3.22	64	-2	7	26	35	0.34	-0.41	-3.28	-3.69
CLOs	---	1.55	155	12	25	47	52	-0.62	-1.07	-1.63	-1.71
Municipal Bonds	6.0	3.39	---	7	79	228	233	-0.72	-4.18	-10.15	-9.24

Equity/Volatility	Level	Total Return (%) WTD	QTD	YTD	Prior Yr
S&P 500 Index	8477	-2.4	-11.0	-15.1	-0.8
DAX	13890	2.6	-2.7	-11.7	-7.7
Stoxx 600	235	0.9	-3.4	-9.0	1.9
Nikkei 225	26547	-2.1	-5.0	-7.3	-1.8
Shanghai Comp.	3074	2.8	-5.1	-15.2	-8.1
MSCI ACWI	326	-2.2	-11.3	-16.1	-7.2
FTSE 100	7441	0.5	-0.9	1.9	10.4
MOVE Index	115	-5.6	7.2	48.7	102.5
VIX Index	29	-4.4	40.4	67.7	24.8

FX/Commodities	Spot	% Change WTD	QTD	YTD	Prior Year
EUR/USD	1.0	-1.3	-5.9	-8.4	-13.8
USD/JPY	129.2	-1.0	6.2	12.3	18.0
GBP/USD	1.2	-0.7	-6.7	-9.4	-12.7
EUR/CHF	1.0	0.1	2.2	0.6	-4.7
USD/CHF	1.0	1.2	8.5	9.7	10.5
USD (DXY)	104.6	0.9	6.4	9.3	15.2
Oil	77.0	0.7	10.2	43.5	73.1
Gold	1811.8	-3.8	-6.5	-1.0	-0.8

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures and full index names. All investments involve risk, including possible loss of capital.

Sources: Bloomberg except EMD (J.P. Morgan), HY (ICE BofAML), Bank Loans (Credit Suisse), and CLOs (Palmer Square). European returns are unhedged in euros unless otherwise indicated. An investment cannot be made directly in an index

NOTICE: IMPORTANT INFORMATION

Source(s) of data (unless otherwise noted): PGIM Fixed Income as of May 2022

PGIM Fixed Income operates primarily through PGIM, Inc., a registered investment adviser under the U.S. Investment Advisers Act of 1940, as amended, and a Prudential Financial, Inc. ("PFI") company. Registration as a registered investment adviser does not imply a certain level or skill or training. PGIM Fixed Income is headquartered in Newark, New Jersey and also includes the following businesses globally: (i) the public fixed income unit within PGIM Limited, located in London; (ii) PGIM Netherlands B.V., located in Amsterdam; (iii) PGIM Japan Co., Ltd. ("PGIM Japan"), located in Tokyo; (iv) the public fixed income unit within PGIM (Hong Kong) Ltd. located in Hong Kong; and (v) the public fixed income unit within PGIM (Singapore) Pte. Ltd., located in Singapore ("PGIM Singapore"). PFI of the United States is not affiliated in any manner with Prudential plc, incorporated in the United Kingdom or with Prudential Assurance Company, a subsidiary of M&G plc, incorporated in the United Kingdom. Prudential, PGIM, their respective logos, and the Rock symbol are service marks of PFI and its related entities, registered in many jurisdictions worldwide.

These materials are for informational or educational purposes only. The information is not intended as investment advice and is not a recommendation about managing or investing assets. In providing these materials, PGIM is not acting as your fiduciary. Clients seeking information regarding their particular investment needs should contact their financial professional. These materials represent the views and opinions of the author(s) regarding the economic conditions, asset classes, securities, issuers or financial instruments referenced herein. Distribution of this information to any person other than the person to whom it was originally delivered and to such person's advisers is unauthorized, and any reproduction of these materials, in whole or in part, or the divulgence of any of the contents hereof, without prior consent of PGIM Fixed Income is prohibited. Certain information contained herein has been obtained from sources that PGIM Fixed Income believes to be reliable as of the date presented; however, PGIM Fixed Income cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed. The information contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. PGIM Fixed Income has no obligation to update any or all of such information; nor do we make any express or implied warranties or representations as to the completeness or accuracy or accept responsibility for errors. **All investments involve risk, including the possible loss of capital. These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security or other financial instrument or any investment management services and should not be used as the basis for any investment decision. No risk management technique can guarantee the mitigation or elimination of risk in any market environment. Past performance is not a guarantee or a reliable indicator of future results and an investment could lose value. No liability whatsoever is accepted for any loss (whether direct, indirect, or consequential) that may arise from any use of the information contained in or derived from this report. PGIM Fixed Income and its affiliates may make investment decisions that are inconsistent with the recommendations or views expressed herein, including for proprietary accounts of PGIM Fixed Income or its affiliates.**

The opinions and recommendations herein do not take into account individual client circumstances, objectives, or needs and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients or prospects. No determination has been made regarding the suitability of any securities, financial instruments or strategies for particular clients or prospects. For any securities or financial instruments mentioned herein, the recipient(s) of this report must make its own independent decisions.

Conflicts of Interest: PGIM Fixed Income and its affiliates may have investment advisory or other business relationships with the issuers of securities referenced herein. PGIM Fixed Income and its affiliates, officers, directors and employees may from time to time have long or short positions in and buy or sell securities or financial instruments referenced herein. PGIM Fixed Income and its affiliates may develop and publish research that is independent of, and different than, the recommendations contained herein. PGIM Fixed Income's personnel other than the author(s), such as sales, marketing and trading personnel, may provide oral or written market commentary or ideas to PGIM Fixed Income's clients or prospects or proprietary investment ideas that differ from the views expressed herein. Additional information regarding actual and potential conflicts of interest is available in Part 2A of PGIM Fixed Income's Form ADV.

In the **United Kingdom**, information is issued by PGIM Limited with registered office: Grand Buildings, 1-3 Strand, Trafalgar Square, London, WC2N 5HR. PGIM Limited is authorised and regulated by the Financial Conduct Authority ("FCA") of the United Kingdom (Firm Reference Number 193418). In the **European Economic Area** ("EEA"), information is issued by PGIM Netherlands B.V., an entity authorised by the Autoriteit Financiële Markten ("AFM") in the Netherlands and operating on the basis of a European passport. In certain EEA countries, information is, where permitted, presented by PGIM Limited in reliance of provisions, exemptions or licenses available to PGIM Limited under temporary permission arrangements following the exit of the United Kingdom from the European Union. These materials are issued by PGIM Limited and/or PGIM Netherlands B.V. to persons who are professional clients as defined under the rules of the FCA and/or to persons who are professional clients as defined in the relevant local implementation of Directive 2014/65/EU (MiFID II). In certain countries in **Asia-Pacific**, information is presented by PGIM (Singapore) Pte. Ltd., a Singapore investment manager registered with and licensed by the Monetary Authority of Singapore. In **Japan**, information is presented by PGIM Japan Co. Ltd., registered investment adviser with the Japanese Financial Services Agency. In **South Korea**, information is presented by PGIM, Inc., which is licensed to provide discretionary investment management services directly to South Korean investors. In **Hong Kong**, information is provided by PGIM (Hong Kong) Limited, a regulated entity with the Securities & Futures Commission in Hong Kong to professional investors as defined in Section 1 of Part 1 of Schedule 1 (paragraph (a) to (i) of the Securities and Futures Ordinance (Cap.571). In **Australia**, this information is presented by PGIM (Australia) Pty Ltd ("PGIM Australia") for the general information of its "wholesale" customers (as defined in the Corporations Act 2001). PGIM Australia is a representative of PGIM Limited, which is exempt from the requirement to hold an Australian Financial Services License under the Australian Corporations Act 2001 in respect of financial services. PGIM Limited is exempt by virtue of its regulation by the FCA (Reg: 193418) under the laws of the United Kingdom and the application of ASIC Class Order 03/1099. The laws of the United Kingdom differ from Australian laws. In **South Africa**, PGIM, Inc. is an authorised financial services provider – FSP number 49012. In **Canada,** pursuant to the international adviser registration exemption in National Instrument 31-103, PGIM, Inc. is informing you that: (1) PGIM, Inc. is not registered in Canada and is advising you in reliance upon an exemption from the adviser registration requirement under National Instrument 31-103; (2) PGIM, Inc.'s jurisdiction of residence is New Jersey, U.S.A.; (3) there may be difficulty enforcing legal rights against PGIM, Inc. because it is resident outside of Canada and all or substantially all of its assets may be situated outside of Canada; and (4) the name and address of the agent for service of process of PGIM, Inc. in the applicable Provinces of Canada are as follows: in **Québec:** Borden Ladner Gervais LLP, 1000 de La Gauchetière Street West, Suite 900 Montréal, QC H3B 5H4; in **British Columbia:** Borden Ladner Gervais LLP, 1200 Waterfront Centre, 200 Burrard Street, Vancouver, BC V7X 1T2; in **Ontario:** Borden Ladner Gervais LLP, 22 Adelaide Street West, Suite 3400, Toronto, ON M5H 4E3; in **Nova Scotia:** Cox & Palmer, Q.C., 1100 Purdy's Wharf Tower One, 1959 Upper Water Street, P.O. Box 2380 - Stn Central RPO, Halifax, NS B3J 3E5; in **Alberta:** Borden Ladner Gervais LLP, 530 Third Avenue S.W., Calgary, AB T2P R3.

© 2022 PFI and its related entities.

U.S. Investment Grade Corporate Bonds: Bloomberg Barclays U.S. Corporate Bond Index: The Bloomberg Barclays U.S. Investment Grade Corporate Bond Index covers U.S.D-denominated, investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. It includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

European Investment Grade Corporate Bonds: Bloomberg Barclays European Corporate Bond Index (unhedged): The Bloomberg Barclays Euro-Aggregate: Corporates bond Index is a rules-based benchmark measuring investment grade, EUR denominated, fixed rate, and corporate only. Only bonds with a maturity of 1 year and above are eligible.

U.S. High Yield Bonds: ICE BofAML U.S. High Yield Index: The ICE BofAML U.S. High Yield Index covers US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, and at least one year remaining term to final maturity as of the rebalancing date.

European High Yield Bonds: ICE BofAML European Currency High Yield Index: This data represents the ICE BofAML Euro High Yield Index value, which tracks the performance of Euro denominated below investment grade corporate debt publicly issued in the euro domestic or eurobond markets. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P, and Fitch). Qualifying securities must have at least one year remaining term to maturity, a fixed coupon schedule, and a minimum amount outstanding of €100 M. ICE Data Indices, LLC, used with permission. ICE DATA INDICES, LLC IS LICENSING THE ICE DATA INDICES AND RELATED DATA "AS IS," MAKES NO WARRANTIES REGARDING SAME, DOES NOT GUARANTEE THE SUITABILITY, QUALITY, ACCURACY, TIMELINESS, AND/OR COMPLETENESS OF THE ICE DATA INDICES OR ANY DATA INCLUDED IN, RELATED TO, OR DERIVED THEREFROM, ASSUMES NO LIABILITY IN CONNECTION WITH THEIR USE, AND DOES NOT SPONSOR, ENDORSE, OR RECOMMEND PGIM FIXED INCOME OR ANY OF ITS PRODUCTS OR SERVICES.

U.S. Senior Secured Loans: Credit Suisse Leveraged Loan Index: The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, U.S. dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

European Senior Secured Loans: Credit Suisse Western European Leveraged Loan Index: All Denominations EUR hedged. The Index is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

Emerging Markets U.S.D Sovereign Debt: JP Morgan Emerging Markets Bond Index Global Diversified: The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for U.S.D-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. To be deemed an emerging market by the EMBI Global Diversified Index, a country must be rated Baa1/BBB+ or below by Moody's/S&P rating agencies. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval. Copyright 2021, J.P. Morgan Chase & Co. All rights reserved.

Emerging Markets Local Debt (unhedged): JPMorgan Government Bond Index-Emerging Markets Global Diversified Index: The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments.

Emerging Markets Corporate Bonds: JP Morgan Corporate Emerging Markets Bond Index Broad Diversified: The CEMBI tracks total returns of U.S. dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries.

Emerging Markets Currencies: JP Morgan Emerging Local Markets Index Plus: The JP Morgan Emerging Local Markets Index Plus (JPM ELMI+) tracks total returns for local currency–denominated money market instruments.

Municipal Bonds: Bloomberg Barclays Municipal Bond Indices: The index covers the U.S.D-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment grade (Baa3/BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch.

U.S. Treasury Bonds: Bloomberg Barclays U.S. Treasury Bond Index: The Bloomberg Barclays U.S. Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index.

Mortgage Backed Securities: Bloomberg Barclays U.S. MBS - Agency Fixed Rate Index: The Bloomberg Barclays U.S. Mortgage Backed Securities (MBS) Index tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage.

Commercial Mortgage-Backed Securities: Bloomberg Barclays CMBS: ERISA Eligible Index: The index measures the performance of investment-grade commercial mortgage-backed securities, which are classes of securities that represent interests in pools of commercial mortgages. The index includes only CMBS that are Employee Retirement Income Security Act of 1974, which will deem ERISA eligible the certificates with the first priority of principal repayment, as long as certain conditions are met, including the requirement that the certificates be rated in one of the three highest rating categories by Fitch, Inc., Moody's Investors Services or Standard & Poor's.

Palmer Square AAA CLO DM Index represents the discount margin of CLO AAA rated tranches in the Palmer Square CLO Senior Index, which is designed to reflect the investable universe of U.S CLO senior original rated AAA and AA debt issued after Jan 1, 2011.

Global Aggregate Bond Index is a measure of global investment grade debt from twenty four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

U.S. Aggregate Bond Index: Bloomberg Barclays U.S. Aggregate Bond Index: The Bloomberg Barclays U.S. Aggregate Index covers the U.S.D-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities and includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS, and CMBS sectors. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

Euro Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, euro-denominated, fixed rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on currency denomination of a bond and not country of risk of the issuer.

Japanese Aggregate Bond Index The Japanese Aggregate Index contains fixed-rate investment-grade securities denominated in Japanese yen and registered as domestic bonds. The index is composed primarily of local currency sovereign debt but also includes government-related, corporate, and securitized bonds.

The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over U.S.D 9.9 trillion indexed or benchmarked to the index, with indexed assets comprising approximately U.S.D 3.4 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

The DAX Index is a total return index of 30 selected German blue chip stocks traded on the Frankfurt Stock Exchange. The equities use free float shares in the index calculation. The DAX has a base value of 1,000 as of December 31, 1987. As of June 18, 1999 only XETRA equity prices are used to calculate all DAX indices.

The STOXX 600 Index is derived from the STOXX Europe Total Market Index (TMI) and is a subset of the STOXX Global 1800 Index. With a fixed number of 600 components, the STOXX Europe 600 Index represents large, mid and small capitalization companies across 17 countries of the European region.

The Nikkei 225 Index is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange. The Nikkei Stock Average was first published on May 16, 1949.

Shanghai Composite Index is a capitalization-weighted index. The index tracks the daily price performance of all A-shares and B-shares listed on the Shanghai Stock Exchange. The index was developed on December 19, 1990.

MSCI ACWI is a free-float weighted equity index. It was developed with a base value of 100 as of December 31 1987. MXWD includes both emerging and developed world markets.

FTSE 100 is a capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange. The equities use an investibility weighting in the index calculation. The index was developed with a base level of 1000 as of December 30, 1983.

MOVE Index is a yield curve weighted index of the normalized implied volatility on 1-month Treasury options. It is the weighted average of volatilities on the CT2, CT5, CT10, and CT30. (weighted average of 1m2y, 1m5y, 1m10y and 1m30y Treasury implied vols with weights 0.2/0.2/0.4/0.2, respectively).

VIX Index is a financial benchmark designed to be an up-to-the-minute market estimate of the expected volatility of the S&P 500® Index, and is calculated by using the midpoint of real-time S&P 500 Index (SPX) option bid/ask quotes.

Bloomberg Commodity Index Bloomberg Commodity Index (BCOM) is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weight-caps are applied at the commodity, sector and group level for diversification. Roll period typically occurs from 6th-10th business day based on the roll schedule.

The U.S. Dollar Index indicates the general international value of the USD. The USDX does this by averaging the exchange rates between the USD and major world currencies. The ICE US computes this by using the rates supplied by some 500 banks.

2022-3353