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Are Hedge Funds a Hedge for Increasing Government Debt Issuance?

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Abstract

This paper studies the rapid increase since 2019 of Government of Canada (GoC) debt issuance alongside greater hedge fund participation at GoC bond auctions. We find a systematic relationship between GoC debt stock and hedge fund bidding shares at auction. We attribute this to hedge funds' business models, which are based on volume and leverage. We also use bid-level auction data and find that hedge funds are more willing than other investor types to buy bonds at lower auction yields (higher auction prices). These two results i) help explain why GoC auction performance has remained steady despite greater issuance and ii) affirm the importance of hedge funds in supporting Canada's cost-effective debt distribution in recent years. In addition, we conduct a counterfactual analysis of the exit of hedge funds from auction, which further affirms the importance of hedge funds to GoC auction performance. However, the concentration of hedge funds represents a potential vulnerability because hedge funds have a greater flight risk relative to domestic real money investors and thus contribute to a potentially less stable investor base.

Topics: Debt management; Financial markets; Financial institutions; Financial stability
JEL codes: D44, G, G12, G2, G23, H63

Résumé

La présente étude s'intéresse à l'augmentation rapide des émissions d'obligations du gouvernement du Canada depuis 2019 ainsi qu'à la participation accrue des fonds de couverture aux adjudications visant ces titres. Nous constatons qu'il existe une relation systématique entre l'encours des obligations du gouvernement du Canada et la proportion des soumissions venant des fonds de couverture aux adjudications. Nous attribuons ce phénomène aux modèles d'affaires de ces fonds, qui sont basés sur le volume et l'effet de levier. Nous utilisons également des données des soumissions aux adjudications et constatons que les fonds de couverture sont plus disposés que d'autres types d'investisseurs à acheter des obligations à des rendements plus faibles à l'adjudication (prix d'adjudication plus élevés). Ces deux constats : i) contribuent à expliquer pourquoi les résultats des adjudications du gouvernement du Canada sont restés stables malgré l'augmentation des émissions; et ii) confirment l'importance des fonds de couverture dans la distribution économique des titres de dette du Canada au cours des dernières années. De plus, nous effectuons une analyse contrefactuelle de la fin de la participation des fonds de couverture aux adjudications, qui vient encore confirmer l'importance de ces fonds dans le succès des adjudications du gouvernement du Canada. Toutefois, la concentration des fonds de couverture représente une vulnérabilité potentielle, car ceux-ci sont plus à risque de cesser leur participation aux adjudications que les autres investisseurs institutionnels nationaux et contribuent donc à rendre le bassin d'investisseurs potentiellement moins stable.

Sujets : Gestion de la dette; Institutions financières; Marchés financiers; Stabilité financière
Codes JEL : D44, G, G12, G2, G23, H63

Introduction

In the past five years, issuance of Government of Canada (GoC) nominal bonds[1] through auction nearly doubled, going from $122 billion in fiscal year (FY) 2019–20 to $237 billion in FY 2024–25 (Bank of Canada 2025a). This corresponds with an increase in the total bond stock from $597 billion at the end of FY 2019–20 to $1,163 billion at the end of FY 2024–25 (Bank of Canada 2025b). This growth has occurred while the base of dealers has remained mostly static and while capital costs have increased, both globally and domestically.[2] Despite this, GoC bond auctions have continued to perform well by the standard metrics of coverage and average yield.

In this paper, we show that this performance can be explained by the equally healthy increase in the participation of hedge funds in auctions starting in 2020, to the point where they now represent a significant investor class (the largest class behind dealers). We find that hedge funds have been responsive to the increased dollar amount of GoC nominal bond issuance. Using bid-level nominal bond auction data, we also show that hedge funds are more willing than other investor types to buy bonds at lower auction yields (higher auction prices). In other words, hedge fund bidding at auctions is relatively price-inelastic. These factors together could help explain why hedge funds' share of auction allocation has increased and why GoC auctions have continued to perform well despite a significant rise in issuance.

Finally, by showing hypothetically that an exit of hedge funds could have a considerable impact on auction performance, all else being equal, we demonstrate that larger GoC auctions are increasingly supported by hedge funds. We explain how hedge funds as an investor type could have a greater propensity for sudden exit, and how their rise can be linked to growing capacity challenges for dealer cash and repurchase agreement (repo) balance sheets that could exacerbate risks from increasing debt stock. Thus, while the increased participation of hedge funds is a welcome development that supports the cost-effective distribution of Canada's domestic debt, it also represents a vulnerability that is important to acknowledge.

This analysis focuses on core bond tenors: 2, 5, 10 and 30 years. It uses proprietary GoC bond auction data from 1999 to 2024 and identifies bidder business type (including

[1] Real return bonds are excluded from this analysis because their investor base is fundamentally different, their issuance amounts are relatively minimal, and they were discontinued in 2022.

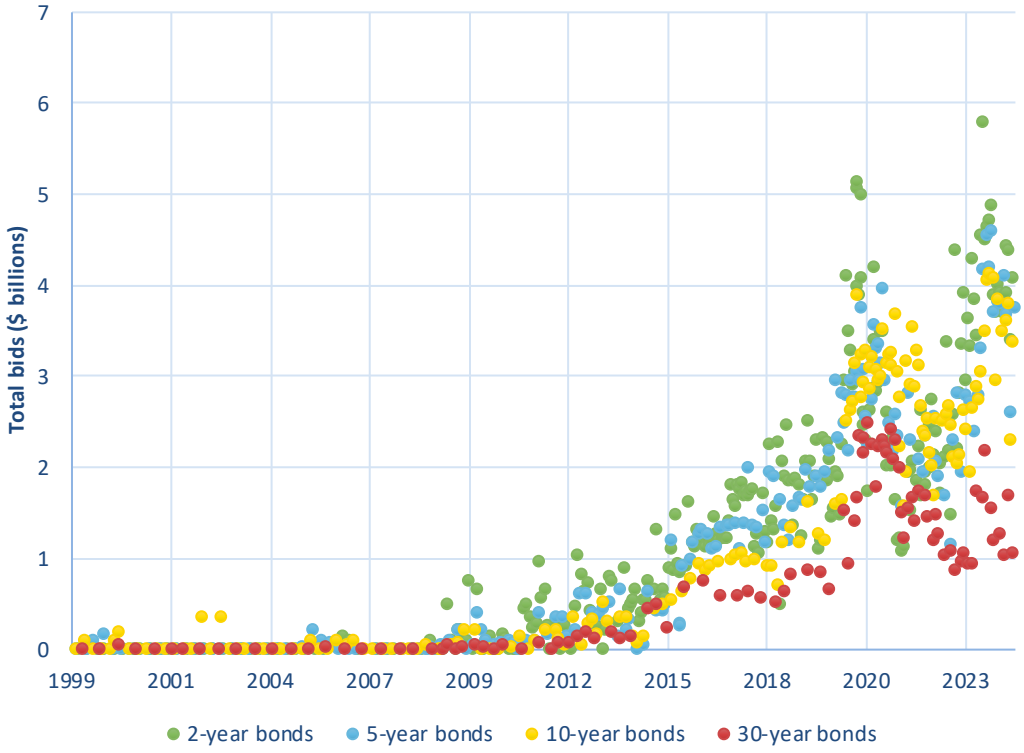
[2] See details on these trends in Bank of Canada, Summary of Comments—Fall 2024 Debt Management Strategy Consultations (December 16, 2024).

hedge funds) from an internal Bank of Canada list based on market intelligence about bidders' business models.

Hedge fund participation is increasing alongside Government of Canada bond issuance

Since FY 2019–20, annual GoC bond issuance has gone up considerably across all tenors: from $53 billion to $94 billion in 2-year bonds, $33 billion to $63 billion in 5-year bonds, $13 billion to $63 billion in 10-year bonds, and $4 billion to $17 billion in 30-year bonds (Bank of Canada 2025a).[3] **Chart 1** shows that total hedge fund bidding in each tenor has also increased considerably.

Chart 1: Hedge fund bidding volumes at Government of Canada bond auctions have grown since 2010—and substantially since 2020



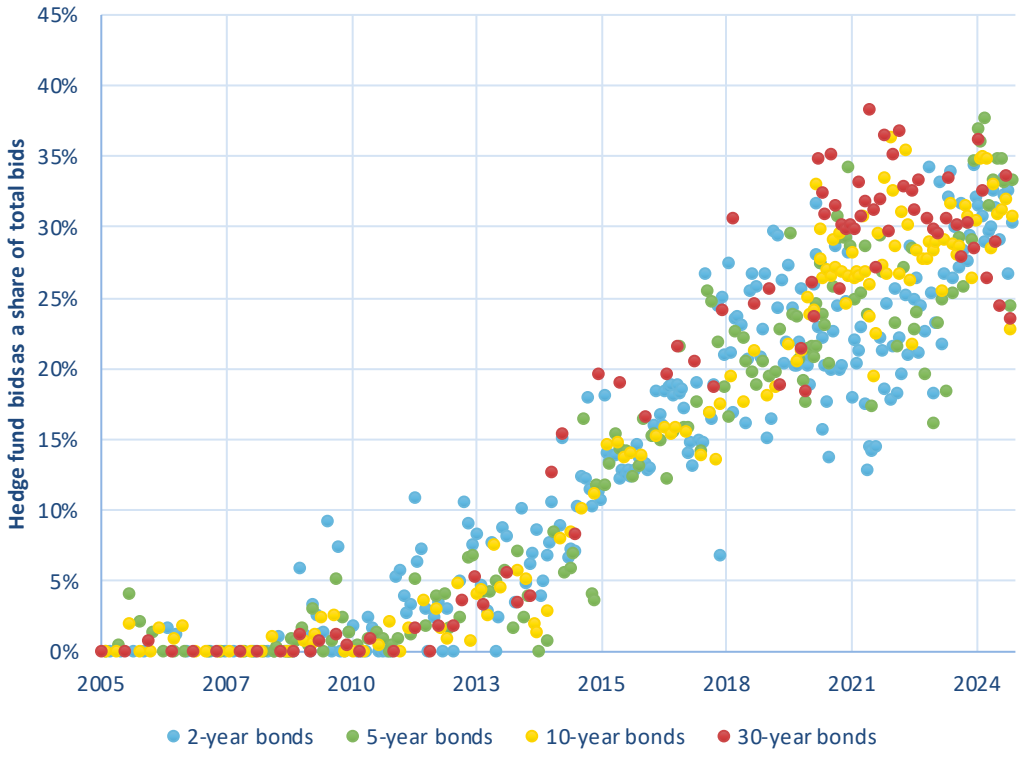
Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

[3] This does not include the 3-year tenor, which is a non-core tenor and was last issued in April 2023.

While not as dramatic, the growth of hedge fund bidding from 2010 to 2019 mirrored the moderate rise in debt issuance during that period.

This growth in hedge fund bidding in terms of both volume and as a share of total bids at auction was not matched by the other investor types,[4] whose share of bidding at auctions has either remained mostly unchanged or declined slightly. As a result, hedge fund bids as a share of total auction bids have also been increasing (**Chart 2**).[5] Note that the increase in hedge fund bidding itself may have affected the auction environment and hence the other investors' bidding behaviour.

Chart 2: Hedge fund bidding as a share of total bids at Government of Canada bond auctions has also grown



Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

[4] In this environment of growing debt, an important caveat when considering any level trends is that the bidding activity of primary dealers—the class of dealers that generally includes the larger ones—is influenced by minimum bidding requirements, which are scaled to issuance amounts.

[5] Share of bids at auction reflects the significance of an investor type relative to other investors. A different metric is bids relative to auction size, which instead illustrates the contribution of an investor type to the auctions. We examine that idea more closely through analysis of the auction coverage metric later in this paper.

Hedge funds have been responsive to higher Government of Canada bond issuance

The increased bidding by hedge funds but not other investors amid higher debt issuance can be explained by the hedge funds' inherent business model. Their approach is to (i) identify a perceived mispricing in the market and (ii) take a large position on that perceived mispricing—as seen in hedge funds' substantial use of leverage via repos.

Hedge funds often use relative value strategies, trading on the perceived mispricing between GoC bonds and either futures (cash-futures basis trade), CAD spread products or other sovereign bonds (cross-market trade), or swaps (asset swap trade) of a similar term. Also common are strategies based on macroeconomic views (e.g., position on level or shape of the yield curve) or bond pricing at time of auction.

In the relatively liquid and efficient GoC bond market, smaller mispricing opportunities can mean that hedge funds need to take larger positions to achieve their desired return. In the increasingly common cash-futures basis trade involving a long GoC bond and a short GoC futures contract, hedge funds use leverage to scale profits due to the small basis (Uthemann and Vala 2024).

A larger GoC debt stock from higher issuance volume enhances hedge funds' ability to take long positions in large sizes. This is because it increases available bonds to hold for those positions and also because it gives the hedge funds a larger base of assets to repo out to fund their positions. Also, having a larger known future supply event (i.e., auction)[6] for GoC bonds can facilitate larger short positions. This is because the increased supply allows hedge funds to source the required bonds more easily in the repo market. Also, greater GoC bond liquidity lowers the transaction costs from entering and exiting positions.

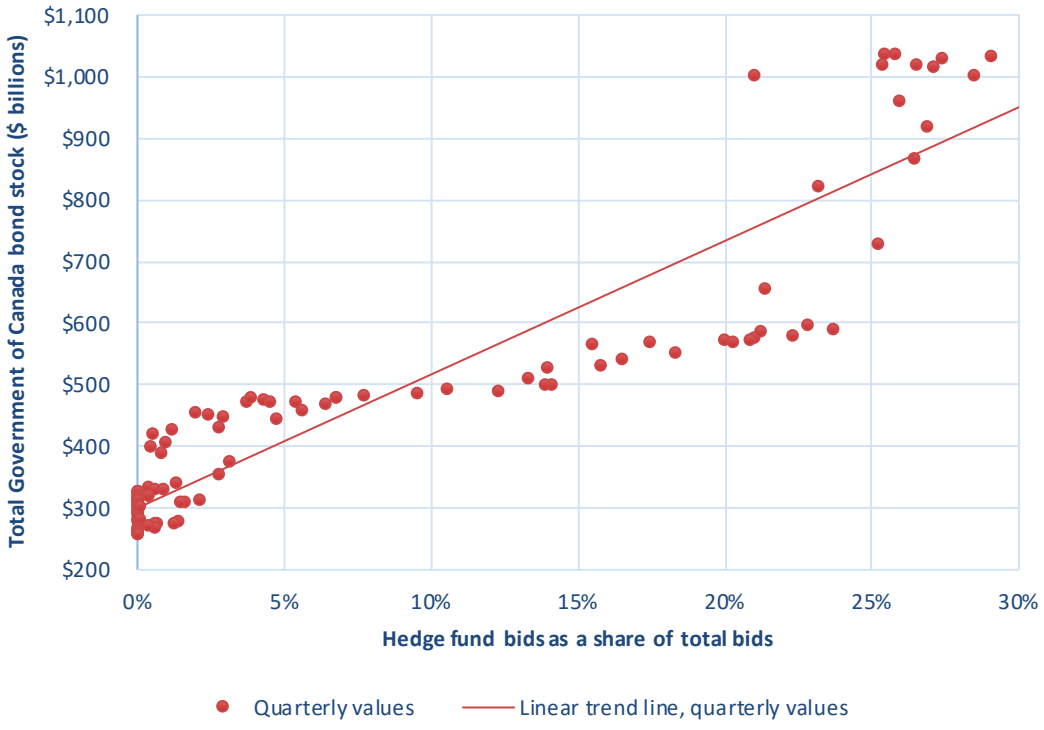
Accordingly, the recent rise in GoC bond issuance has coincided with increased hedge fund borrowing against GoC bonds in the repo market to fund their relative value strategies (Bank of Canada 2024). Also, in 2024, significantly leveraged long positions of hedge funds were evidenced by the persistent rise of CORRA (Canadian Overnight Repo Rate Average) several basis points above target. Yet in 2023, the reverse was seen with short positions (Plong and Maru 2024a). Similarly, in the United States, hedge funds have increasingly relied on leverage for profitable basis strategies within a growing US Treasury market (Hammack 2025).

[6] The GoC issuance timelines, like with most developed economies, are highly predictable. Exact dates for GoC bond auctions are announced prior to the start of each quarter, and the approximate number of auctions for each tenor and their size is publicly available in the Government of Canada's annual Debt Management Strategy that is part of the annual federal budget.

Regardless of a hedge fund's specific strategy, the primary market tends to be a cost-effective means to attain these GoC bond positions of large volume. Purchasing at auction avoids the price impact that comes from buying or selling a large volume of bonds all at once in the secondary market. In addition, there is often a small concession between auction yields and prevailing secondary yields. Also, some strategies (such as auction-based strategies) rely directly on significant primary market participation.

Chart 3 shows the strong positive relationship between hedge fund bids (as a share of total bids) and total GoC bond stock since 1999.

Chart 3: As debt stock rises, participation of hedge funds in bond auctions also increases



Sources: Department of Finance Canada, Statistics Canada and Bank of Canada calculations
Last observation: December 2024

Note that for other investor types, this same participation incentive from a larger debt stock is likely not as strong, mainly because they have less flexibility and greater difficulty taking on leverage (Sandhu and Vala 2023). Although pension funds have shown an increasing use of repos, real money investors overall are more limited by their

cash on hand and tend to use less leverage compared with hedge funds.[7] Hedge funds have the largest repo positions across asset managers, followed by pension funds (Aldridge, Sandhu and Tchamova 2024). And while dealers have ready access to repos and can position for directional views on rates and curves, they are restricted by the balance sheet constraints of internal risk limits and bank regulation.

Hedge funds have been the most price-inelastic investor type at Government of Canada auctions

During the period following 2010, and especially after 2019, hedge funds have not only increased their bidding amounts but also tended to bid at relatively competitive levels. This has resulted in substantial allocations at auction.[8]

Chang (2023) introduces a new methodology to estimate the slope of an effective demand curve for each auction, which involves aggregating across each bidder's estimated demand function at each GoC bond auction. We modify this methodology to find the demand function slopes for different investor types.

Our dataset contains the quantity-yield pairs for each bidder at each auction. For each instance of multiple pairs for a bidder, we can construct their demand function and use ordinary least squares regression to obtain a representative slope coefficient.[9] Then, by weighting the slope of each individual demand function by that bidder's maximum bid amount, we can estimate the overall demand function by investor type. This differentiation of investor class is meaningful: Fang, Hardy and Lewis (2022) and Eren, Schrimpf and Xia (2023) find that different sovereign debt investors have different demand for that debt.

Chart 4 shows that hedge funds have consistently had the lowest slope value among investor types. This indicates that since 2010, when they started being active, they have had low price sensitivity at auctions.

[7] Real money investors have also indicated they no longer see price opportunities at auctions. Instead, most of them buy GoC bonds in the secondary market (often the afternoon after auction). For example, foreign central banks own 12% to 21% of the GoC float (Aldridge, Sandhu and Tchamova 2024), despite their minimal participation in auctions.

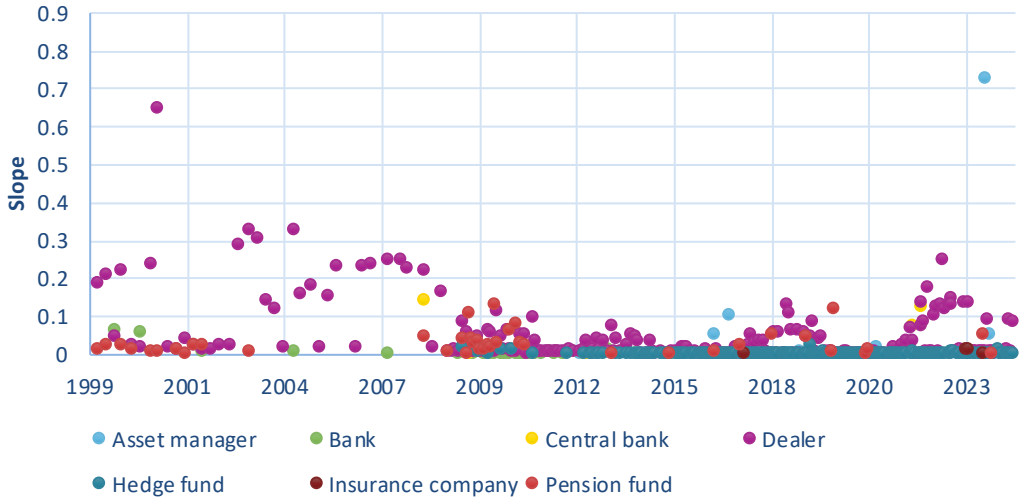
[8] Canada uses multiple-price auctions, where bids are allocated starting from the lowest/most competitive yield (highest price) until the stated volume is reached, with all bidders paying the yield they bid.

[9] Note that each bidder can place up to seven quantity-yield pairs (often referred to as bids) per auction.

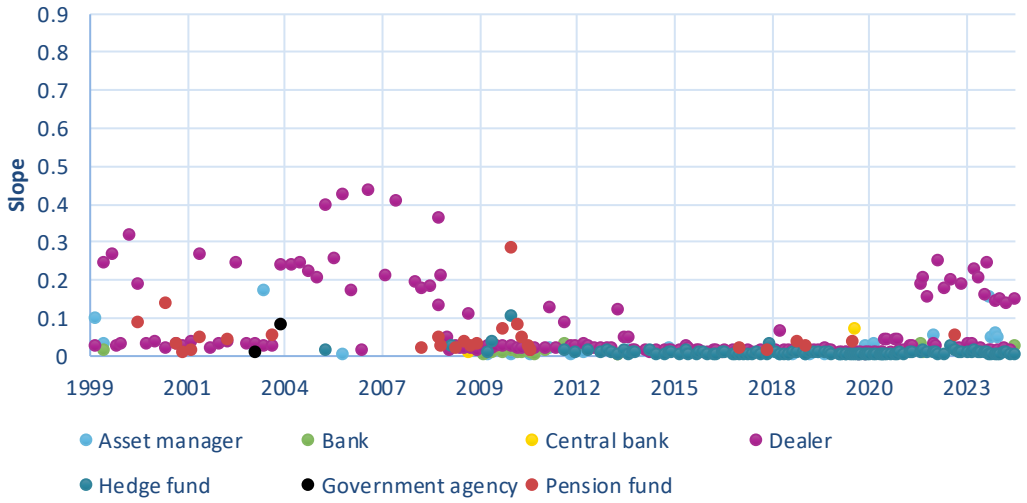
Chart 4: Price sensitivity at auction is consistently lower for hedge funds than for other investor types

Slope of demand function, by type of investor

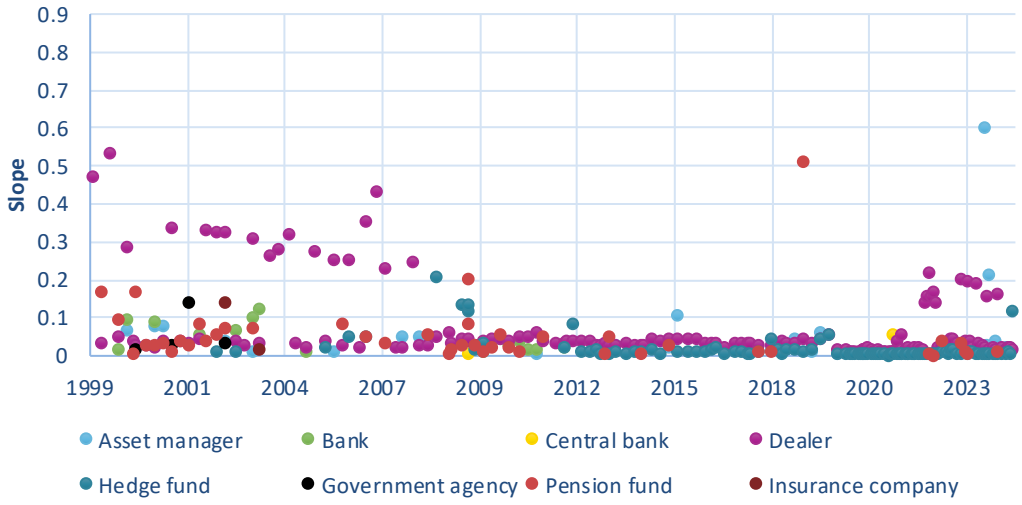
a. 2-year bonds



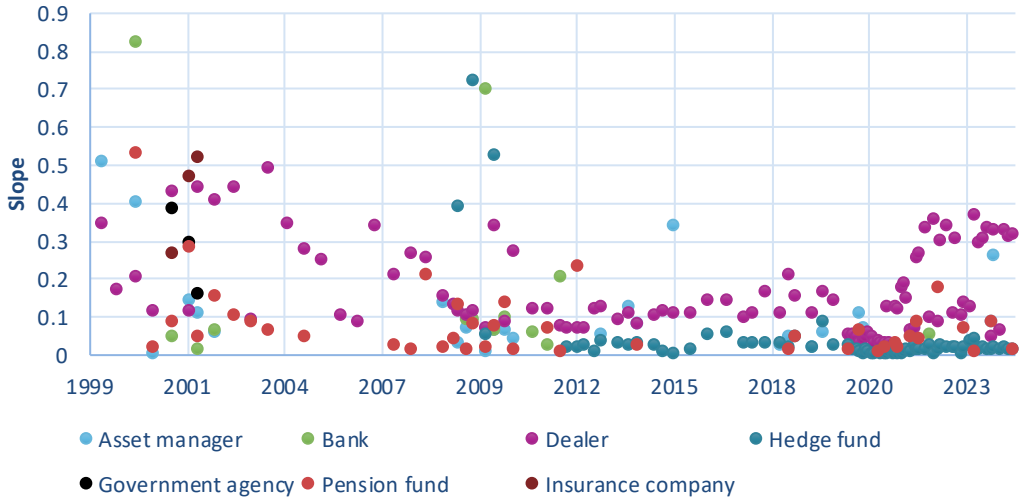
b. 5-year bonds



c. 10-year bonds



d. 30-year bonds



Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

This notably contrasts with the relatively higher price sensitivity of dealers, whose higher cost of capital could lead to tighter profit margins. An important factor behind the lower price sensitivity of hedge funds could be their volume-based business models. Their priority is to take large-volume positions to maximize their profits from perceived mispricing, rather than to compete over a few basis points on a particular transaction. Allen et al. (2024) show that at GoC auctions, customers—most of which are hedge funds—are willing to pay more for bonds than dealers are. This is because hedge funds can execute more profitable strategies since they face fewer regulations.

Evidence of this principle can also be seen in the repo market. Hedge funds tend to fund their positions at more expensive levels at the high end of the repo rate range (Plong and Maru 2024a). This is because they are willing to pay more to ensure access to repo financing through dealer balance sheets. Feedback from hedge funds confirms that many are wary of negotiating too aggressively for better funding rates on repo borrowing from dealers. This is because they want to preserve their ability to significantly increase repo balance sheet allocation from the dealers if they need to (for large positions).

This positive relationship of supply and hedge fund bidding, along with the lower slope of their demand function, can further explain a key puzzle introduced in Chang (2023). That paper hypothesizes that a positive relationship exists between aggregate demand slope and size of issuance due to dealers' balance sheet costs of taking on more debt. However, Chang finds instead that this relationship does not exist (or might be negative). Chang suggests that since Canada is a high-quality issuer, more issuance would lead to more liquidity and thus more investors.

Here, we show that, in 2020-24, not only did more issuance lead to more participation from one particular class of investor (hedge funds), but that particular investor class is relatively price-inelastic in its bidding at auctions. Hence, the greater weighting of those lower-slope investors in the aggregate demand function would naturally counteract or supersede any small increase in slope for other investor types or overall (e.g., from dealers passing along their higher balance sheet costs).[10]

Note that the price inelasticity of hedge funds discussed here refers to their demand function at individual auctions (at fixed points). This contrasts with an alternate definition of price elasticity as the change in demand in response to changes in price over time. Under this alternate definition, the elasticity of hedge fund demand is more ambiguous. Feedback from large institutional hedge funds indicates that they mainly use relative value trades (e.g., cash-futures basis, asset swaps, asset swap curves, cross-market, auction-based strategies) that are agnostic to the outright level of rates but predicated on a spread reverting back to its mean. However, Fang, Hardy and Lewis (2022) find that sovereign debt holdings of non-bank investors[11] in advanced economies increase alongside higher total debt stock and lower price.

To reconcile these two meanings of elasticity, we explain that although hedge funds are willing to pay more at auction to acquire large volumes in an environment of higher debt

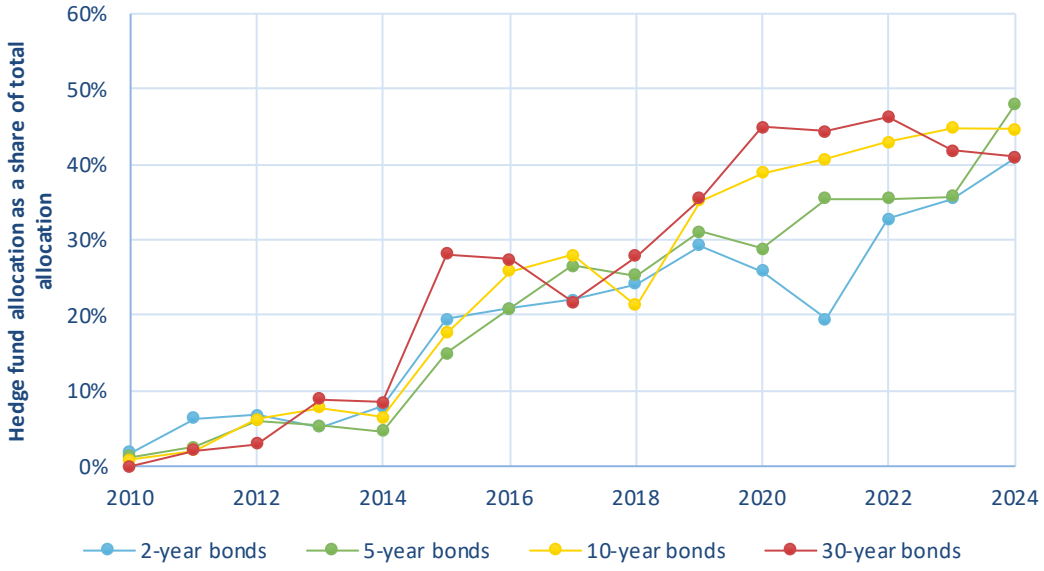
[10] Note that only asset managers saw a large increase in slope during that period. The slope of hedge funds remained about the same.

[11] Given that non-bank investors for GoC debt consist mostly of hedge funds, we consider this category as representative of hedge funds with the addition of asset managers, which are shown to have a much higher elasticity of demand at auction.

stock, their willingness to do so is less clear when the debt stock is lower (and when prices tend to be higher, on balance).

The combination of hedge funds' higher bidding activity and their relative price inelasticity at auction has led to an increasing share of GoC bonds being allocated to hedge funds at auction (**Chart 5**). Consistent with this price inelasticity, hedge funds' allocation shares at auction are generally higher than their bidding shares.

Chart 5: Auction allocation to hedge funds has increased from 0% to over 40% in the past 15 years



Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

The contribution of hedge funds to auction performance is important—but comes with risks

The greater participation of hedge funds at auctions in 2020–24 has mitigated a potential decline in auction performance during this period of increasing debt issuance. Maintaining strong-performing auctions is important because the government depends on the predictable presence of buyers on a near-weekly basis[12] to meet its objectives of raising low-cost funding to meet its financial requirements and of maintaining a well-functioning market for its securities.

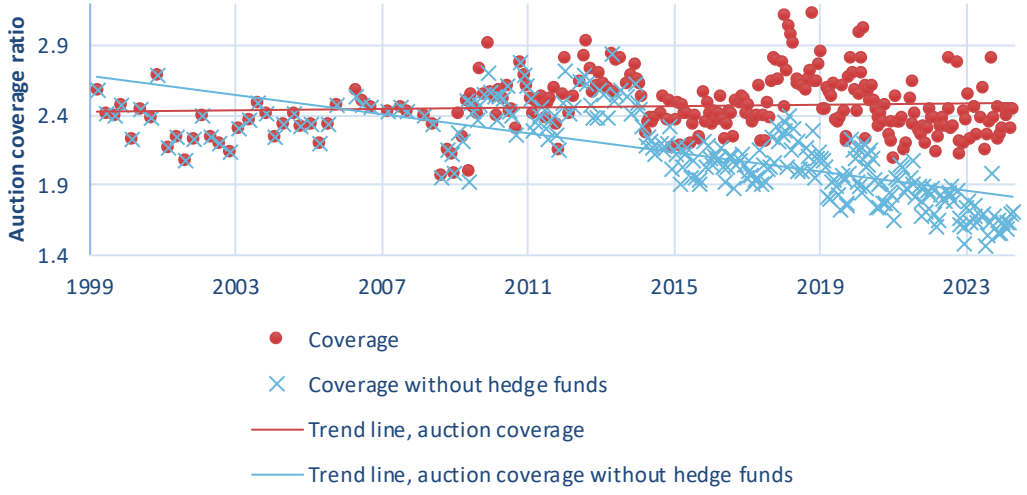
[12] In total, 49 bond auctions were held in FY 2024–25.

To assess the contribution of hedge funds to this performance, we estimate key auction metrics in a counterfactual scenario in which hedge funds exit and the bidding behaviour of others does not change. These counterfactuals cannot capture the entire impact of an exit of hedge funds, since the changed auction environment could affect the incentive structure and hence the bidding behaviour of other investors. Also, the order-taking process at auctions is dynamic and involves a complex set of interactions between hedge funds, dealers and other market participants. Removing hedge funds from this process would certainly influence the bids from others over time. This makes the true contribution of hedge funds to auction performance difficult—if not impossible—to discern. Still, these counterfactual metrics provide a simple shorthand for how this contribution has broadly changed over time.

One key metric of auction performance is the auction coverage ratio, which is defined as the total bids (in dollar amount) relative to the auction size, net of Bank of Canada purchases.[13] Across all tenors shown in **Chart 6**, auction coverage has been relatively stable at well above 2.0 throughout history. But in our counterfactual case—where we exclude hedge fund bids and other bidders' behaviour does not change—auction coverage drops steadily beginning in 2010 (when hedge funds first became active) and then drops more sharply from 2020 onward, with the longer tenors falling below 1.5.

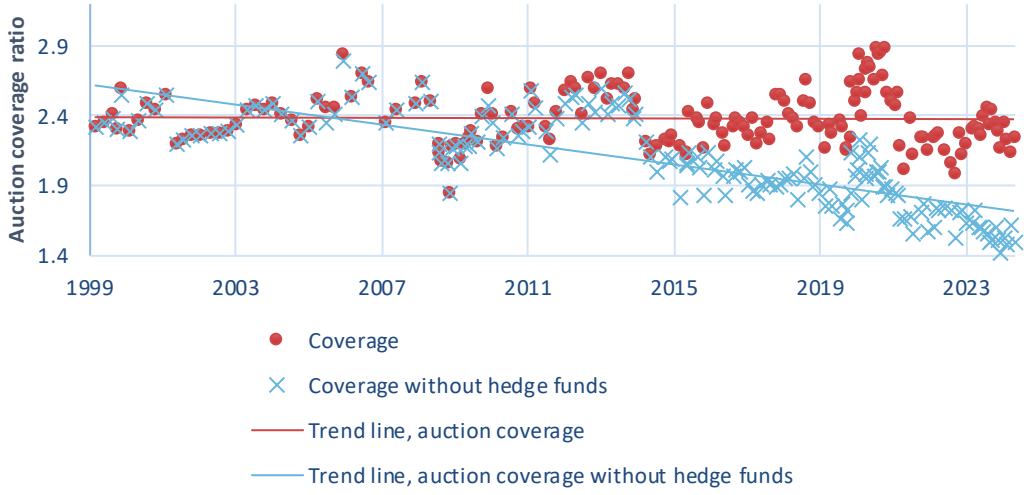
Chart 6: In a counterfactual scenario that excludes hedge funds at auctions, coverage worsens significantly—especially after 2020

a. 2-year bonds

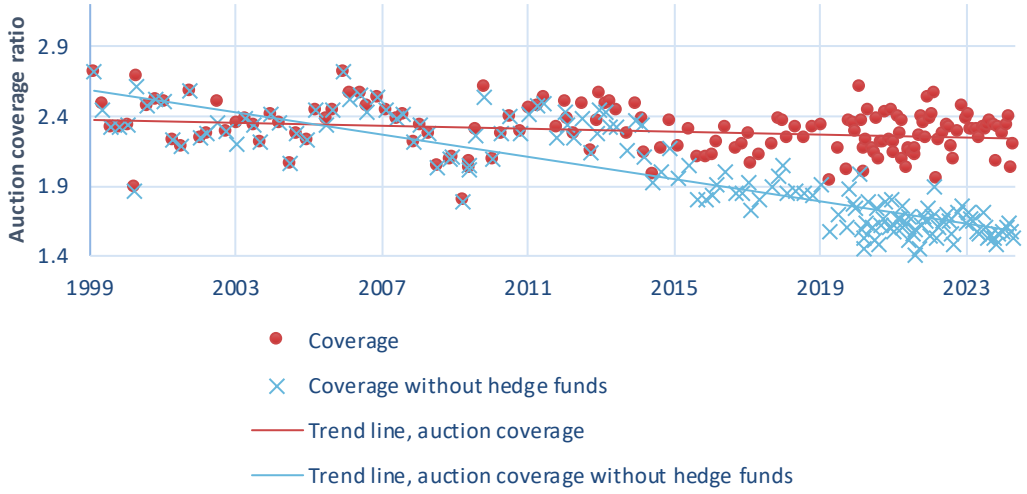


[13] This is consistent with the Bank of Canada's official auction coverage statistics for GoC bond auctions.

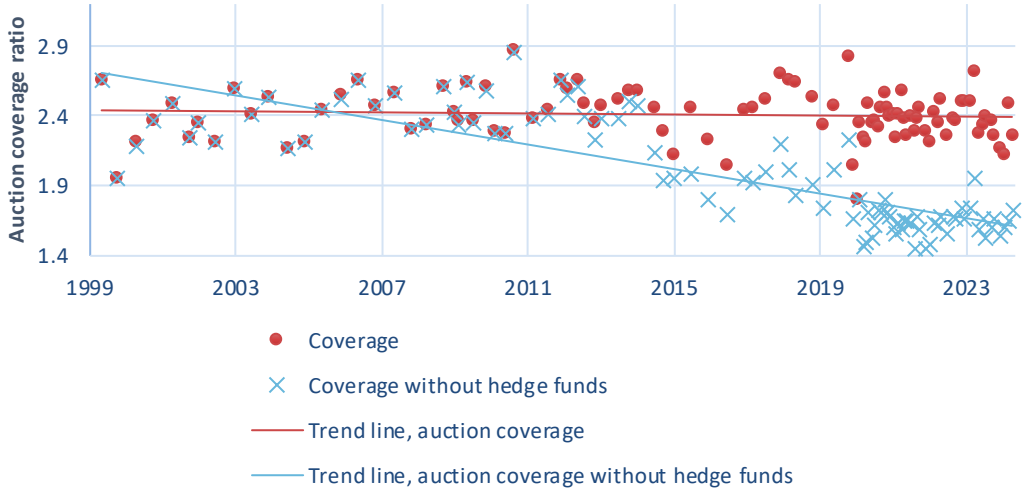
b. 5-year bonds



c. 10-year bonds



d. 30-year bonds



Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

While an uncovered auction may seem remote, even with our counterfactual, it is important to note that Canada imposes minimum bidding requirements for primary dealers—the class of dealers that generally includes the larger ones. This makes an uncovered auction, by definition, nearly impossible.[14] Thus, *low* coverage is more relevant because it could reflect a reduced overall capacity for the market to absorb the rising GoC debt. Several factors could contribute to this, including:

- debt growth outpacing gross domestic product growth
- dealer intermediation being more constrained due to the increasing cost of capital caused by regulatory reforms following the 2008–09 global financial crisis
- inefficiencies in domestic clearing and settlement
- growth in higher-yielding Canadian-dollar substitutes, such as provincial and other public sector bonds, Canada Mortgage Bonds and investment-grade corporate bonds

Studies show that this is not a uniquely Canadian phenomenon. Aquilina et al. (2024) find that increasing pressure to absorb debt issuance has been a factor in negative swap spreads in the United States, Japan and the euro area. In addition, these negative spreads are not arbitraged away because they are compensation for the costs that dealers incur from using their balance sheets for intermediation. This could incentivize less-regulated hedge funds to step in as liquidity providers by growing their balance

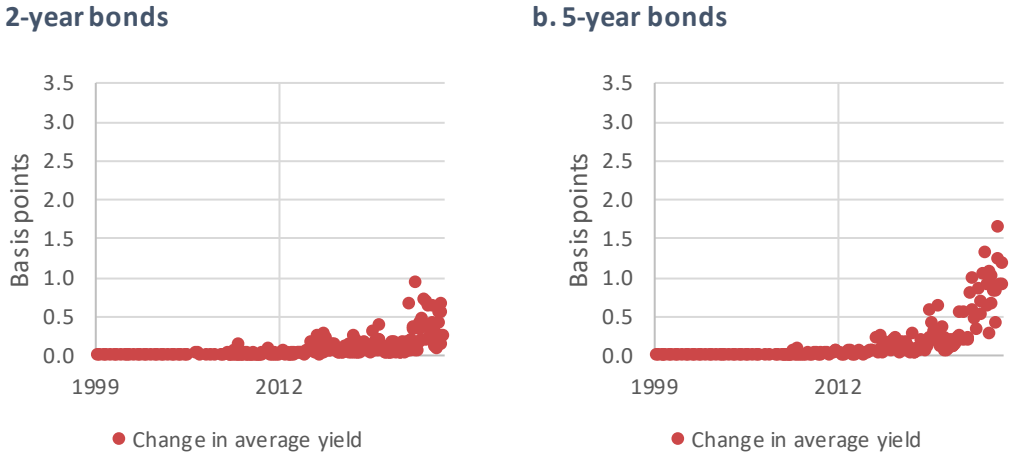
[14] See Bank of Canada and Department of Finance Canada, *Standard Terms for Auctions of Government of Canada Securities* (April 2024).

sheets via repo. Brolley and Cimon (2025) study how hedge funds pushing bank-owned dealers out of market-making could lead to unreliable liquidity in times of stress. Fleming, Nguyen and Rosenberg (2024) show how this trend could further reduce profits from the dealer business in the US Treasury market. Branger, Muck and Putz (2024) document a phenomenon of hedge funds in Germany acquiring large auction positions and becoming quasi market makers starting in 2015, possibly in response to stricter bank regulations following the global financial crisis.

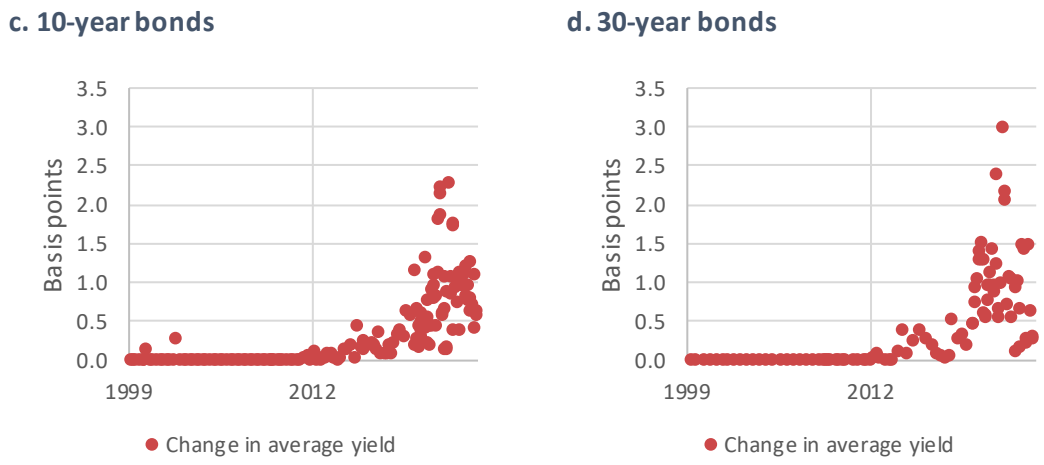
Another auction metric is the average yield of the auction, which measures how much an auction will cost the government, with a higher yield corresponding to a lower price at which the bonds are sold at auction. Cut-off yield and tail are possible alternatives.[15]

Across all tenors shown in **Chart 7**, we see that the increase in average yield after a hypothetical exit of hedge funds would go up steadily after 2010 and more dramatically in 2020–24, with the effect again greater at longer tenors. This aligns with the increasing hedge fund activity in those tenors, both through the 10-year cash-futures basis trade and through cross-market trades (in the 10- and 30-year tenors) involving GoC bonds versus sovereign bonds in other jurisdictions. This theoretical cost effect to the GoC is compounded by its greater overall debt being issued during this time.

Chart 7: In a counterfactual scenario that excludes hedge funds at auction, the average auction yield goes up substantially



[15] Cut-off yield is the highest-yield (lowest price) bid filled at the auction. Tail is the difference between the auction's average and cut-off yields.



Sources: Department of Finance Canada and Bank of Canada calculations
Last observation: December 2024

The relevance of these counterfactuals follows from Arslanalp and Tsuda's (2012) finding that foreign non-bank investors—mostly hedge funds in the case of GoC bonds—have a greater flight risk among investor types. This is why their increasing concentration in sovereign debt markets globally has contributed to riskier investor bases that compound the risks from higher general government debt. Canada's fundamental economic and institutional strength contrasts markedly with countries that have historically experienced debt issues (especially during the 2008–09 crisis period and afterward, until around 2012) and thus precludes a direct comparison of absolute debt risk levels. However, the greater flight risk of foreign non-bank investors does suggest that an investor base with a higher concentration of hedge funds still represents a vulnerability for Canada.

Sandhu and Vala (2023) find that while hedge fund trading can promote two-sided GoC markets in normal times, it amplified one-sided GoC selling during the stress period of the COVID-19 pandemic, which contributed to market illiquidity. Another example of this effect in a high-credit country was the March 2020 US Treasury sell-off. Banegas, Monin and Petrasek (2021) find that hedge funds unwinding their basis trades and reducing their derivatives positions contributed importantly to the US Treasury sell-off. Barth and Kahn (2021) also note that this unwinding was a consequence of market volatility and that Federal Reserve intervention prevented further market dysfunction.

For the GoC bond market, this flight risk is evident in a number of ways. Hedge funds globally have a high attrition rate (see, for example Garbaravicius and Dierick 2005). They also face refinancing risks on leverage or margin calls. Finally, most hedge funds are international: without organic commitment to the Canadian market, they could be more likely to pull back during a Canada-specific stress event. Andrews and Gadgil (2024)

find that in the United States, the incentive structure for hedge fund managers tends to lead to behaviour that amplifies volatility in times of stress.

The rising participation of hedge funds at GoC bond auctions and their entrance into the market-making space, while both net positives for distribution of debt and for market liquidity, could also place additional pressure on the total GoC fixed-income infrastructure. Namely, hedge funds' positioning, both long and short, in the bond market is ultimately financed through the repo market. The aggregate balance sheet for repo books across dealers is finite and driven by several factors (e.g., number of dealers, regulation, central clearing infrastructure). Such pressure points have been reflected in elevated CORRA levels (Plong and Maru 2024b). Therefore, this trend of increased hedge fund participation raises questions of capacity for the repo market. Stresses in the repo market—like those experienced in the United States in September 2019 because of a spike in the Secured Overnight Financing Rate—can lead to significant periods of volatility and illiquidity in the cash market. A strain in this repo capacity could also be another source of hedge fund flight risk.

For policy-makers, the key takeaway is that although the increased participation and competitive bidding of hedge funds at GoC bond auctions is a welcome development that has supported continued strong auction performance amid rising issuance, this trend comes with risks:

- It has partly masked the somewhat concerning trend of dealer and real money capacity not keeping pace with that issuance.
- It has created a vulnerability through increased pressure on the repo market, reducing capacity there. Any major loss in market capacity could compromise Canada's fundamental debt management objectives of raising stable and low-cost funding to meet its financial requirements and maintaining a well-functioning market for GoC securities.

Conclusion

A sovereign's ability to issue new debt reliably and cost-effectively is critical for sound fiscal management, financial stability and the country's economy. While the size of a government's debt stock is an important factor that impacts the effectiveness of its debt distribution, the composition of its investor base also plays a role. In Canada, hedge funds have taken an increasing role in absorbing new GoC bond issuance due their responsiveness to higher issuance and their auction price inelasticity in this environment. This has been beneficial for the Government of Canada, as this has allowed the performance of GoC bond auctions to remain consistently strong by traditional metrics amid higher debt issuance.

However, this effect masks the rising risks the government faces regarding potentially significant investor outflow, which we believe is more likely due to hedge funds' lack of natural anchor to the GoC bond market and their increased dependence on the repo market. With this paper, we hope to increase awareness of these risks and suggest that greater focus be placed on assessing the investor base for sovereign debt and differentiating the investor types.

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