



**GREEN
CLIMATE
FUND**

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GCF/B.27/18

4 November 2020

Initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF

Summary

As mandated by the Board, this document presents the initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF including FX hedging solutions that might help the Fund to reduce FX risk exposure and to secure higher predictability of the financial resources of the Fund.

The Secretariat reviewed the FX hedging options including natural hedging and FX derivatives hedging in the global market. With the guidance of the Budget Committee the Secretariat has prepared the analysis for Board consideration. During the process Risk management Committee also reviewed the document and provided its inputs to the Budget Committee and the Secretariat for considerations.

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I. Introduction

1.1 Context and scope

1. At its twenty fourth meeting (B.24), the Board, by decision B.24/04, requested the Budget Committee (BC) to consider the initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF, as requested pursuant to decision B.21/14, paragraph (j), and to present to the Board any recommended action for its consideration.

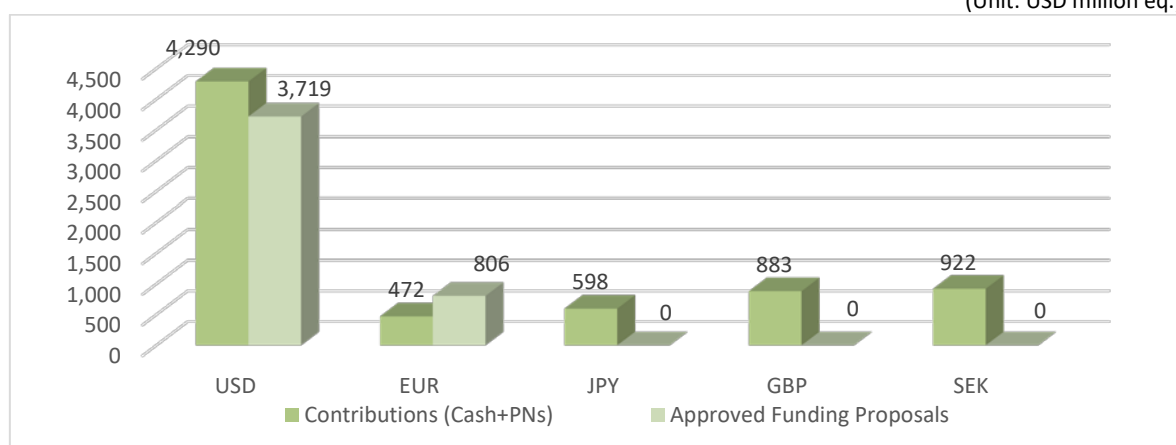
2. Pursuant to the Funding Risk Policy (Component VII of the GCF Risk management Framework (Decision B.19/04, paragraph (a) (iii) and annex VI), the First Level (Chief Financial Officer) “may decide to implement a hedging strategy for additional conservatism. Any such strategy will be developed collaboratively taking inputs from the Second Level (i.e. the Office of Risk Management and Compliance), should consider recommendations from the Risk Management Committee (RMC) and will need to be agreed with the SMT and, where appropriate, the Board”.

3. Due to constantly changing nature of foreign exchange (FX) rates, the USD equivalent value of contributions denominated in non-USD currencies will vary over time, resulting in increases or decreases in the USD equivalent value, to which the Fund is exposed. These variations may be substantial especially in periods of high FX rate variability.¹

4. Non-USD contributions can be made in cash or promissory notes (PNs) and the non-USD PNs that have not been encashed will be mainly exposed to FX conversion risk. The Figure 1: Deposited Contributions (Cash+PNs) and Approved Projects shows that the non-USD PNs can be primary targets of FX hedging to lower the volatility of the value of contributions at the initial phase of GCF’s FX management. As can be seen from the below figure, the Fund received its contributions in various currencies (e.g. USD, Euro, GBP, JPY, SEK etc.), and its projects have been approved in USD and EUR. At the end of the Q2 2020, USD accounts for 82.2% of the total approved projects that have not been disbursed, and EUR 17.8%.

Figure 1: Deposited Contributions (Cash+PNs) and Approved Projects²

(Unit: USD million eq.)



(Unit: USD million eq.)

¹ The reference currency exchange rates at the time of pledging of the contribution have been used to calculate the USD equivalent pledged amount of the GCF. As a result, in respect of the initial resource mobilization of the GCF, there has been a difference between the signed contributions (USD 8.2 billion) based on the reference FX rates at the time of pledging and the current USD amount (USD 7.1 billion) based on the present market FX rates.

² The graph and table have been created in accordance with the Risk Dashboard approved by the SMT and the Quarterly Trust Fund Report prepared by the Trustee as of the end of June 2020.



Contribution/Project Items	USD	EUR	JPY	GBP	SEK
Contributions (Cash+PNs)	4,290	472	598	883	922
Approved Funding Proposals	3,719	806	0	0	0

5. GCF prepares its accounts as per the International Financial Reporting Standard (IFRS). On an accounting basis, the GCF had FX accounting loss equivalent of USD 103.4 million for 2016 because the value of the non-USD currencies held in the GCF account had depreciated against USD, and had FX accounting gain amounting to USD 133.3 million for 2017 due to the appreciation of the non-USD currencies and FX accounting loss of USD 98.9 million in 2018 and gain of USD 21.6 million in 2019. The cumulative FX loss as at the end of 2018 stands at USD 47.4 million. As per the IFRS principles, the FX gain/loss on the promissory notes is calculated as the difference between the USD equivalent value of PN at the date of the deposit of the PN and the USD equivalent value of the PN as at the end of the year. The IFRS does not consider the IRM exchange rates.

6. It is critical to analyze options to minimize the FX risk embedded in the first replenishment of the GCF because a considerable amount of newly replenished contribution is in the form of non-USD PNs as it was in the IRM period.

7. In this context, this document presents an initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF and provides an overview of solutions that could be implemented, subject to further analyses, to lower FX risk related to the first replenishment. Also, the document provides appropriate methods and financial instruments which can be used for FX hedging in an efficient and sustainable way.

8. This document has actual or potential linkages with the following items:

- (a) Initial Risk Management Framework and adoption of a risk register (decision B.12/34);
- (b) GCF Risk Management Framework (decision B.17/11);
- (c) GCF Risk Management Framework (decision B.19/04);
- (d) Workplan of the Board for 2020-2023 (document B.24/14)

1.2 Objectives

9. The objective of the initial analysis of FX hedging options is to recommend FX hedging solutions to mitigate FX risk, lowering the variability of cashflows from non-USD exposures held in the GCF's trust fund. The analysis provides the main criteria of selection with the view of further review of the necessary arrangements and procedures to implement appropriate hedging strategies.

10. The objective of the FX hedging is not to make a profit from active proprietary trading of derivatives products but to manage FX risk in an efficient way.

1.3 Benchmark research

11. The Global Fund implemented FX hedging, by entering into FX hedging agreements such as currency swaps and FX forwards in the global FX market.³ The Global Fund makes FX hedging contracts with commercial banks and customizes the structure of the FX hedging to fit its exposure needs. Also, GAVI (the Vaccine Alliance) utilizes FX hedging instruments in the global FX market to lower its non-USD exposures. GAVI hedged 78% of the non-USD

³ Benchmark study in Annex I provides details on the FX hedging implementation in the Global Fund and GAVI (the Vaccine Alliance) as well as non-implementation in the GEF (Global Environment Facility).

contributions to be received in 2017 and 57% of those to be received in 2018, using currency swap and FX forward.

12. Multilateral development banks such as European Bank for Reconstruction and Development (EBRD), African Development Bank (AfDB), and Asian Development Bank (ADB) use FX hedging instruments in the market to lower the FX risk of their non-base currency assets. In addition, they make FX derivatives agreements to make local currency disbursement as well as local currency funding. Multilateral financial institutions such as the Global Fund and GAVI also have their own trading units and FX portfolio managers to implement FX hedging to protect contributed assets effectively.

II. Recommended action by the Board

13. It is recommended that the Board adopt the draft decision set out in annex I to this document.

III. Options to minimize the effects of currency fluctuation

14. The Secretariat analyzed internal FX risk mitigation methods such as Natural Hedge as well as external FX hedging solutions including currency swap and FX forward agreements to mitigate the FX risk of the Fund. The FX solutions analyzed below are not mutually exclusive, and some of the options can be adopted simultaneously to minimize the FX risk embedded in the non-USD positions of the Fund.

3.1 Option 1: Natural Hedge

15. The Fund can lower the total FX risk in asset and liability by matching non-USD contributions with projects approved in non-USD currencies. A natural hedge is a method of reducing financial risk through normal operations, which include matching cash inflow in a particular currency with cash outflow in the same currency to reduce open exposure.

16. The Fund is already implementing this option, using EUR denominated contributions to finance EUR projects approved by the Board. Natural Hedging is an efficient way to lower the FX exposure of EUR denominated contributions without incurring high hedging cost. However, the Natural Hedge has its own limitation as there was not be enough demand for project disbursements in major non-USD currencies such as EUR, GBP, JPY, and SEK during IRM. It is challenging to attain a sufficient hedge ratio⁴ by implementing Natural Hedging in most of the contributions denominated in non-USD currencies.

3.2 Option 2: FX Reserve

17. According to the GCF Risk Management Framework (decision B.19/04), the Fund will set aside an FX commitment risk buffer at an initial target of 20% of the Fund's nominal investment commitment amount for which the matched source of funds is not in the investment currency. Accordingly, the Fund has set aside USD 170 million as the solvency risk buffer recommended by the Budget Committee.

⁴ Hedge ratio is defined as the amount of hedging instrument divided by the amount of the hedged non-USD position. The total value of project disbursements in USD is 912.5 million and the total disbursements in EUR is 87.9 million as of the end of March 2020.

18. The risk buffer is to cover committed investment currency risk, not to hedge FX conversion risk from the total non-USD PN contributions.

19. The FX reserve can replenish a certain amount of future FX conversion loss, but it is not a solution that mitigates the variation of the USD value of the assets or FX risk eventually. Also, it is a very expensive method to cover the realized FX loss as setting aside cash reserve might result in decreasing the available amount of commitment authority.

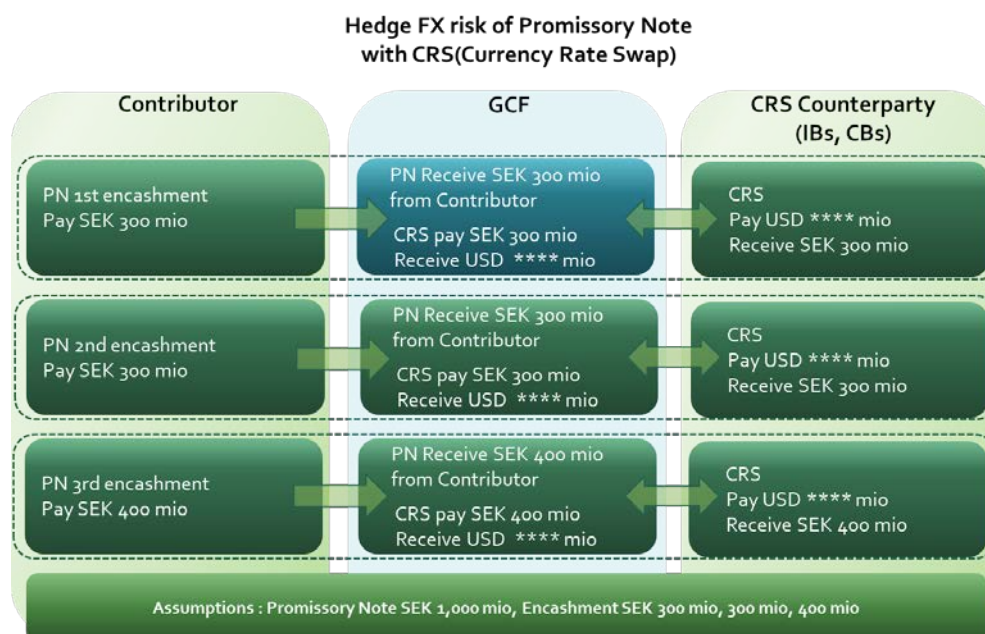
3.3 Option 3: Hedge in the FX Market

20. As an initial analysis of options to minimize the effects of currency fluctuations, this document includes the FX hedging agreements that can be implemented by the Fund in the global financial market.

3.3.1. Currency Swap Hedge

21. Currency swap (Cross Currency Swap, CCS or CRS) is an FX hedging contract to exchange streams of cashflow denominated in different currencies. It is an FX hedging transaction in which two parties exchange a series of cashflows in two currencies. Currency swap instrument can be customized for each client with particular hedging need and will be an efficient hedging solution to promissory notes that have several encashment cashflows in non-USD currency.

22. For example, assuming that the GCF receives a PN of SEK 1,000 million which has three encashment cashflows,⁵ the Fund can enter into a customized currency swap agreement that ensures that the Fund will sell all encashed SEK amount to the currency swap counterparty and receive USD equivalent amount from the counterparty using the FX rates determined at the date of closing the currency swap contract.⁶



⁵ Assumption of encashment: 1st encashment in 2020: SEK 300 million, 2nd encashment in 2021: SEK 300 million, 3rd encashment in 2022: SEK 400 million.

⁶ Currency swap and FX forward can be settled by delivering the two different currencies at each settlement date or by paying netted USD amount as a Non-Deliverable (ND) method.

23. According to the predetermined terms and conditions of the customized currency swap contract, the Fund will pay SEK 300 million received from the encashment of promissory note to the currency swap counterparty and get USD amount at the first encashment date. At the second and third encashment dates, the Fund will be able to convert the encashed amount of SEK 300 million and 400 million into USD amount calculated based on the FX rates determined by the currency swap contract. As a result, the Fund can remove non-USD position and hold USD currency, which will provide more certainty of the future resources available to the Fund for making the funding decisions.

24. The fund can make the customized currency swap transaction with the financial institution which offers the best FX conversion rate (swap price) in the capital market to minimize the FX risk of the non-USD assets. At the deposit date of PN, the Fund can lock in the receivable amount of USD for each encashment amount of non-USD PN at specified encashment date, removing the FX conversion effect of the hedged asset.

25. Currency swap market of major currencies has high liquidity, so the Fund can compare quoted prices in the market to reduce the cost of hedging and to choose the most efficient agreements.

3.3.2. FX Forward Hedge

26. An FX Forward contract is a commitment to purchase or deliver a specified quantity of currency on a designated date in the future for a price determined when the contract is transacted. This financial product functions as a currency hedging transaction similar to currency swap by locking in FX rate that will apply in the future.⁷

27. FX Forward is a currency contract for future delivery of different currencies at a forward currency exchange rate (forward price) set today. In the previous example of hedging SEK 1,000 million PN, the Fund can utilize three FX forward contracts with different maturities to reduce FX risk of each encashment of non-USD PN. First, the Fund can make an FX forward contract to hedge the first encashment amount SEK 300 million. Here the Fund would pay the SEK amount to the FX forward counterparty and receive the converted USD amount from the counterparty at the first encashment date. The second FX forward contract would enable the Fund to convert SEK 300 million into USD equivalent amount at the second encashment date to remove the FX risk embedded in the non-USD currency asset. The third FX forward contract would work in the same way of the two FX forward contracts with the longest maturity to match the time of the third encashment of the PN.

28. Promissory notes of the Fund are denominated in major currencies such as EUR, JPY, SEK, and GBP, and the global markets of the major currency pair show high liquidity and low transaction cost. Therefore, it is more efficient to use FX forwards and currency swaps in the liquid market to lower the hedging cost rather than using exotic financial products in the illiquid derivatives market.

3.3.3. FX Option Hedge

29. FX option is a hedging instrument that gives the buyer the right to buy or sell an asset or obligation in currency. A call option provides the buyer with the right to buy a specific amount of currency at a specified price, called exercise price on a specified date. On the contrary, put option gives the buyer the right to sell a specific amount of currency at a specific price on a specified date.

30. The Fund can utilize FX put options to hedge the scheduled encashment amounts of non-USD promissory notes to buy the right to convert each non-USD cashflow into equivalent USD

⁷ Currency swap can be comprised of a series of FX forward contracts. And FX forward can be used to constitute a currency swap and to modify the hedging amount of currency swap as a fine-tuning tool.

amount. In the previous example, the Fund can buy USD/SEK put option which provides the Fund with the right to sell the SEK contribution amount encashed at the scheduled dates.

31. The option instrument will help the Fund to minimize the FX risk of non-USD assets. However, the price of the option product is the highest in the market. In addition, the option market shows lower liquidity and higher transaction costs than swap and forward market. Due to the high cost and the complexity of implementation, FX forward and currency swap are more commonly used. Therefore, it may be reasonable for the GCF to use option products only after establishing a track record of proven derivatives management and to start utilizing linear financial products such as FX forward and currency swap first.

32. Except for the FX options there should be certainty regarding the incoming cashflows which needs to be delivered by the Fund under the currency swap and FX forward methods. In case the Fund is not able to meet its commitment under the currency Swap or FX forward, the cost of unwinding the transactions could be very high. One way to meet this risk is that the fund critically analyses its contribution agreements and only hedge where the contributors have agreed to deposit cash on a certain date or even the PN encashment schedule is free from any condition. In the beginning the Fund may also want to incorporate additional conservatism by only hedging a certain portion of the estimated cash flow.

Table 1: Comparison of FX hedging products

Instruments	Definition (Target period)	Pros / Cons
1. Currency Swap	A currency contract to exchange a periodic currency amount with another currency amount (Mid to long-term)	Pros: High liquidity in the major currency market, Customization Cons: Complex cash management
2. FX Forward	A currency contract for future delivery at a forward price set today (Short to mid-term)	Pros: Highest liquidity, Simplicity Cons: Need many transactions to hedge one promissory notes
3. FX Option	A contract which gives the buyer the right to buy or sell a currency, but not the obligation (Short to mid-term)	Pros: Protect the loss from the FX hedging transaction Cons: Highest hedging cost, Most complex evaluation/accounting

Table 2: FX hedging instruments and terms

Hedging instruments	Credit rating of the counterparty	Maximum maturity
1. Currency Swap 2. FX Forward 3. FX Option	No less than investment grade as measured at least two major credit rating agencies	No longer than the maturity of target project and PN

3.4 Option 4: Using EUR as accounting base currency

33. In accordance with IFRS(International Financial Reporting Standard), the Fund is using USD as a base currency because most of the funding decision such as funding project approvals, administrative budget, readiness and PPF approval are made based on the USD currency. To maintain the consistency of financial reporting of the Fund as per the IFRS, to avoid the increase in the operational costs, to take advantage of the positive interest rate in USD, to avoid any

accounting and auditing issues, etc, it is recommended to use USD as a base currency. Also it is noteworthy that merely making Euro as functional currency doesn't reduce the forex risk. The risk can be managed via a combination of the option 1 and 3 stated above.

IV. Recommended combination of options for further review

34. The analyzed options to minimize the effects of currency fluctuation are not mutually exclusive, and some of the options are recommended for further analyses so that the Fund's FX exposure can be minimized efficiently.

35. The Fund will continue to use natural hedge (Option 1) to reduce the remaining FX exposure of non-USD assets by matching them with non-USD liabilities on its day-to-day operations. However, the natural hedging has its own limitation as there is not enough demand for project disbursements in major non-USD currencies such as EUR, GBP, JPY, and SEK to offset the non-USD contributions.

36. The Secretariat will further review the opportunities, requirements, and costs related to the use of EUR as accounting base currency (Option 4) and the use of FX hedging agreements such as currency swaps and FX forwards (Option 3) to reduce FX risk embedded in non-USD assets.

37. FX reserve or buffer (Option 2) will also continue to be used. FX reserve will be set aside for the remaining currency exposures after implementing other recommended options.

Annex I: Draft decision of the Board

The Board, having considered document GCF/B.27/18 titled “Initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF”:

- (a) Takes note of the information presented in document GCF/B.27/18 titled “Initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF”;
- (b) Requests the Secretariat, under the guidance of the Budget Committee, and the Risk Management Committee, to develop a policy to minimise the effect of currency fluctuations on the commitment authority of the Fund and to present it for the consideration by the Board at its thirtieth meeting; and
- (c) Requests that the above policy recommendations in paragraph (b) should carefully consider that the resources used for hedging should be justified by the benefits of hedging.

Annex II: Benchmark research

I. The Global Fund

1. The Global Fund is a partnership organization designed to accelerate the end of HIV/AIDS, tuberculosis and malaria as epidemics. The fund mobilizes and invests nearly USD 4 billion a year to support programs run by local experts in more than 140 countries.
2. In order to mitigate the risk associated with exchange rate fluctuations, the Global Fund performs hedging activities using FX hedging agreements. These instruments, typically offered by commercial banks, aim at reducing exposure to exchange rate volatility which occurs in the global markets. To date, the fund has used financial instruments such as FX forward contracts and currency swap contracts to perform its hedging activities.
3. For the period 1 October 2015 to 30 September 2016, the fund entered into 143 trades amounting to USD 5.5 billion. 78 of these trades (US\$2.6 billion) comprised of FX forward and spot transactions, and 65 trades (US\$2.9 billion) were currency swaps. The Global FX framework of the fund stipulates that a minimum of 75% of on balance sheet exposures (contributions and commitments) should be hedged.
4. The need for multi-currency disbursements (MCDs) was identified by the fund as a mechanism to mitigate this risk through the matching of grant disbursements with the currency of expenditure incurred by the programs, and their use was approved by the Board of the fund in 2014. Once implemented, it would result in the mitigation of foreign exchange fluctuations at the country level and managed centrally through the hedging activities of the fund.

II. GAVI (the Vaccine Alliance)

5. GAVI, the Vaccine Alliance, is a global health partnership representing stakeholders in immunization from both private and public sectors: developing world and donor governments, private sector philanthropists, the World Health Organization, the United Nations Children's Fund and the International Bank for Reconstruction and Development. The objectives of GAVI include accelerating access to new and underused vaccines, strengthening health and immunization systems in countries and shaping the global vaccine market to the benefit of developing countries.
6. GAVI expenditures are primarily incurred in United States dollars. Therefore, GAVI is exposed to foreign currency exchange rate fluctuations on contributions receivable in currencies other than the United States dollar.
7. Under its hedging policy approved by the Board, GAVI actively hedges its foreign currency exchange risk on a portion of contributions receivable by entering into currency forward contracts. In addition, a small portion of currency exchange risk is naturally hedged by expenses that GAVI incurs in currencies other than the United States dollar.
8. As of June 2017, GAVI hedged 78% of the non-US\$ direct contributions to be received in 2017 and 57% of those expected in 2018.
9. The International Finance Facility for Immunization (IFFIm, a subsidiary of the GAVI Fund) has entered into currency swap contracts to hedge FX risk and utilized interest rate swap to mitigate interest rate risk embedded in its bonds and other borrowings.

III. GEF (Global Environment Facility)

10. The Global Environment Facility (GEF) was established in 1992 and has provided about \$20.5 billion in grants to help tackle environmental problems. The GEF provides funding to eligible countries for incremental costs of measures to achieve global environmental benefits in the following focal areas: biological diversity, climate change, international waters, land degradation (primarily desertification and deforestation), and chemicals and waste.¹

11. A high number of GEF contributors use non-USD promissory notes that are exposed to FX risk. The FX exposure increases with the length of the maturity of promissory note encashments, which means that the value of donor contributions to a given replenishment is not fully “locked in” until the last promissory note encashment is received by the Trustee. An appreciation of the USD against the non-USD contribution currencies has occurred throughout the GEF-6 period and affected the programming ability of GEF. The shortfall caused by the depreciation of non-USD contribution currencies was estimated to be USD 0.56 billion throughout GEF-6.

12. To mitigate FX risk embedded in the currency mismatch between the assets and liabilities of the GEF Trust Fund, the Secretariat of the GEF and the Trustee proposed FX hedging solutions such as FX forward agreement, but the board members of the GEF had questions on implementing the proposed FX hedging measures, and no conclusion on utilizing FX hedging instruments was reached during the GEF-7 replenishment negotiations. Based on the GEF Council’s decision, the Trustee continues to utilize defined USD reserve as a mechanism to address currency exposure in the GEF.

13. The Trustee estimated the administrative cost of hedging for GEF-6 would be between USD 1.9 million to 2.9 million, applying cost rates of 2 to 3 basis points² to average nominal exposure of PNs.

¹ Source: Global Environment Facility’s website (<https://www.thegef.org/publications>)

² The same cost rates have been used to calculate GCF’s estimated costs in Annex II: FX hedging simulation and cost analysis.

Annex III: FX hedging simulation and cost analysis

I. FX hedging simulation

1. The FX hedging in the market is to reduce the variation of a future cashflow to secure higher predictability of assets' market value. For example, if the remaining non-USD assets of the Fund had been hedged with FX forward instruments, the variation and uncertainty of the assets' value would have been decreased as Figure 1: Hedging effect on accounting PL (Gain/Loss) shows. Several FX hedging simulations were made with hedge ratio of 40%, 60%, 80%, and 100% to show the different level of hedging effect.

2. The Fund had FX accounting loss equivalent of USD 103.4 million in 2016 because the value of the non-USD currencies held in the GCF account had depreciated against USD. If the Fund had hedged 40% of non-USD exposures, it would have lowered the FX accounting loss to USD 62.0 million. (If 80% had been hedged, the loss would have ended with only USD 20.7 million. Perfect hedge with 100% hedge ratio would have led to zero FX accounting loss.)

3. The hedging not only mitigates the FX accounting loss for 2016, 2018, and 2019 but also decreases the gain in 2017. Had 40% hedging been implemented, the FX accounting gain would have decreased from USD 133.3 million to USD 80.0 million.

4. It is worth noting that FX hedging will narrow the range of variation in the assets whether it is gain or loss. If the hedge ratio increases from 0% to 100%, the variation of FX accounting PL (Gain/Loss) decreases from 100% to 0%.

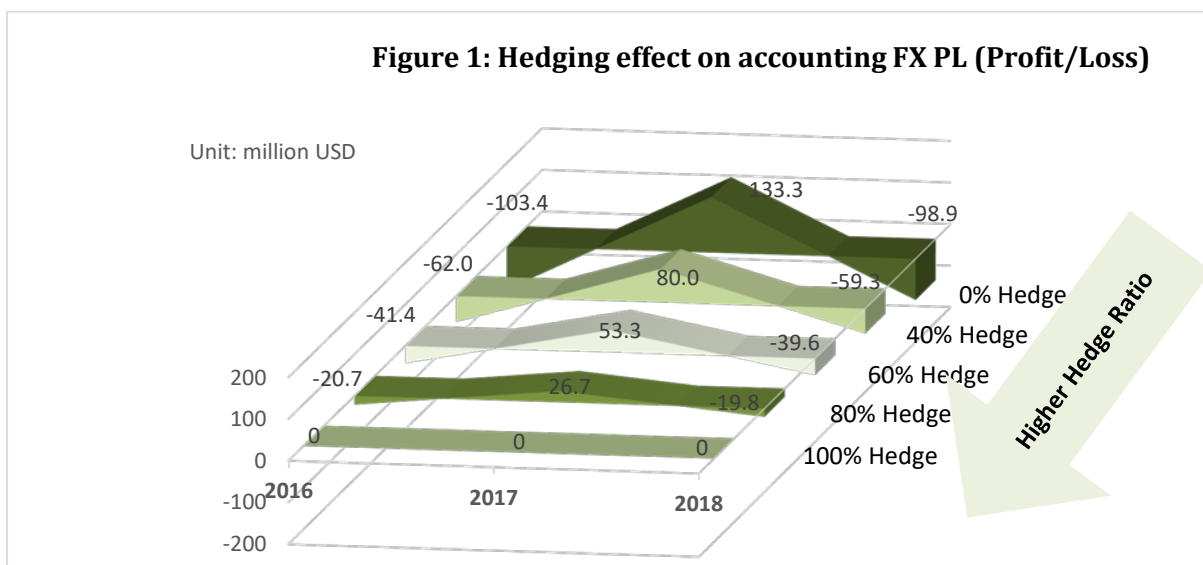
Table 1: Hedging effect on accounting FX PL (Profit/Loss)

(Unit: USD million eq.)

	2016 PL	2017 PL	2018 PL
Accounting PL without hedging (Hedge Ratio: 0%)	-103.4	133.3	-98.9
Accounting PL (Hedge Ratio: 40%)	-62.0	80.0	-59.3
Accounting PL (Hedge Ratio: 60%)	-41.4	53.3	-39.6
Accounting PL (Hedge Ratio: 80%)	-20.7	26.7	-19.8
Accounting PL (Hedge Ratio: 100%)	0.0	0.0	0.0

Higher Hedge
Ratio results in
Lower FX risk

Figure 1: Hedging effect on accounting FX PL (Profit/Loss)



II. FX hedging cost analysis

5. FX hedging is to reduce the variation of a future cashflow to secure higher predictability of market value, not to make financial gains by predicting FX rates and trading FX products actively.

6. Financial institutions use different methods to calculate the cost of FX hedging because the actual cost is dependent heavily on the market conditions and future price movements. Hedging in the liquid FX forward and swap market can be relatively inexpensive for some currencies such as EUR, JPY, and GBP. However, less liquid currencies may incur higher costs depending on the supply-demand dynamics in the region.

7. According to the usual method in the market, the total cost of FX hedging consists of basic cost (interest rate differential) and additional cost:

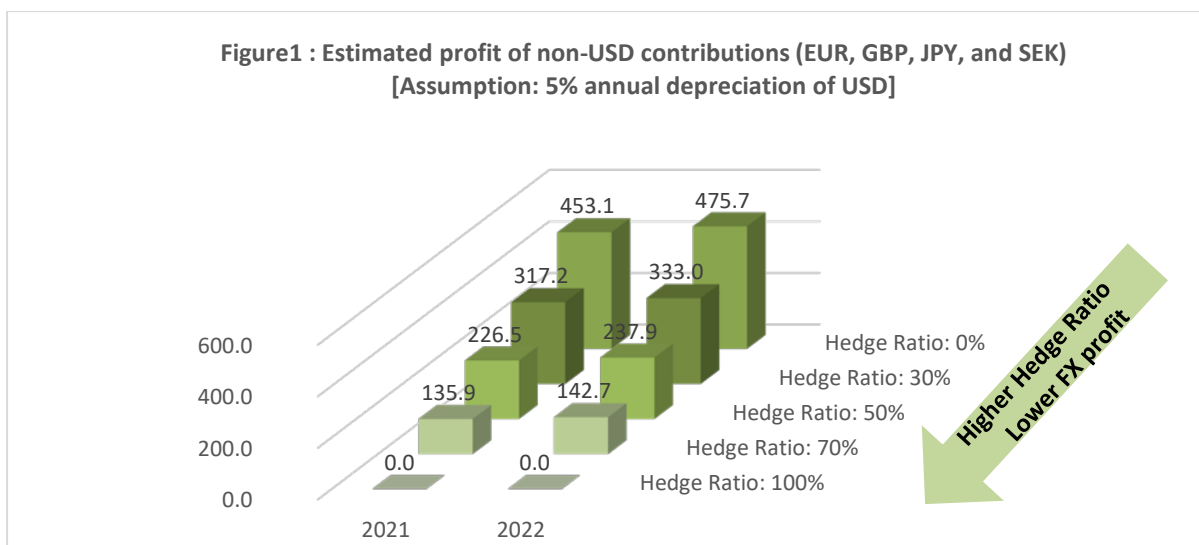
(a) Basic cost (Interest rate differential): Currency with the higher interest rate is priced at a discount to the currency with the lower interest rate in covered interest parity (CIRP), which means that if FX hedging agreement is to sell currency with high interest rate, the currency will be sold at a discount in the future. Because the GCF's PNs are denominated in currencies with lower interest rate such as EUR, JPY, GBP and SEK, the basic cost of selling the currencies with lower interest rate would be zero.

(b) Additional cost: The additional cost can be calculated as the difference between the total realized cost and the basic cost. This cost includes administration/transaction cost and cross currency basis caused by the supply-demand dynamics in the FX market. The World Bank estimates the administration/transaction cost to be in the range of two to three basis points (0.02% ~ 0.03%) of the hedged exposure.

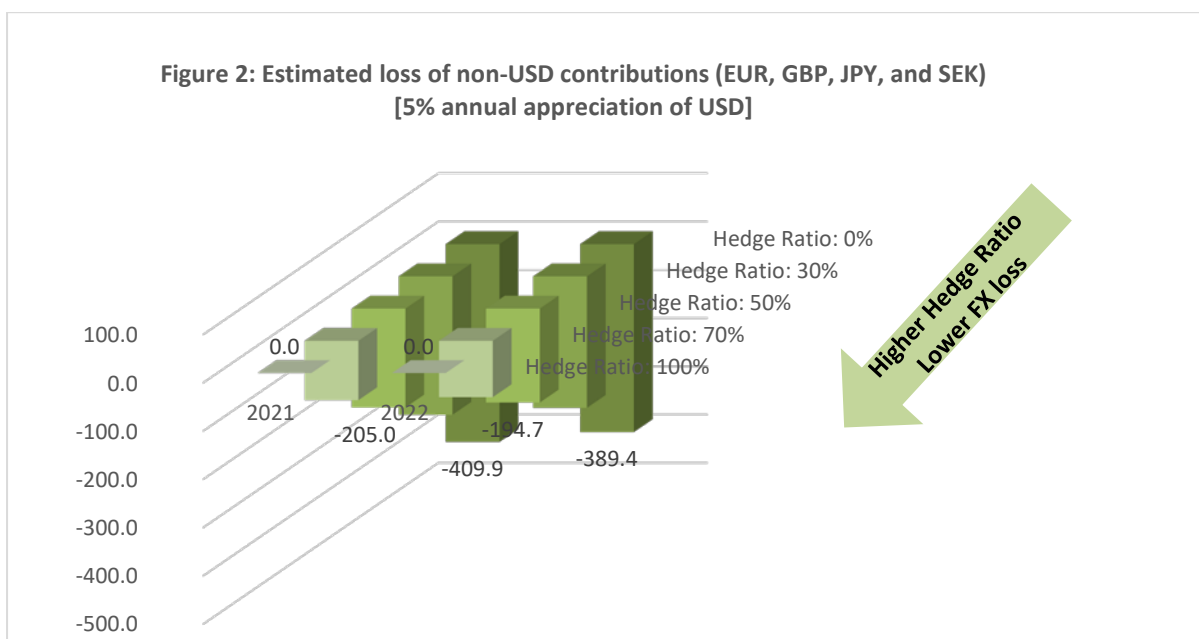
8. The cost of not hedging would be the opportunity cost of the FX solvency risk buffer. As of June 2020, from the commitment authority the Fund has set aside USD 170 million as the solvency risk buffer that cannot be used to finance the approved projects.

Annex IV: FX hedging simulation (GCF-1)

1. FX hedging narrows the range of variation in non-USD assets whether it is a gain or loss. Under the assumption that USD depreciates against major non-USD currencies by 5% annually, the Fund may have an estimated economic gain of USD 453.1 million in 2021. It is the non-accounting FX gain that can be made by the appreciation of GCF-1 contributions in EUR, GBP, JPY, and SEK. If the Fund enters into hedging agreements to hedge 50% of the major non-USD currency assets (hedge ratio: 50%) at the beginning of 2021, the gain will decrease to USD 226.5 million. If FX hedging contracts is made with a 100% hedge ratio, the Fund will lose all the potential gain that would be created by the appreciation of non-USD currencies as shown in Figure 1.

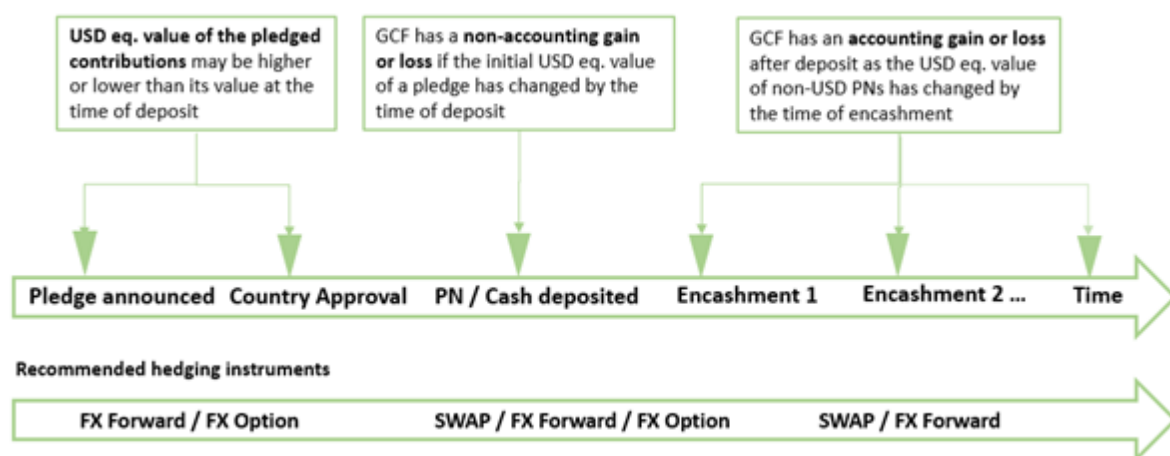


2. On the contrary, if we assume USD appreciates 5% annually, the Fund may have an estimated economic loss of USD 409.9 million in 2021 without FX hedging. By entering into hedging agreements with a 50% hedge ratio, the Fund can lower the loss to USD 205.5 million. If a 100% hedge is implemented, there will be zero economic loss as shown in Figure 2.



Annex V: Target FX exposures to hedge

1. In the replenishment process, the pledging does not have any effect on the accounting of the Fund. When the PN is deposited in the trust fund, the deposited PN is recognized as a receivable asset and recorded in the Fund’s accounting journal. Therefore, the FX hedging can be made only after the PNs are received in the trust fund and recognized as material assets, on an accounting basis.¹
2. In accordance with IFRS (International Financial Reporting Standard), the Fund does not recognize PNs as GCF’s assets before the PNs are deposited in the trust fund. After the point of deposit, non-USD PNs are open to FX conversion risk until they are encashed and converted to USD currency, so the unencashed PNs deposited in the trust fund will be the main target of hedging.



3. Non-USD contributions deposited in the first replenishment period will increase FX risk if the current project portfolio remains the same. Contributions deposited as non-USD PNs can be primary targets of FX hedging because most of non-USD “cash” contributions are converted to USD when deposited in the trust fund account.

¹ Most financial institutions are managing FX risk on the basis of accounting, but there are institutions that use FX derivatives instruments to hedge some portion of pledged asset which is not deposited in the account (off-balance sheet hedging), which has a risk of increasing the variation of accounting loss because there is an accounting mismatch when the asset commitment is not recorded in the accounting but the FX hedging deal is recorded as an accounting transaction.

Annex VI: Risk Management of FX hedging

I. Potential limitations on the hedging amount and schedule

1. At the initiation of FX hedging contract, the total amount of hedging instrument may not be larger than the total FX exposure in non-USD promissory notes. Over-hedge cannot be allowed because it can lead to speculation, which is not the objective of the Fund.
2. Obtaining certainty from contributors on the timing of encashment is crucial to minimize hedging costs. However, a qualified PN does not have a certainty of encashment because the commitment is depending on the enactment of the contributor's legislative decision. If the Fund is targeting a 100% hedge ratio, the target may not be accomplished because there might be some contributors who will delay encashment or change the predetermined schedule of encashment. Therefore, most advanced funds implementing FX hedging in the global market sets target hedge ratio in the range of 50% to 80% of the total value of non-USD position.¹ It is recommended that the Fund initiate the hedging with a 50% hedge ratio at the initial phase then increase the ratio after establishing a proven track record. FX hedging will be made based on the updated contribution schedules as agreed with the contributors.
3. The GCF may implement FX hedging on the PNs which have written encashment schedules in the signed contribution agreements and a track record of timely payments in the IRM period. Where encashment timing and amount are uncertain, estimates should be made based on historical data of contribution and advice from PN contributors.

II. Minimizing counterparty risk

4. The credit rating of FX hedging counterparty must be higher than or equal to investment grade as measured at least two international credit rating agencies. If the credit rating of a counterparty is below investment grade², the counterparty must provide collateral to the GCF based on the Credit Support Annex (CSA) or other collateral contracts to the satisfaction of the Fund.
5. It is recommended that the GCF find counterparties who do not request collateral from the GCF, but if all prospective counterparties request collateral, the GCF shall try to establish a pledge right on the cash owned by the GCF instead of collateral delivery.
6. An International Swaps Dealer Association (ISDA) Master Agreement³ or derivatives contract will be used when the GCF makes OTC (over-the-counter) derivatives deal.
7. Counterparty risk can be managed by monitoring the CDS (Credit Default Swap) rate and other credit risk information of the counterparty.

¹ The Global Fund targets 75% hedging of FX exposure on balance sheet, and GAVI(the Vaccine Alliance) hedged 57%~78% of non-USD contributions to be received in 2017 and 2018. Because 100% hedging is an expensive and ineffective way of FX hedging, many financial institutions start with hedge ratio in the range of 50% to 80% of their FX exposure.

² If the counterparty is a local financial institution, it must have credit rating equal to or higher than A by S&P/Fitch, A2 by Moodys.

³ ISDA Master Agreement is the cornerstone of derivatives transaction and provides a safer standardized legal template to FX market participants.

III. Governance and operations

8. In accordance with the GCF Risk Management Framework (decision B.19/04), the Chief Financial Officer (CFO), as the primary owner and manager FX risk, is responsible for ensuring that FX risk of the Fund is monitored and managed within the level specified in the Risk Appetite Statement. The ORMC (Office of Risk Management and Compliance) performs control function as an independent unit.

9. At the initial phase of FX hedging implementation, the CFO team may develop and provide any FX hedging strategies to the Budget Committee (BC) and implement the strategies under the guidance of the committee. ⁴

10. The Secretariat may build an internal team or hire an advisor to ensure that the Fund enters into FX hedging agreements and manage cash transfers as well as ISDA confirmations in accordance with Risk Management Framework and the relevant policies. The capacity need will depend on many factors including the type of instruments, counter-party, hedging ratio etc. These parameters will be decided in the hedging policy document.

11. The Secretariat may build an internal team or hire an advisor to ensure that the Fund enters into FX hedging agreements and manage cash transfers as well as ISDA confirmations in accordance with Risk Management Framework and the relevant policies.

IV. Accounting

12. FX derivatives accounting must be done in accordance with IFRS (International Financial Reporting Standard) and with an external accountant's consultation.

13. The Secretariat shall estimate the fair value of FX hedging product based on quoted market prices as well as market pricing models provided by independent accounting firms or counterparties and will record all FX hedging instruments on the Fund's balance sheet.

⁴ After the Fund has a proven track record in FX hedging, the Secretariat needs to have the discretion to enter into hedging agreements with the nominal amount below a certain level set by the Budget Committee. The BC may consider delegating some of its mandate related to FX hedging to the CFO team or the Fund's working group/committee such as ALCO (Asset Liability Committee).

Annex VII: Market forecasts of USD against major non-USD contribution currencies

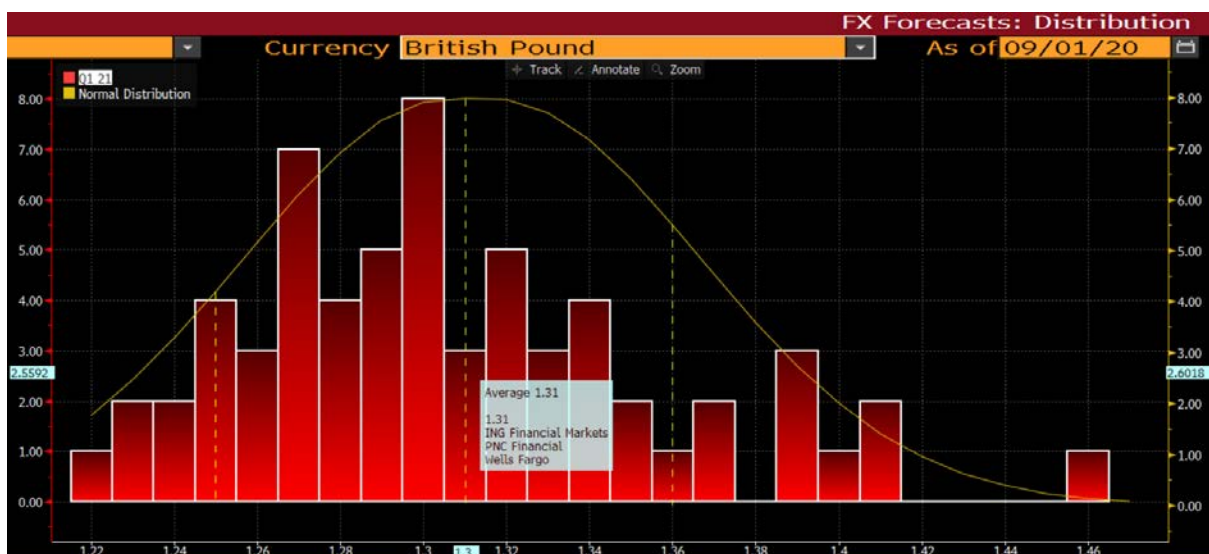
1. Bloomberg survey on future USD/EUR rate for Q1 2021 shows a wide range of forecasts provided by market participants in this COVID-19 situation. According to the recent market survey, the average USD/EUR rate forecast is about 1.18. The wide distribution of the FX forecast indicates that some banks expect USD/EUR rate will increase up to over 1.24 (EUR appreciation) and others predict USD/EUR rate will decrease to around 1.08 (EUR depreciation).

Figure 1. USD/EUR survey: Average rate (Q1 2021)=1.18, Current rate=1.19



(Source: Bloomberg as of 1 Sep 2020)

Figure 2. USD/GBP survey: Average rate (Q1 2021)=1.31, Current rate=1.34



(Source: Bloomberg as of 1 Sep 2020)

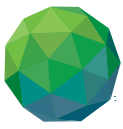
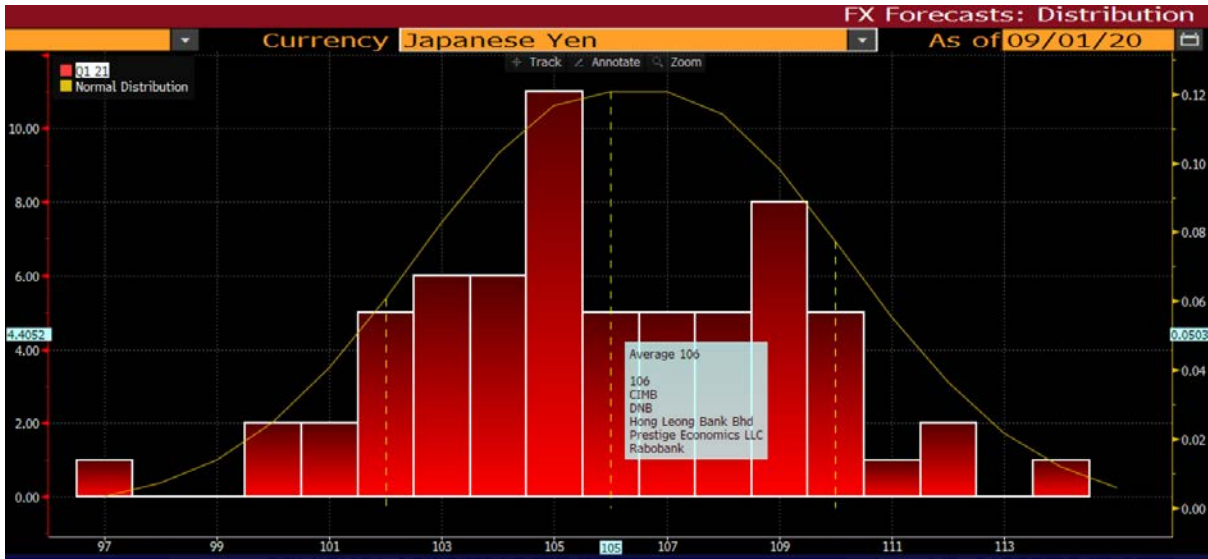
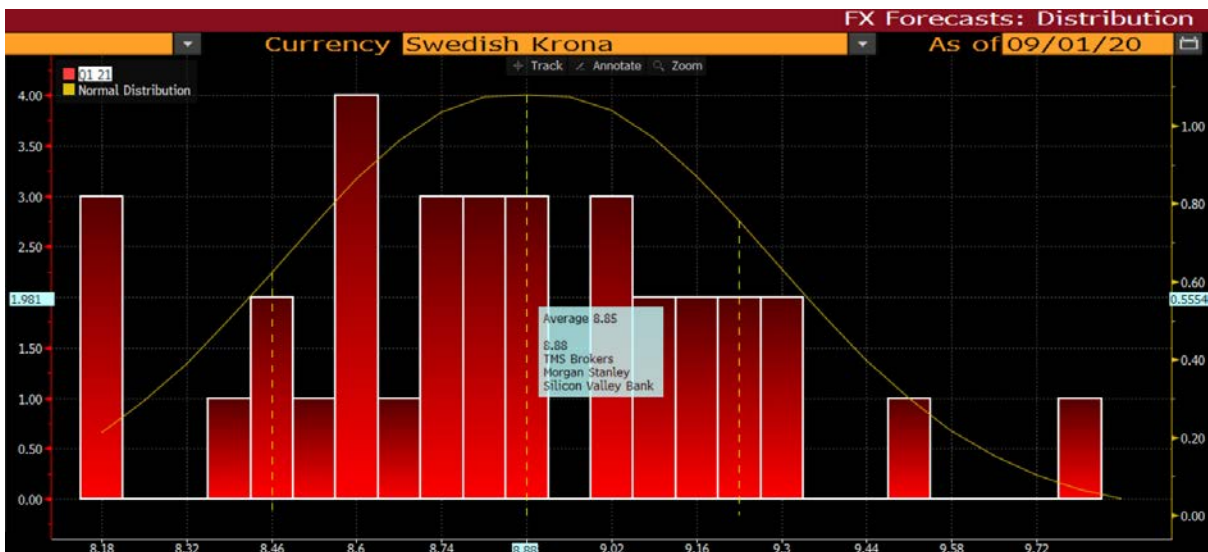


Figure 3. JPY/USD survey: Average rate (Q1 2021)=106, Current rate=106



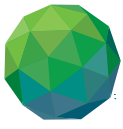
(Source: Bloomberg as of 1 Sep 2020)

Figure 4. SEK/USD survey: Average rate (Q1 2021)=8.85, Current rate=8.68



(Source: Bloomberg as of 1 Sep 2020)

2. In light of the constantly changing exchange rate forecasts and high volatility caused by COVID-19, the analysis of FX forecasts above can be used for reference purposes only.



Annex VIII: Indicative timeline

1. Sep - Oct 2020: The Secretariat provides the document titled “Initial analysis of options to minimize the effects of currency fluctuations on the commitment authority of the GCF” to the Budget Committee (BC) and the Risk Management Committee (RMC)
 2. Oct 2020: The BC provides the document and its comments to the Board for its consideration at B.27
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