



IMPACT REPORT 2023

Building a **global**
solution for **currency risk**

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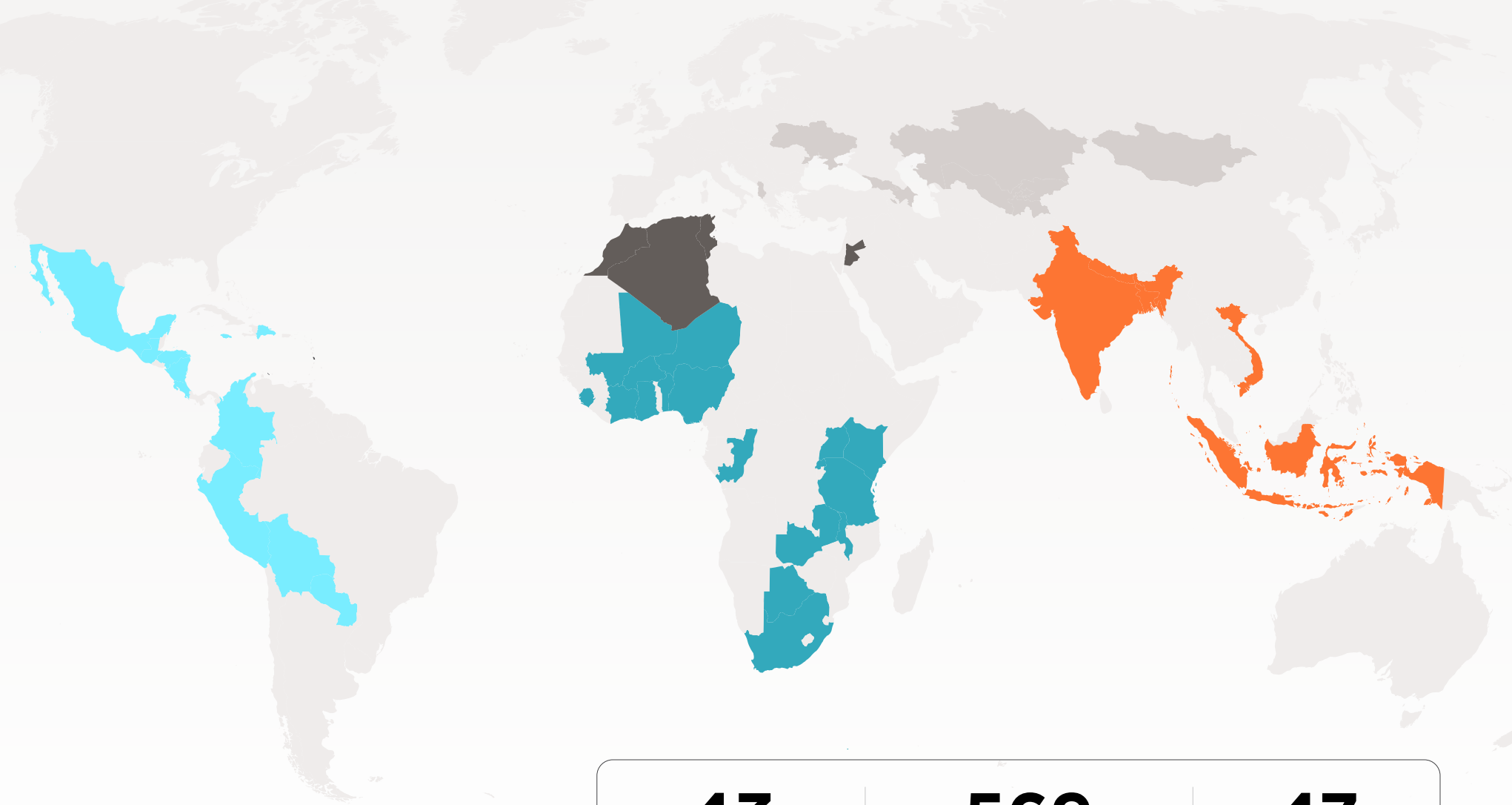
TCX is a global development finance initiative supported by a shareholder base that includes FMO, IFC, EBRD, EIB, KfW as well as the European Commission and Dutch, Swiss, British, French and German governments and other DFIs and Microfinance Vehicles. TCX protects borrowers in emerging and frontier markets from currency risk by facilitating currency hedges that transfer the risk to TCX's balance sheet. TCX offers derivative instruments—*cross-currency swaps and FX forwards*— in currencies not or insufficiently offered by commercial parties. TCX started operations in 2007 and has since then hedged a total volume of over USD 14 billion in development loans in 66 currencies and hedged the currency risk for nearly USD 2.5 billion in frontier market currency denominated bonds.

For questions about the Impact Report, please contact [Thomas Oostheim](#).

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2023 Impact at a Glance

TCX hedged USD 2.29 billion of new development finance loans to emerging and frontier countries across 43 currencies in 569 transactions, protecting borrowers from currency risk.



\$1,477m

to micro, small, and medium enterprises

\$82m

to renewable energy and energy efficiency projects

\$242m

to least developed countries

\$122m

to public sector borrowers

\$512m

in local currency bond issuances

43
CURRENCIES

569
TRANSACTIONS

47
COUNTRIES

\$411.3m
● Asia

Bangladesh	0.3
India	231.0
Indonesia	115.7
Nepal	8.0
Vietnam	56.3

\$726.4m
● Europe + Central Asia

Albania	0.5
Azerbaijan	117.3
Georgia	42.6
Kazakhstan	107.8
Kyrgyzstan	49.5
Mongolia	6.9
Tajikistan	94.4
Ukraine	21.7
Uzbekistan	285.7

\$568.7m
● Latin America

Bolivia	6.9
Colombia	48.9
Costa Rica	59.3
Dominican Republic	51.0
Guatemala	59.5
Honduras	22.7
Jamaica	125.3
Mexico	6.5
Nicaragua	5.5
Paraguay	123.3
Peru	59.7

\$246.2m
● Middle East + North Africa

Algeria	80.5
Jordan	70.2
Morocco	41.1
Tunisia	54.4

\$333.7m
● Sub-Saharan Africa

Benin	4.8	Mali	3.9
Botswana	5.0	Niger	26.6
Burkina Faso	2.7	Nigeria	10.0
Congo	10.0	Rwanda	5.6
Côte d'Ivoire	15.7	Sierra Leone	7.3
Ghana	1.7	South Africa	12.2
Kenya	45.9	Tanzania	115.9
Madagascar	11.5	Uganda	42.6
Malawi	4.1	Zambia	8.3

TCX supported financing towards nearly all UN Sustainable Development Goals, but in particular SDGs 1, 7, 8, 10 and 17.

1 NO POVERTY

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

17 PARTNERSHIPS FOR THE GOALS

A Letter from the CEO



Ruurd Brouwer
CEO

I am very pleased to share TCX's Impact Report for 2023, presenting TCX's direct and indirect impact through data and case studies. The year was a monumental one for TCX, where currency risk and local currency financing featured higher than ever in global discussions on debt sustainability and climate finance during COP and G20. TCX's 17 years of experience in managing currency risk of emerging and frontier country borrowers makes us a meaningful partner in the public dialogue offering credible solutions.

TCX grew its hedging volume with 65% to nearly USD 2.3 billion in 2023, signalling the growing demand from borrowers to mitigate FX risk at a larger scale. We were able to also grow our market creation activities by mobilizing private investors to invest in frontier market currency risk. In 2023, TCX was able to on-sell a record-breaking volume of over USD 1.5 billion of currency risk to private investors and investment banks.

These results emphasize TCX's important and unique role in the development finance ecosystem. We are often the sole provider of solutions to currency risk in frontier markets, which speaks to TCX's additionality principle. But also in emerging countries with existing commercial hedging solutions, TCX plays an impactful role in providing liquidity and hedging loans with tenors up to 30 years.

Currency risk is increasingly acknowledged as one of the main drivers of debt vulnerabilities among low-income borrowers. Still, there is a relatively widely spread lack of awareness about currency risk and about how to

quantify and manage it. TCX has stepped up and taken a leading role in advocating for reform and to increase currency risk management capacities.

In June 2023, France organized the *Summit for a New Global Financing Pact*, where global decision makers convened to address debt crises of vulnerable countries. Currency risk—a major driver of debt vulnerabilities—was front and centre of the discussions. TCX welcomed the invitation from France to prepare, together with the IMF and the World Bank, a proposal to manage FX risk at scale. In response, TCX wrote a [Roadmap to Financial Resilience](#), outlining concrete steps that MDBs, donor governments and policy setters can take to mitigate FX risk, enable local currency financing and improve debt sustainability.

Our recommendations were recognized at the UN Climate Week, the G20 and other convenings of global decision makers.

In 2024, we will continue to raise awareness for concrete, actionable solutions to protect borrowers from currency risk the more than 100 developing and emerging economies TCX covers.

My colleagues and I look forward to another year of growing hedging volumes and increasing impact.

Because development finance can do better.

2023 volume growth

65%

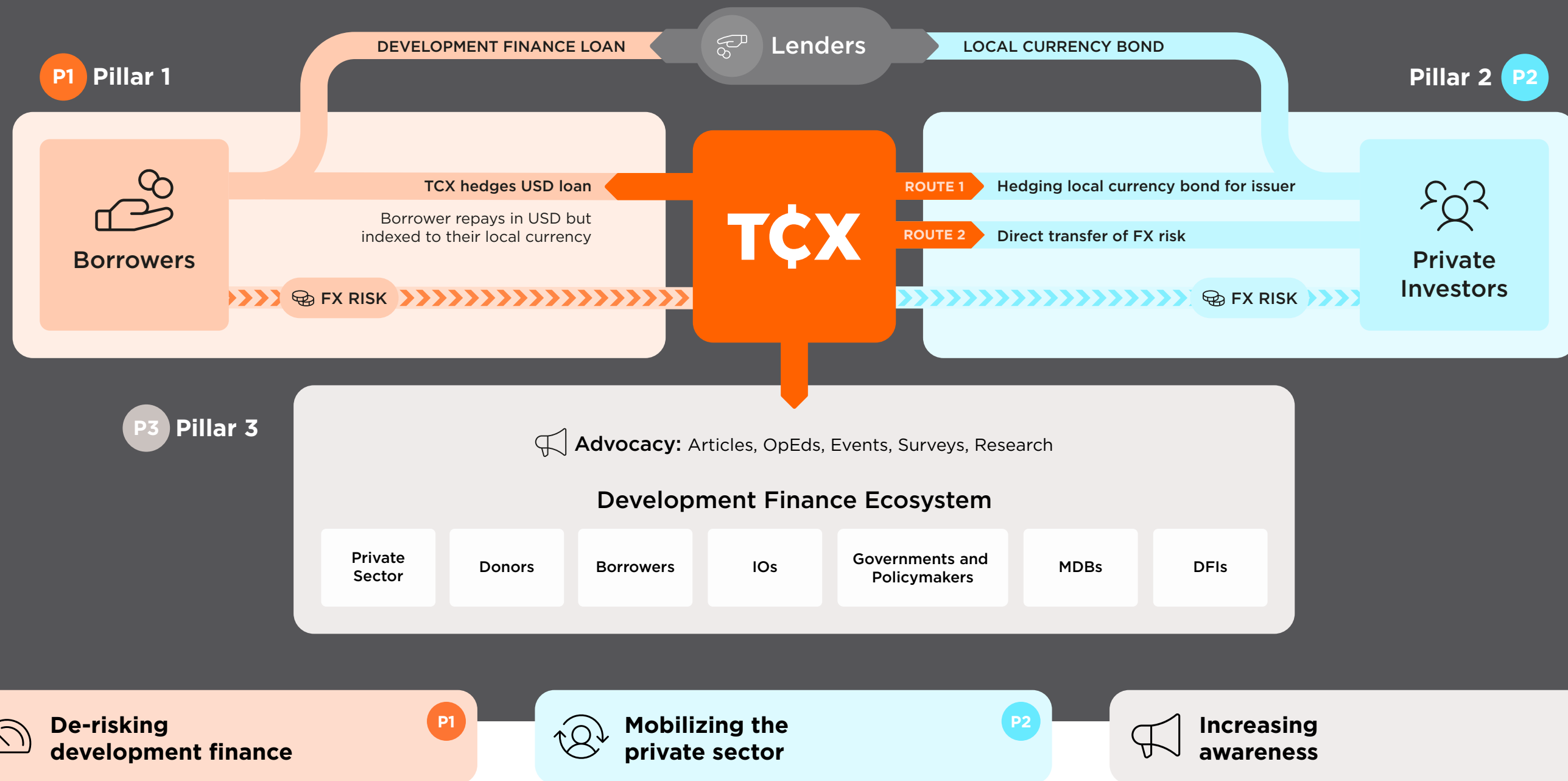
Development Impact Reporting Approach

TCX generates development impact by protecting borrowers in emerging and frontier markets from the consequences of currency risk.

We offer currency risk solutions—*cross-currency swaps and forwards*— that convert hard currency development lending into lending linked to the local currency¹. This way, borrowers still receive hard currency but are not impacted by movements in the exchange rate. Their debt service repayments remain stable and predictable which is a prerequisite for debt sustainability.



¹ As a development finance initiative, TCX pursues maximum development impact and does not compete with commercial banks. We are active in those markets and currencies where no commercial alternatives exist.



Primarily, TCX hedges lending to private and public sector borrowers in developing countries that create environmental, economic and social impact and contribute to the UN Sustainable Development Goals (SDGs). We improve the financial resilience of the borrowers and projects, especially in volatile times.

In addition to TCX's core activity of hedging loans and taking the currency risk on TCX's balance sheet, we are also able to transfer part of the currency exposure to private sector. This contributes to the development of capital markets. In essence, TCX shifts frontier market currency risk from borrowers to private investors, which enhances the transparency and efficiency of development finance. Most importantly, it ensures that currency risk is borne by institutions that seek and can manage it and not by vulnerable borrowers.

Increasing borrowing protection from currency risk and the overall adoption of local currency financing in the development finance ecosystem is fundamental to improve debt sustainability and financial resilience. TCX advocates for rethinking the traditional practice of hard currency lending and educating borrowers about the importance of managing currency risk. This requires a strong mandate from donors, policy setters, and senior leadership of international financial institutions. Our advocacy and thought leadership activities contribute to increased awareness and understanding on a global level.

Theory of Change Matrix

	Output	Outcome	Impact
De-risking development finance P1	• Borrower receives financing from development lender, indexed to their local currency. • TCX hedges the currency risk, taking the risk onto its balance sheet.	• Removed currency risk of a hard currency loan to a borrower in an emerging or frontier market. • Encouraged and enabled investment into emerging or frontier markets.	• Improved financial resilience of projects and borrowers. • Increased resilience of development finance.
Mobilizing the private sector P2	• A frontier market currency bond is issued by a development finance institution. • Frontier market risk is on-sold directly to private investors.	• Shifted currency risk otherwise borne by frontier market borrower to private investor seeking the risk. • Matched supply and demand for currency risk products. • Increased TCX’s capacity to onboard more FX risk.	• Increased efficiency of SDG-related finance.
Increasing awareness P3	• Thought leadership on currency risk debt sustainability. • Events with ecosystem actors on FX risk mitigation. • Survey and research reports focused on borrower currency risk management.	• Increased attention for currency risk across the ecosystem. • Expanded the FX risk mitigation ecosystem.	• Increased awareness of (the impact of) currency risk. • Induce sound policy decision making on FX risk mitigation.

Impact SDGs



TCX contributes to financial resilience of financial institutions and their micro- and SME clients, and helps facilitate access to reliable finance for households and small businesses.



TCX has a strategic focus on developing local currency climate finance and targets to support lending towards renewable energy projects.



Loans hedged by TCX support employment creation and the economy’s GDP through salaries, profits and taxes.



TCX provides solutions to currency risk for emerging and frontier markets, including for the least developed countries.



TCX was established as the result of a global partnership among donor governments, development finance institutions and impact investors. This partnership is enforced and extended through our market-making activities, involving commercial banks and investors, and our advocacy efforts.

Impact Measurement

TCX measures its expected impact through a set of defined indicators, which are set out for each of the three pillars in the graphic below. Featured case studies, interviews and stories of lenders and borrowers amplify TCX’s reach and development impact.

The volumes of new hedges across regions and sectors, as well as their additionality,

are key impact indicators and reported for pillars 1 and 2. We measure TCX’s additionality for each hedge through the *Difficulty of Hedge indicator* (see Call-out Box 1).

It is less straightforward to report quantitative data on TCX’s advocacy activities, which were highly successful

and visible in 2023. Our efforts to increase currency risk awareness indirectly feed into volumes that TCX’s hedges. Nevertheless, the indicators presented for pillar 3 give an indication of how TCX’s currency portfolio develops and TCX’s ability to develop pricing models for the most challenging currencies, even when there is no market data available.



De-risking development finance

P1

Indicator 1

Volume of new transactions

Indicator 2

Difficulty of Hedge score of new transactions

Indicator 3

Joint Impact Model estimates of underlying impact



Mobilizing the private sector

P2

Indicator 1

Volume of new transactions

Indicator 2

Number of new local currency bond issuances

Indicator 3

Difficulty of Hedge score of new local currency bond issuances



Increasing awareness

P3

Indicator 1

Number of currencies in portfolio

Indicator 2

Number of currencies with no market data, for which a pricing model has been developed

Call-out Box 1

6.6

7.5

6.0

Difficulty of Hedge indicator

TCX adheres to the principle of additionality, meaning that we provide currency risk solutions for those currencies, tenors and sizes where commercial alternatives are absent or inadequate. We measure this additionality principle by assigning a score (ranging from 2 to 10) to each of TCX’s hedges based on the level of difficulty for hedging the specific currency and tenor combination in the market. The coefficients for the various currency-tenor combinations are updated only in the case of major market shifts. For the 2023 measurement, no changes were made to coefficients.

For example, a hedge for a transaction in a low-income country with little to no hedging availability, such as Sierra Leone, score a higher Difficulty of Hedge score than a similar transaction in Indonesia—which has better developed financial markets. The higher the score, the more difficult to hedge that transaction in the market for a highly creditworthy institution. The score does not consider the counterparty additionality. Even if certain currency-tenor combinations are available in the swap market, these may only be accessible for larger institutions with a high credit rating. For such instances, TCX’s additionality is derived from offering currency swaps to institutions with no access to commercial banks.

2023 Impact Results





Pillar 1

P1 Indicator 1

Volume of new transactions

BY GEOGRAPHY

In 2023, TCX hedged currency risk for a record USD 2.29 billion in emerging and frontier markets across 43 currencies in 569 transactions. This far succeeded TCX's volume target and represents a 65% increase compared to 2022.

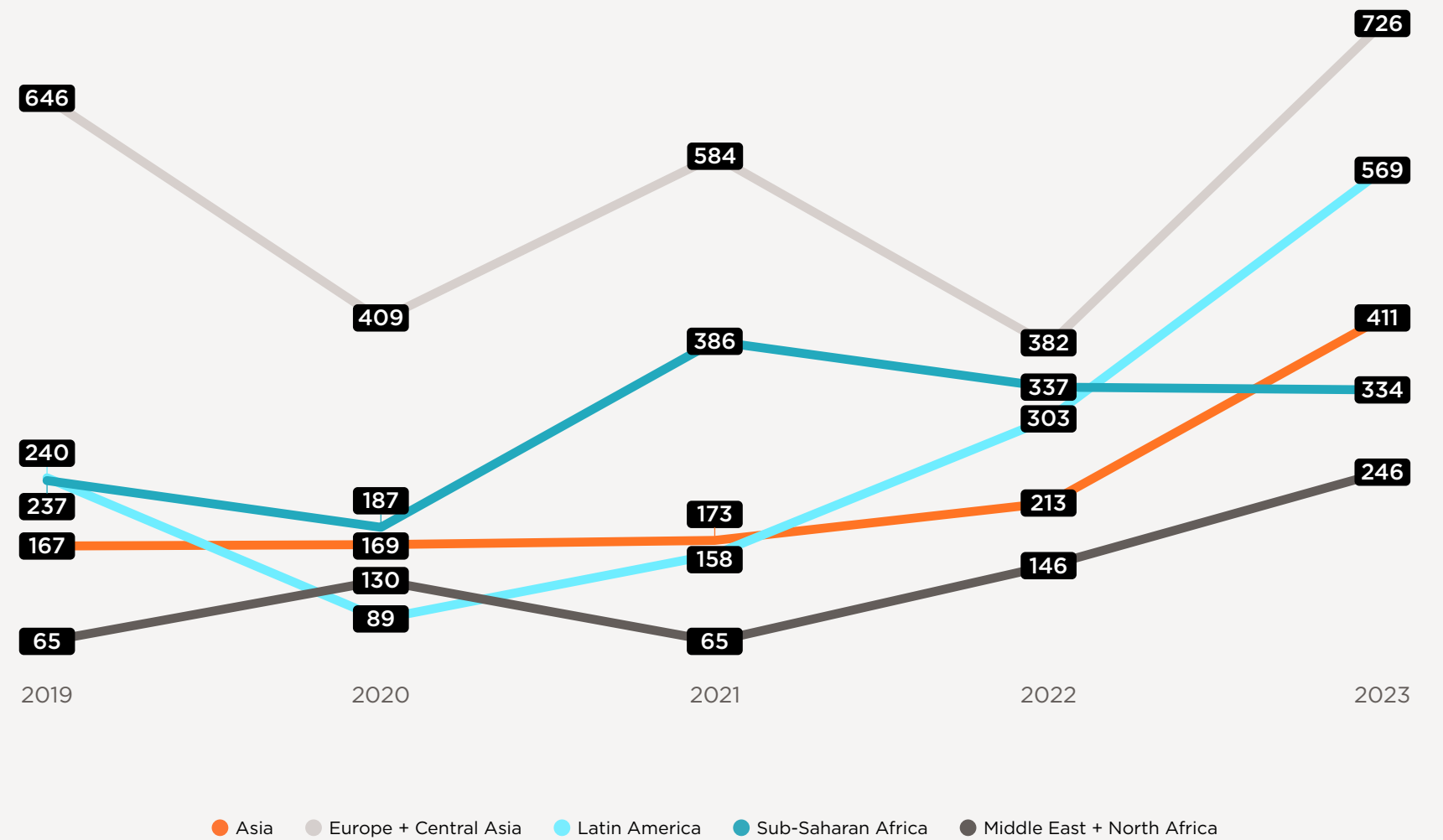
The growth happened across the regions that TCX covers, specifically Asia (+93%), Europe and Central Asia (+90%), Latin America (+88%), Middle East and North Africa (+68%).

TCX was most active in **Europe and Central Asia** in 2023. We nearly doubled last year's hedging volumes in the region for a total of USD 726 million. This significant increase can be ascribed by growing activity across all countries, but in particular in Azerbaijan, Kazakhstan and Uzbekistan, which together represent nearly two-thirds of volume in the region. The demand for (indexed) local currency finance has traditionally been relatively high in Uzbekistan and conducive pricing facilitated volumes for Azerbaijan in 2023.

TCX achieved a record production in the **Asia** region in 2023. This was driven by a strong volume in the fund's core markets such as Vietnam, and Nepal, where TCX closed its first transaction ever. Additionally, the production was supported by increased activity in some emerging markets (EM) such as India and Indonesia. TCX performs its additionality role in these EM markets by offering its risk warehousing capacity for relatively large size tickets and long dated transactions at times of market illiquidity. This enables the market to function in a price-efficient manner even at moments of distress.

Hedging volumes per region

— USD millions





Activities in **Latin America** increased with 88% compared to 2022. While hedging volume increased across the board, we recorded significant upticks in activity in the Paraguayan guarani and the Jamaican dollar, where TCX hedged a large transaction to a state-owned enterprise. In Paraguay, the government's active de-dollarization targets and growing microfinance sector have contributed to increased hedging volumes. Both Paraguay and Jamaica accounted for over USD 120 million in hedging volumes in 2023.

In the **Middle East and North Africa**, TCX provided hedging in the currencies of Tunisia, Jordan, Morocco and Algeria for a total of USD 246 million. Overall, total deal count in MENA doubled and total volume increased with 68% thanks to renewed interest from investor for hedging Jordanian dinar (JOD), Moroccan dinar positions plus the consolidated flows for Tunisian dinar, Algerian dinar with commercial banks. After a couple of relatively quiet years, TCX's hedging activities for the Jordanian Dinar increased materially with 17 transactions in JOD in 2023 thanks to a favorable rate/pricing conjuncture and a renewed interest in the country from investors. In the spotlight, a financing transaction by Proparco in the Jordanian Dinar for an MFI hedged by TCX. This transaction is noteworthy as benefitted of the support of the European Union's SME MENA Facility – which exists to stimulate indexed local currency lending and serve the most

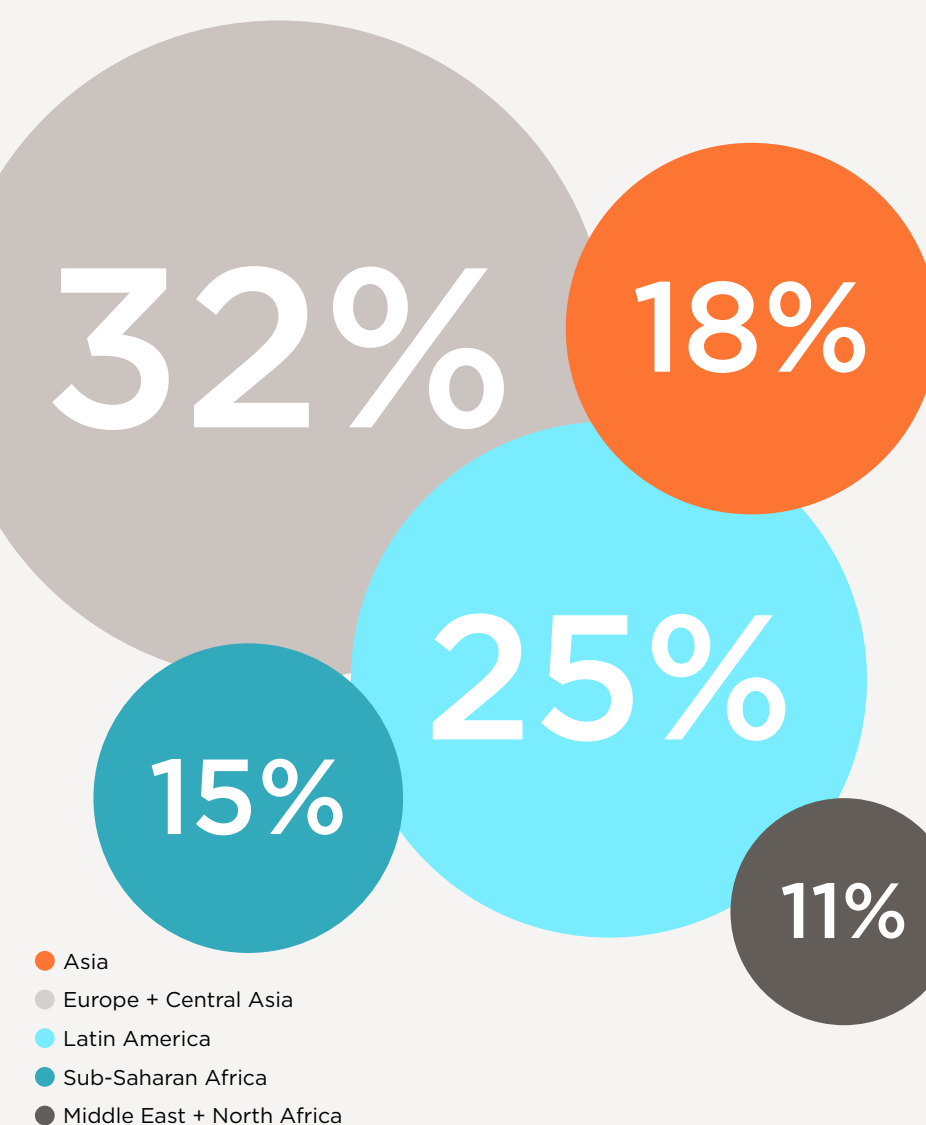
underserved segments of the economy – and was structured to support MSMEs in the country.

Despite high volatility and interest rates in 2023, coupled with FX shortages in multiple countries, TCX hedged USD 334 million in 14 different **Sub-Saharan African** currencies. The region remains TCX's most diversified in terms of currencies traded. The top 4 currencies represented 78% of the volumes (Tanzanian shilling: 35%, West-African CFA franc: 16%, Kenyan shilling: 14% and Ugandan shilling: 13%). The average ticket size remained structurally low at USD 2.3 million relative to trades in other regions. This is common for Sub-Saharan Africa, where TCX typically hedges more but smaller transactions. It is worth mentioning the relative stability of TCX's hedging volumes in the region, compared to the growth in other regions given the challenging market conditions in the region. External factors, such as geopolitical tensions and higher global interest rates, disproportionately impact Sub-Saharan Africa, markets' debt sustainability².

A noteworthy difference between this year's and last year's hedging volumes in the region is the significant increase in the relative share of deals in the infrastructure, energy and other non-financial sectors in Sub-Saharan Africa. The non-financial sectors represent roughly 32% of total activity in Sub-Saharan Africa, with most (>USD 80 million) going to energy and infrastructure projects.

Regional split 2023 hedging volumes

— % of total 2023 hedging volume



² Africa's Macroeconomic Performance and Outlook - January 2024.

P1
Indicator 1

Volume of new transactions

BY SECTOR

Similar to last year, 86% of total hedged development loans went to financial institutions. Nearly half of this (USD 958 million) was related to investments into microfinance vehicles. Microfinance and SME finance are traditionally key sectors of TCX, and both continue to account for a significant part of our annual volumes. Especially in Europe and Central Asia, where the two sectors combined represent over USD 600 million in hedging volumes in 2023.

As mentioned before, energy and infrastructure sectors represented relatively large volumes in Sub-Saharan Africa. After hedging the first loan in the public sector in 2022, TCX hedged USD 122 million in public sector loans for borrowers in Paraguay and Ukraine in 2023. This represents 5% of total volumes for 2023. As debt sustainability issues persist for public borrowers, TCX intensifies its efforts to scale up hedging availability in this sector.



3 [OECD DAC List](#).

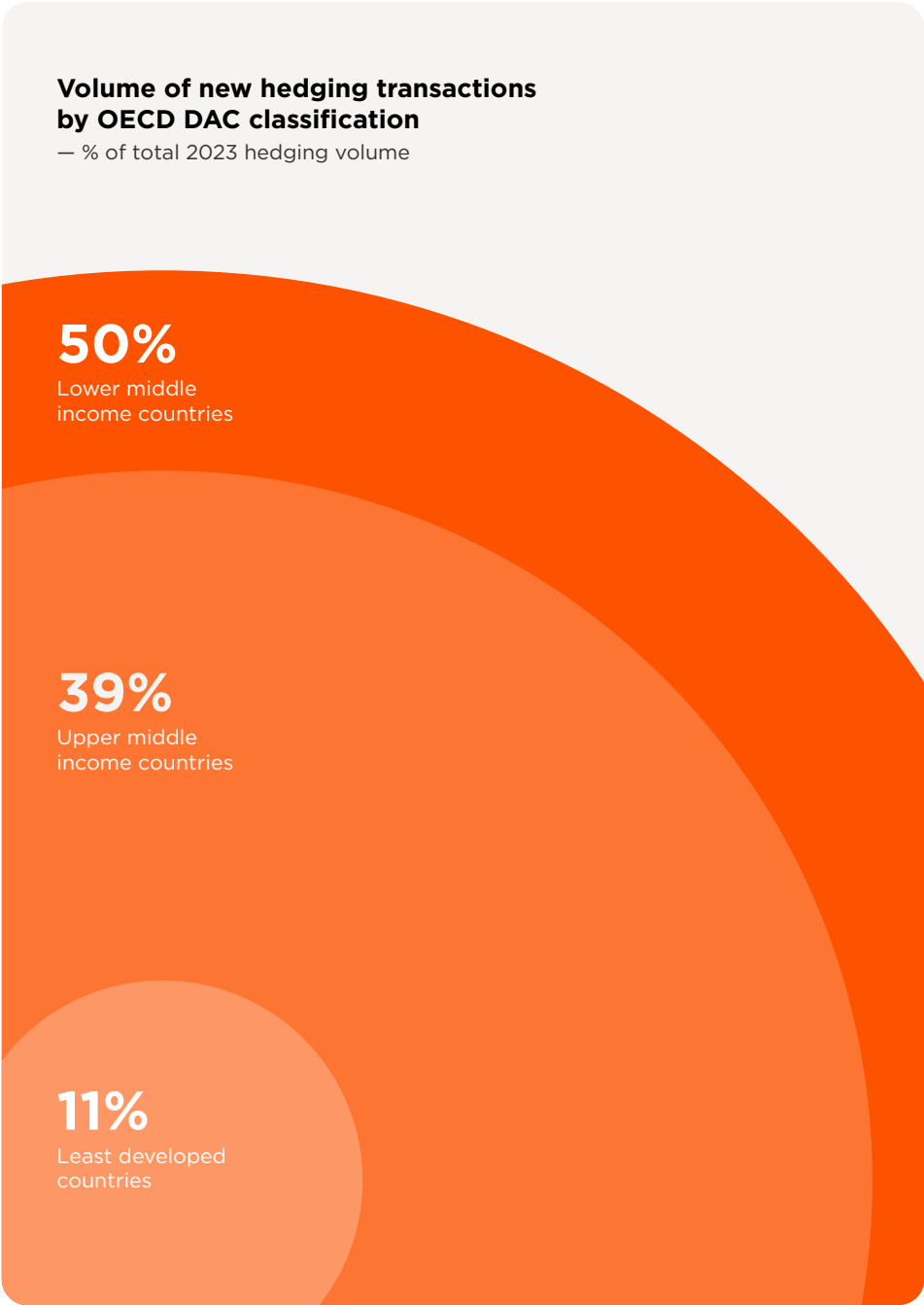
P1
Indicator 1

Volume of new transactions

BY OECD DAC CLASSIFICATION

TCX de-risks only to benefit countries on the *OECD DAC List of ODA Recipients*³. This list classifies countries based on income status and categorizes countries eligible to receive Official Development Assistance (ODA) as least developed country, low income country, lower-middle income country or upper-middle income country.

In 2023, TCX hedged the currency risk of lending to 32 lower and lower-middle income countries for a total volume of USD 1.4 billion, or 61% of TCX total hedging activity in 2023. The remaining 39% benefitted lenders in upper middle income countries – a slight increase compared to 2022.



P1

Indicator 1

Volume of new transactions

IN IDA COUNTRIES

The International Development Association (IDA) is the part of the World Bank that helps low-income countries with longer dated funding. IDA is one of the largest sources of assistance for the world’s 75 low-income countries and is the largest source of donor funds for basic social services in these countries. Following the IDA23 country list, TCX hedged USD 782 million, or 34% of total hedging volume for loans to IDA-eligible countries.



Call-out Box 2

Blending to reduce the cost of hedging

TCX and the European Commission

As a development finance initiative, TCX applies risk-reflective pricing to determine the cost of hedging, meaning our swaps are priced in accordance with the currency risk that is present in a market. TCX works in developing countries with currencies that are often vulnerable to external shocks – markets where this risk is relatively high.

When a country is highly vulnerable to geopolitical or macroeconomic shocks, financing free from FX risk can be relatively expensive and, in certain cases, unaffordable for borrowers. This is most often the case in least developed countries, where international development lending is arguably most needed. However, their nascency often means that businesses or public borrowers cannot protect themselves against the impact of currency depreciation on their US dollar debt repayment costs.

With support from a (limited) return guarantee provided by the European Commission through the European Fund for Sustainable Development, TCX established the EU Market Creation Pricing Facility (the Facility). As the first and largest blending platform of its kind, the Facility allows TCX to incentivize FX risk mitigation in development



Funded by the European Union

finance by reducing the cost of currency hedging products for specific countries and target sectors in line with the EC’s priorities. Lowering the price of currency risk can be especially meaningful in those markets where macroeconomic risks push the cost of FX risk protection to unattainable heights. In particular, the Facility is utilized for financing to reduce energy poverty.

The Facility has thus far enabled TCX to reduce the cost of currency hedging for loans to (micro)financial institutions in Azerbaijan, Cameroon, Madagascar, Malawi, Moldova and Sierra Leone.

By reducing the (indexed) local currency rate to an affordable level, the Facility enables lenders that work with TCX to structure more FX risk-free, financially resilient lending transactions in favor of sustainable development.

Last year, TCX teamed up with KfW and EDFI MC to add blended capital to reduce pricing under the EFSD+, which granted an additional financial guarantee to TCX.

For more information on the Pricing Facility, please reach out to Sara Velco.



P1 Indicator 2

Difficulty of Hedge score
OF NEW TRANSACTIONS

The average Difficulty of Hedge score of 2023 transactions is 6.6, down from 7.5 in 2022. This score reflects the relative ‘difficulty’ of the currency-tenor combinations traded in 2023.

The lower average Difficulty of Hedge scores indicate that TCX hedged a larger number of transactions in countries with more liquid currency risk markets. For example, Asia’s considerable decline from last year can be explained by higher volume and number of trades in the Indian rupee.

Compared to other countries in which TCX is active, India has a relatively developed currency risk market. An average trade in the rupee therefore yields a lower Difficulty of Hedge score. In India and similar markets, TCX is additional by providing longer tenors or more liquidity when there is demand that is not being met.

Europe and Central Asia and MENA markets are the regions in which TCX was most active in relatively more challenging currencies and at longer tenors. TCX works in markets with different levels of hedging availability. See the case study on [page 30](#) for a deeper dive into TCX’s approach to different markets.

See [page 7](#) of the report for more detail on the Difficulty of Hedge.

Difficulty of Hedge: 2023 2022

2023 hedging volume
— USD millions





P1 Indicator 3

Joint Impact Model estimates of underlying impact

TCX is not a lender but does attempt to estimate the anticipated development impact of loans that are hedged. The impact of projects TCX hedges is attributable to lenders, but TCX contributes to the financial resilience of borrowers and projects as we remove the negative impact of local currency depreciations. We therefore estimate TCX's indirect impact.

TCX uses the *Joint Impact Model* ⁴ to estimate the anticipated development impact in a consistent and comparable way across all lenders that we work with. The model estimates the indirect impact of a portfolio of investments in developing countries using input data on the sector, country, and investment amount. TCX applies the JIM to estimate, on an ex-post basis, the anticipated impact of the USD 2.29 billion of financing flows for which we provided hedging solutions in 2023.

Note that the results are calculated using economic modelling and do not represent actual figures. They are estimates and should be interpreted as such. TCX does not apply JIM to inform decision-making ex ante.

Anticipated development impact of loans hedged by TCX in 2023

Employment Creation

Female jobs



45.1k

Male jobs



59.5k

Total jobs



104.6k

Value Added — USD Millions

Salaries



\$367.3

Profits



\$466.7

Taxes



\$149.2

⁴ [Joint Impact Model](#).

Feature

Reducing FX Risk Exposure in the Public Debt Books

TCX is making a strategic effort to contribute to the financial resilience of public sector borrowers by hedging their exposure to currency risk, even in challenging markets. The Fund set up an internal taskforce of people with diverse expertise, ranging from pricing to structuring, research and macroeconomic policy. The taskforce engages with lenders and borrowers to increase awareness and understanding.

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There is increasing empirical evidence that currency risk is a major driver of debt vulnerabilities. Even countries with great macro policies and institutions are hit and impacted by external shocks that they cannot control. We have been engaging with the IMF on how they can account for currency risk instruments in IMF's Debt Sustainability Framework and build risk management capacities at Debt Management Offices. I believe that IMF's assessments should reward borrowers for proper risk management.

Harald Hirschhofer

OFFICE OF THE CEO



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The market is increasingly using tools to reduce FX risk on the balance sheets of public sector borrowers. In many emerging countries, local currency bond markets have deepened and domestic yield curves have lengthened. Others have even opened their capital markets to foreign investors. We also see increased issuance of Eurobonds that are denominated in local currency. At the same time, there is still a long way to go to sufficiently develop local capital markets and it remains out of reach for many lower developed countries. That is why TCX offers lenders and public sector borrowers a tool that protects them from FX risk and that is available right away, even for the most challenging markets.

Xander Goudriaan

TRADING



“

I believe that development lenders have a huge opportunity to improve the debt sustainability of emerging and frontier countries. This starts with increasing borrower understanding of FX risk and encouraging proper risk thinking. I'm sure this will lead to increased demand for local currency financing and hedging solutions over time. Lenders should be in the driver seat here by giving technical assistance focused on currency risk management and proactively offering countries a choice to borrow in their local currency.

Sophie Peeters

OFFICE OF THE CEO



Feature

“

An increasing number of Debt Management Offices that we meet with wants to develop a more comprehensive approach towards risk management and a long-term view on debt and FX reserve management. While there is still a long way to go in terms of knowledge building, It is encouraging to see several interested in exploring long-term hedging solutions, which is where TCX can make a meaningful difference.

Jerome Pirouz

SALES & STRUCTURING



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We encourage every Debt Management Office to ask for a loan conversion clause to be embedded in new loan agreements. It is a very powerful feature to support conversions of hard currency loans into local currency obligations at any point during the lifetime of the loan when, from a pricing and risk management perspective, the borrower prefers protection from FX risk.

Bert van Lier

SALES & STRUCTURING



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Empirical evidence is increasingly pointing towards local currency lending as a fundamental cornerstone for economic sustainability in emerging and frontier markets. Hedging hard currency debt, critical for mitigating FX risk and granting access to local markets, is gaining momentum. We have hedging tools ready for public sector borrowers urgently needing solutions to currency risk. I hope those will be employed at scale to benefit debt sustainability.

Fizo Haddad

RESEARCH



For questions about hedging public sector financing, please contact
Sophie Peeters.



Pillar 2

Mobilizing the private sector

As depicted in the visual representation of TCX's impact pillars on [page 5](#), TCX on-sells part of the exposure on its balance sheet to private investors.

By hedging development finance loans, TCX takes on its balance sheet the risk of a wide variety of currencies and manages the exposure for the entire loan tenor. Over the years, private investor interest – predominantly pension funds, family offices and other asset managers – in frontier currency risk is growing.

Given the higher credit risks of issuers in frontier markets, investors currently often refrain from buying local currency assets in the domestic markets. However, TCX has increasingly succeeded in mobilizing private investor capital to invest in currency risk.

TCX matches the growing demand by on-selling some of its own currency risk exposure to investors, transferring it from its balance sheet. We do this in two ways:

1. By hedging local currency bonds issued by triple A-rated development finance institutions—a 'market creating' activity in support of local capital market development (see [Call-out Box 3](#)).
2. By direct risk transfers to commercial parties through derivative transactions.

By netting flows in specific currencies, TCX can manage and reduce its net exposure in currencies for which there is relatively more hedging demand. On-selling certain exposure to institutional investors frees up capacity in TCX's book to support more hedging in the same currency. This keeps the currency portfolio in balance and allows TCX to make even more efficient use of its USD 1.4 billion capital base.

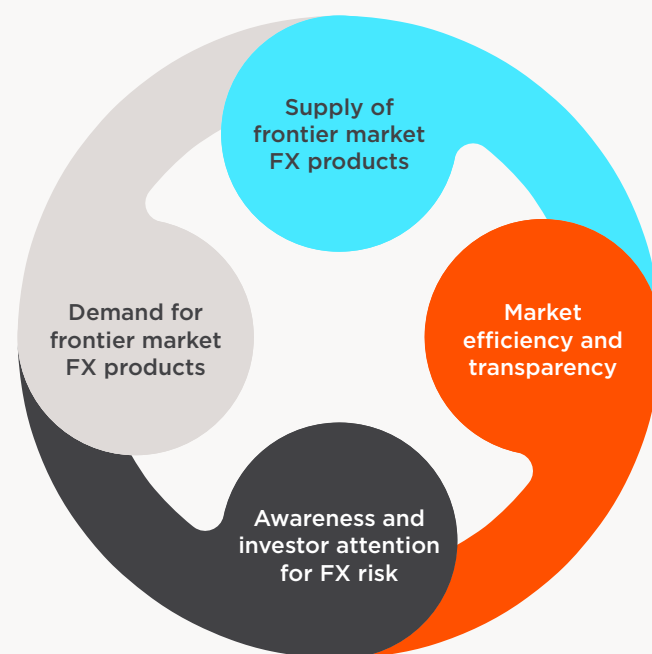
Importantly, TCX's hedging activities of bond issuances in frontier currencies are intended to have a snowball effect on offshore and onshore capital market development.





From TCX's Theory of Change

The development of financial markets requires the establishment of financial instruments, regulatory and legal frameworks, market infrastructure, including price transparency, and a critical mass of trusted market participants. When all these elements come together, they can create a '*virtuous circle*', whereby investment fuels investment and success fuels success. (Of course, the opposite is also true.)



TCX's participation in under-developed FX and bond markets contributes to the development of such virtuous circles by providing price transparency, innovative pricing models and demonstration effects, by increasing (primary) market liquidity and by deepening the investor base.

Call-out Box 3

A unique offering

Bonds carrying frontier currency risk & investment grade credit risk

Currency risk is a major cost factor and its efficient management and mitigation can catalyze important private sector flows. TCX mobilizes private investor interest for frontier currencies by hedging off-shore local currency bonds issued by its triple-A rated shareholders and other development lenders. For example, TCX played a pivotal role in facilitating the issuance and subsequent hedging of Tanzanian shilling (TZS)-denominated bonds (equivalent to USD 34 million) with TCX shareholder FMO and other lenders. The bonds were placed with international investors seeking portfolio diversification and yield.

Under this structure, TCX facilitates market creation and allows bond investors to acquire e.g, FMO's triple-A rated notes with a coupon that mirrors the higher risk exposure. The combination of investment

grade creditworthiness with the risk and return attributes of a frontier market currency creates an innovative asset class for which there is clear demand from global investors. Ultimately, issuing this note mobilizes international capital to take on FX risk that originated from a development loan to a Tanzanian borrower. TCX thereby helps draw private capital into frontier-market risk products. Furthermore, these transactions enable TCX to free up its risk-exposure to TZS and in turn support more sustainable local currency lending in local currency.

From 2013 until the end of 2023, TCX hedged 250 placements of frontier currency denominated bonds in the institutional market in 35 frontier currencies for a total USD 2.3 billion.

P2 Indicator 1

Volume of new frontier-market currency bond transactions

BY GEOGRAPHY

TCX interacts closely with the market to sell some of the frontier market currency exposure TCX currently has on its balance sheet to private investors. In 2023, TCX on-sold USD 1.49 billion frontier market currency risk, which is 80% more than in 2022. Nearly half of this – USD 512 million – was transferred to private investors through the issuance of 44 local currency bonds in 12 currencies by TCX’s triple A and double A-rated shareholders, such as IFC and FMO.

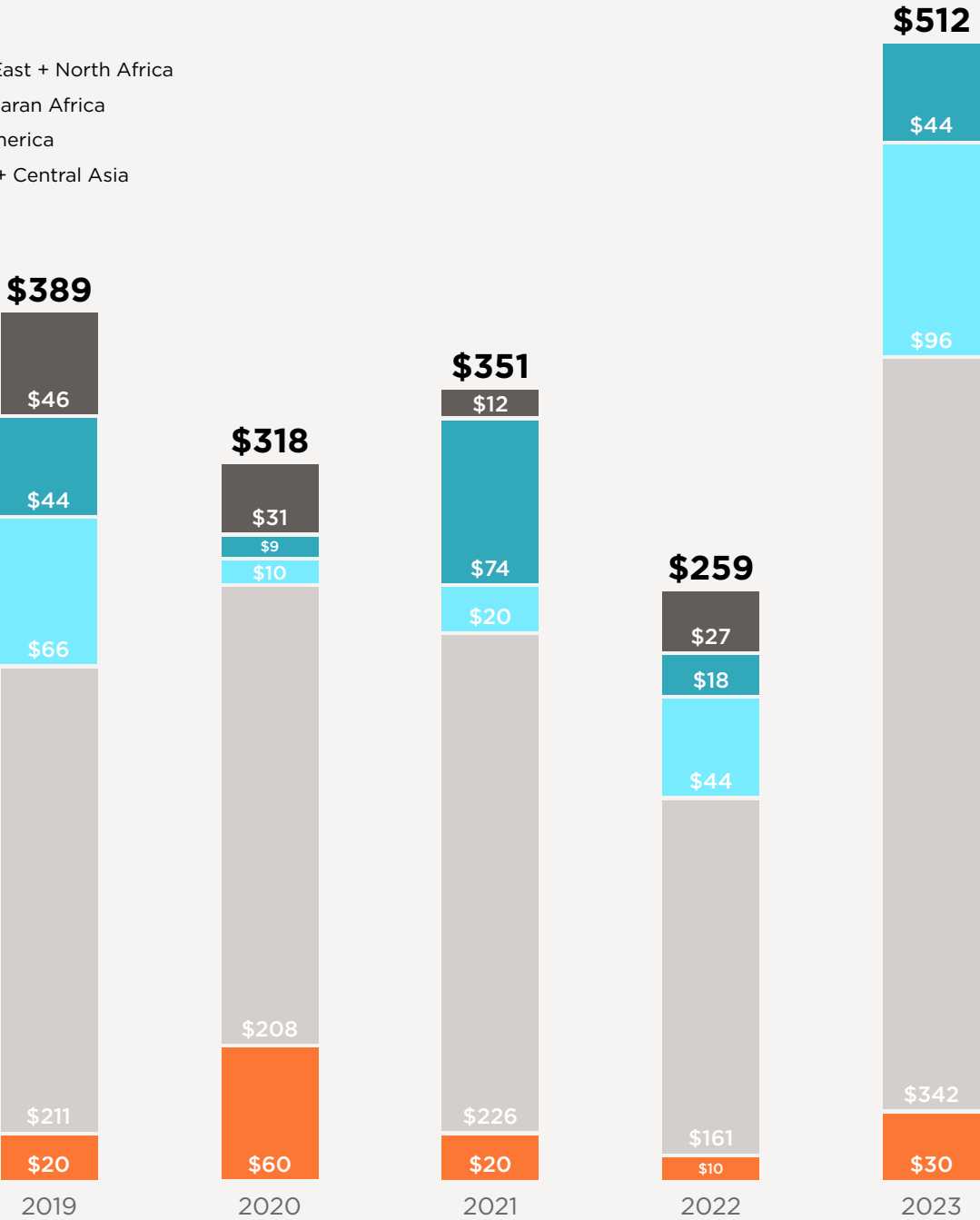
The other 66% occurred through direct transactions with counterparties interested in buying exposure to specific currencies and tenor.

As of the end of 2023, TCX on-sold **USD 5.8** billion of frontier market currency risk to private investors. This represents around 40% of TCX’s total hedging volume since inception. Since 2013, TCX on-sold USD 2.3 billion through bond issuances and USD 3.5 through direct transactions.

The graph shows a relatively similar regional distribution as last year, with two-thirds of total volume from bond issuances in **European and Central Asian** currencies.

Volume of frontier-market currency bond hedges over the last 5 years
— USD Millions

- Middle East + North Africa
- Sub-Saharan Africa
- Latin America
- Europe + Central Asia
- Asia



	2019	2020	2021	2022	2023
Bangladesh				5	
Myanmar	15	45	20	5	
Sri Lanka	5				
Vietnam		15			30
Armenia	27	15			
Azerbaijan		10		43	75
Georgia	38	49	89		9
Kyrgyzstan	25	22	5	13	48
Moldova			10		
Mongolia				12	
Serbia			9		
Tajikistan	5	23	37	30	86
Ukraine	58		9		
Uzbekistan	58	90	77	53	124
Argentina				2	
Bolivia	5		10		
Costa Rica					5
Dom. Republic	5		10		
Guatemala	9			32	7
Haiti	17		10		
Honduras	31	10			
Jamaica					51
Paraguay					33
Benin	7	9	13		
Botswana					10
Burkina Faso	19				
DR of Congo			20		
Kenya			15		
Sierra Leone				13	
Tanzania	18		25	5	34
Algeria		13		27	
Lebanon	30				
Tunisia	16	18	12		

Volumes in **Latin America** increased with 86% due to large bond offerings in Jamaica and Paraguay and continued interest from private investors in exposure to especially the Costa Rican colón and Guatemalan quetzal.

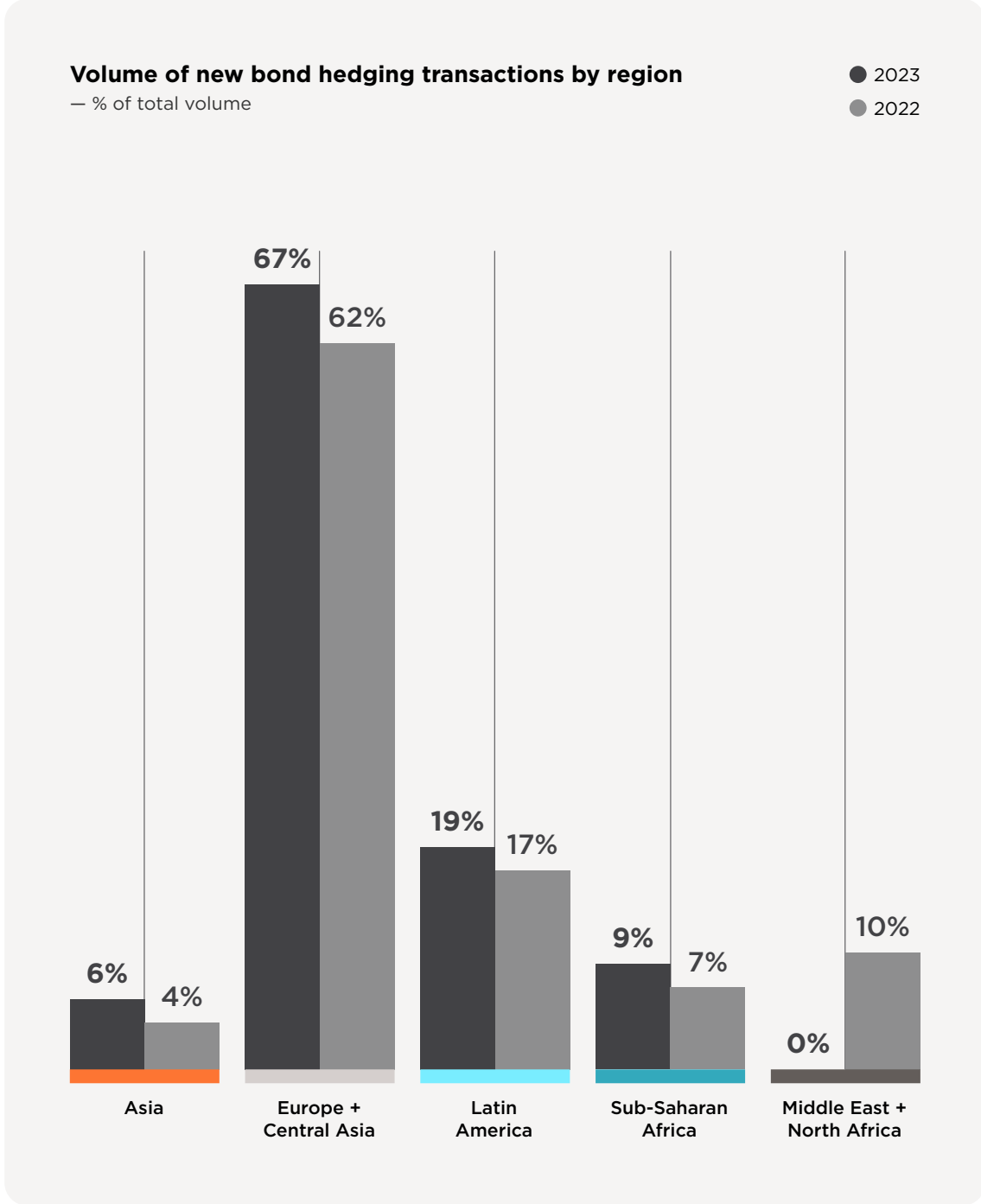
For Jamaica, we hedged bonds issued by IFC and FMO with relatively longer tenors of 4.5 years and 3 years, respectively. These helped set an offshore local currency benchmark for bonds with relatively longer tenors for frontier markets. Interestingly, the government of Jamaica ended up issuing an offshore bond later in the year—its first ever Jamaican dollar-linked instrument launched in the international capital markets.

For Paraguay, TCX hedged a bond issued by FMO—their first bond issued in Paraguayan guarani— which freed up capacity for TCX’s exposure to the currency. This allowed us to hedge TCX’s largest transaction to date only a few weeks later: a USD 100 million loan to the government of Paraguay.

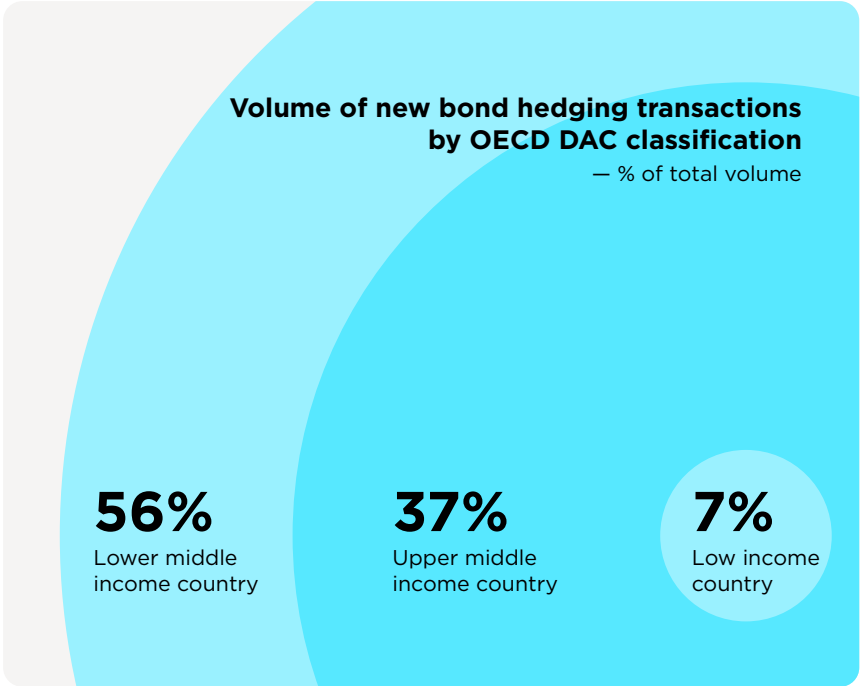
In **Asia**, TCX offset USD 105 million exposure in the Vietnamese dong through 3 bonds totaling USD 30 million and USD 75 million through direct on-selling.

TCX on sold 13.5% more of its exposure in **Sub-Saharan African** currencies compared to 2022. Noteworthy is the USD 44 million of currency risk in Tanzanian shilling and the Botswanan pula that we hedged through bond issuances, mobilizing private capital for these currencies.

In the **Middle East and North Africa** region, TCX focused on offsetting opportunities via commercial banks, with only one note issuance, as structures and pricing were more conducive for offsetting through non-deliverable forwards.



Compared to 2022, all regions except for MENA increased both in absolute and relative terms of total bond hedging volume. More than two-thirds of bonds hedged by TCX involved currencies from Europe and Central Asia.



56% of bonds hedged by TCX in 2023 involved Lower Middle Income Country currencies, such as Uzbekistan (USD 124 million), Tajikistan (USD 86 million) and Kyrgyzstan (48 million). Volumes in Upper Middle Income Countries Azerbaijan (USD 75 million) and Jamaica (USD 51 million) are the main driver for the 37% share of this category.

P2

Indicator 2

Number of new frontier-market currency bond issuances

In 2023, TCX hedged its first bonds in three new currencies in 2023:



Such first-time offshore bond issuances have an important effect on the development of offshore and onshore capital (risk) markets. TCX and its partners successfully demonstrate that there is demand for frontier-market currency risk, and that the offshore route allows TCX to create right conditions in place for private investors to absorb currency risks of development loans.

P2

Indicator 3

Difficulty of Hedge score

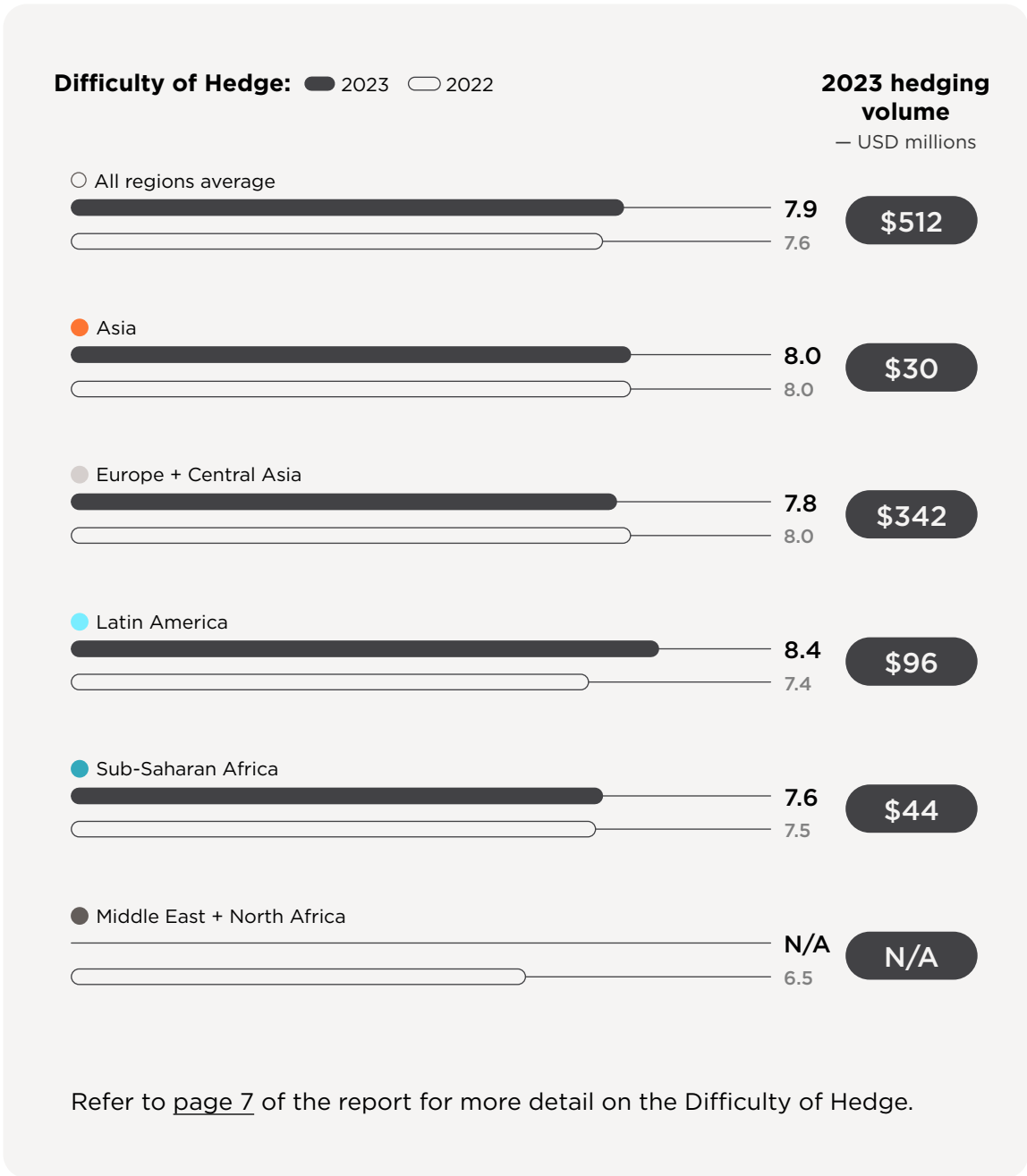
OF NEW FRONTIER-MARKET BOND ISSUANCES

Although all of TCX’s activity results from a lack of commercial hedging availability, we self-measure the relative additionality of our market developing transactions by means of the “Difficulty of Hedge” score (See [page 7](#) for details).

Contrary to the Difficulty of Hedge scores under pillar 1, the Difficulty of Hedge score for TCX’s hedging activity related to bond issuances shows a slight increase from 7.6 in 2022 to 7.9 in 2023. This increase can be attributed in large part to deals in Jamaica, which has an average Difficulty of Hedge of 9, and the large number (15) of deals in Kyrgyzstan and Tajikistan, both averaging a Difficulty of Hedge of 8.

Only the Europe and Central Asia region shows a relative decline, driven by deals in Azerbaijan and Uzbekistan, which average Difficulty of Hedge scores of respectively 7.8 and 7.3. The lowest recorded Difficulty of Hedge score for 2023 – a score of 6 – occurs four times in the scoring list for hedged bonds in Uzbek som, Tanzanian shilling and Azerbaijani manat due to shorter tenors.

Overall, the slight increase in the scoring across the board signal a growing appetite from private investors to allocate capital to relatively more frontier currency-tenor combinations.



Feature

How FX Risk Mitigation Enables the Energy Transition for Households in Uzbekistan



TBC BANK

In 2021, Uzbekistan released its plans to fully decarbonize its power generation sector by 2050. Achieving this will require the generation of additional renewable (clean) energy, but also the reduction of energy usage by high-emitting sectors. The Carbon Neutrality Roadmap of Uzbekistan's Electricity Sector policy document⁵ outlines the need for vast investment capital to achieve Uzbekistan's sustainability targets—an annual amount that is higher than what domestic investors can provide. Therefore, external lenders play a critical role in financing the country's transition.

Most development finance providers lend only in US dollar (USD) or euro. Such financing exposes Uzbek borrowers with assets in Uzbek som (UZS) to currency risk stemming from fluctuations of the UZS exchange rate vis-à-vis the USD. At the end of 2023, TCX hedged an energy-efficiency loan from the Global Climate Partnership Fund (GCPF) to Georgian TBC Bank's Uzbek subsidiary (TBC UZ), protecting TBC UZ from currency risk and contributing to development impact.

⁵ A Carbon Neutral Electricity Sector in Uzbekistan - Ministry of Energy.

Feature

GCPF’s investment in TBC UZ

The overall energy intensity of Uzbekistan’s GDP is one of the highest in the region and nearly double the world average⁶. The residential sector – with nearly 40% of total demand – represents the largest share of annual energy demand. This is considerably higher than the 27% EU average², which can in part be explained by the energy inefficiency of household appliances such as washing machines, refrigerators, air conditioning and other white goods.

Transitioning the residential sectors requires ability to reach local residents at mass and stimulate the purchase of energy efficient (A+ label) white goods.

In December 2023, TCX hedged a loan from GCPF to TBC UZ. With the proceeds from the USD 5 million dollar loan, the digital bank uses its national reach to provide lines of credit to retail clients within Uzbekistan to stimulate consumers to invest in energy saving residential appliances.

6 Figures from: [Uzbekistan energy profile – Analysis](#) - IEA and EU average: [Energy consumption in households](#) - EU.

To ensure the intended impact of the intervention, GCPF developed a list of white goods that are eligible for the credit. The list includes appliances that generate at least a 20% energy efficiency improvement compared to the average current appliance in its category. Customers of TBC UZ that choose to invest in new household appliances can apply for loans or installments if the product they intend to buy is on the list of eligible goods. The conditional credit access stimulates the uptake of newer, cleaner appliances.

TCX’s involvement in this transaction helps TBC UZ avoid a ‘currency mismatch’ on its balance sheet. Without a currency hedge, TBC UZ would have to repay the USD loan provided by GCPF while receiving payments from customers in UZS. Instead, the 3-year cross-currency swap provided by TCX transfers the currency risk to TCX. TBC UZ’s repayment in USD is tied to the UZS rate. In case the UZS depreciates over the duration of the swap, TCX compensates GCPF for the lower USD amount it receives from TBC UZ that are required for TBC UZ to fully repay its loan.

USD NOTIONAL AMOUNT	COUNTERPARTY	Hedging transaction details
10 million	the Global Climate Partnership Fund	
CURRENCY OF RISK	SECTOR	
UZS	Household Energy Efficiency	
TENOR	OBJECTIVE	
3 years	Energy efficiency in household equipment and technology	

Often, hedging is a prerequisite for a transaction to materialize for GCPF and other lenders, as Ana Akubardia (Investment Officer, Climate Finance FI at GCPF) describes:

“As lenders of long-term credit facilities, we don’t want to create any kind of foreign currency mismatch for our investees. At the same time, we cannot take the risk of deliverable lending ourselves. Thus, TCX was a critical player in the transaction, and without it the transaction would have hardly materialized.”

Indexed local currency finance makes debt service repayments stable and predictable for the bank and strengthens its ability to continue serving its retail clientele in Uzbekistan. Generally speaking, TCX is additional in the swap market for UZS in maturities of 1 year or more.

Feature

“

In many markets, projects in the energy sector are still heavily financed in hard currency. This means that, especially in the residential energy sector which serves to households, the cost of currency devaluation is often borne by the end users. Therefore, in order to mitigate the additional cost burden for the households, as well as to help local financiers to manage foreign exchange volatility, providing local currency financing to the sector is crucial. The Uzbek som transaction we executed with GCPF plays a vital role for both the banking sector and the energy sector in Uzbekistan in terms of currency risk management and market stability.



Elif Erkul

STRUCTURING & SALES
TCX

“

The credit agreement marks a significant milestone in the expansion of TBC's operations in Uzbekistan. It enables the bank to accelerate its growth within the country and offer a broad range of innovative and accessible products to the population. It represents a commitment to integrating green financing into the bank's digital banking strategy in Uzbekistan. A noteworthy aspect of this agreement is the provision of financing in the national currency, underscoring support for the local economy and its growth.



David Gabelashvili

CHIEF FINANCIAL OFFICER
TBC UZ

“

Uzbekistan represents one of our strategic countries, which carries ample potential for climate mitigation investment opportunities. We are glad to have partnered with the country's leading digital bank with the green facility targeted to promote energy-efficient technologies for the bank's retail borrowers. TCX has been a key strategic partner for the fund. In markets that are especially characterized by volatility, hedging prices may fluctuate throughout the year. Especially for the Uzbek som, which is one of the most tricky currencies we work in, having a pulse on where the market is going is invaluable. TCX's expertise, proactivity in notifying changing market conditions and working together with us to find the best fitting solution enables GCPF to do its work in the best way possible while mitigating risks for ourselves and the borrower.



Ana Akubardia

INVESTMENT OFFICER
CLIMATE FINANCE FI AT GCPF



About GCPF

The GCPF, managed by responsAbility Investments AG, is a Luxembourg-based fund established in 2009 by entities including the German Federal Ministry for the Environment, KfW, and the International Finance Corporation. As a leading public-private partnership that was assigned the right to use TCX by shared shareholder KfW⁷, the GCPF is dedicated to mitigating climate change in emerging and developing markets by financing projects that enhance energy efficiency and renewable energy. The Fund specifically targets initiatives that not only promise significant energy savings but also aim for at least a 20% reduction in projected greenhouse gas emissions.

7 TCX utilizes the legal assignment mechanism to enable other funds, clients and strategic partners of TCX's shareholders to use TCX's services. This helps make FX risk mitigation products available to a deeper pool of impact investors and funds focused on achieving the SDGs.

Pillar 3

TCX Advocacy: increasing awareness and understanding of currency risk

Attention for currency risk and TCX was higher than ever in 2023. It was a key topic at the G20, COP28, the Summit for a New Global Financing Pact, the UN GA Private Capital Mobilization Roundtable and other key events.

TCX supported an IMF survey among 30+ sovereign Debt Management Offices (DMOs). The survey results show a strong need for capacity development as the majority of DMOs does not and is not able to identify, manage and quantify currency risk exposure, conduct stress tests, and lack adequate currency risk policies.

Our role during global policy fora is to provide a pragmatic and informed perspective on improving the management of currency risk in the context of development finance at large,

and to advocate for TCX as a scalable facility to provide synthetic local currency financing.

In essence, TCX believes that borrowers in emerging and frontier markets should not be the ones taking on exposure to currency risk. Multilateral and bilateral DFIs do not want to carry and manage the exposure and therefore collaborate with TCX to pass through the risk.

In 2023, TCX developed a '[Roadmap to Financial Resilience](#)' that proposes policy actions to significantly increase the supply and demand of currency risk solutions, making borrowers more financially resilient and thus more attractive for private finance. Increasing TCX's capital base is a key proposal so that we can scale up hedging for private and public sector borrowers across emerging and frontier markets, including IDA countries.





TCX distributed its Roadmap in advance of UN Climate Week, which provided a platform to interact with global leaders from the public and private sectors. Tackling currency risk requires coordinated action from donors, MDBs, DFIs and borrowers. Beyond 2023, TCX continues to serve its purpose as an expert organization and scalable vehicle in the dialogue leading up to a sustainable solution. Our key proposals:

- 1. Lenders and donor governments should prioritize strengthening currency risk awareness** and management capacities among borrowers in low-income countries. Dedicated technical assistance and capacity building efforts at Debt Management Offices and central banks is needed to achieve this.
- 2. MDBs should actively offer borrowers the option to borrow in (indexed) local currency** in addition to traditional hard currency. This encourages risk-thinking.
- 3. TCX can increase its role as market catalyst** and facilitate more demand for hedging by scaling up the capital base and expanding the scope of TCX's product offering. There is also an important role for MIGA with respect to expanding transfer, convertibility and counterparty risk insurance.

In Volume 2 of the *Triple Agenda: a Roadmap for Better, Bolder and Bigger MDBs*, commissioned by the Indian G20 presidency and written by the Independent Expert Group of the G20⁸, TCX is recognized as a scalable offshore hedging mechanism to accommodate MDB and other financial flows.

Under the Brazilian G20 presidency in 2024, the International Financial Architecture Working Group focuses on financial architecture reform for the 21st century and how to tackle growing debt risks. Currency risk is again identified as a key topic⁹ in making MDBs more *effective*, signaling continued discussion on the topic throughout the year. With debt sustainability issues persisting across frontier markets, TCX will continue to advocate for MDBs to place currency risk with actors best fit to bear it.



⁸ The Triple Agenda: Independent Expert Group (IEG) Report, Volume 2 - G20, 2023.

⁹ G20 Issue Note International Financial Architecture.

2023 Advocacy Highlights

TCX authored standalone reports, op-eds and articles in English, Dutch and French that were published by local and global news outlets. These are written with the intent to promote thought leadership around FX risk mitigation across sectors and regions, and to encourage policy action.

Media and publications

Date	Outlet	Title	
January 2023	Financial Times	It's the Currency, Stupid (part I)	View
April 2023	Financial Times	It's the Currency, Stupid (part II)	View
May 2023	CMD Portal	Frontier Currency Fixed Income: A Developing Asset Class	View
May 2023	TCX publications	Green Energy Projects in Africa	View
June 2023	Project Syndicate	Making Development Bank Lending Safe for Poor Countries	View
July 2023	Financieel Dagblad (in Dutch)	‘Macron-show’ zet Amsterdams valutafonds in the spotlights	View
September 2023	FMO Future Minded	Currency Affairs with Ruurd Brouwer	View
September 2023	TCX Publications	A Proposal to Mitigate Currency Risk at Scale and Mobilize Private Finance for Sustainable Development	View
October 2023	OECD Development Matters	Currency risk is stifling climate finance for developing countries. It should – and can – be mitigated	View
January 2024	FinDevLab	TCX^2 – SCALING UP LOCAL CURRENCY HEDGING	View
April 2024	Financial Times	Developing Countries’ DMOs are driving blind	View

Raising awareness and contributing to the public policy debate





Survey reports

During 2023, TCX partnered with Finance in Common, Making Finance Work for Africa (MFW4A) and others to conduct two surveys:



SEP 2023

The impact of FX risk on Public Development Banks' ability to reach SDG and to be sustainably resilient

TARGET AUDIENCE

Public Development Banks across Latin America and Africa

[View](#)

APR 2024

FX risk in the African banking sector: survey report

TARGET AUDIENCE

(Commercial) banks across Africa

[View](#)

PDBs and commercial banks play a vital role in the development finance ecosystem. The results of these surveys show that currency mismatches are frequent and that the banks are not always equipped to manage this risk effectively. Both surveys reveal the gap between the FX risk management banks currently have at disposal and reinforce our policy messages to scale up FX risk mitigation. Both reports contain policy recommendations to improve access to FX risk mitigation products for public and private financial institutions.

See this [one-pager](#), for a succinct overview of the results of both surveys.



P3 Indicator 1

Number of currencies in portfolio

At 2023 end, TCX's outstanding loan hedging portfolio constituted 51 different currencies from 58 different countries.

Since inception, the Fund has hedged in 66 different currencies in 73 different countries. In 2023, we hedged loans in 43 different currencies.

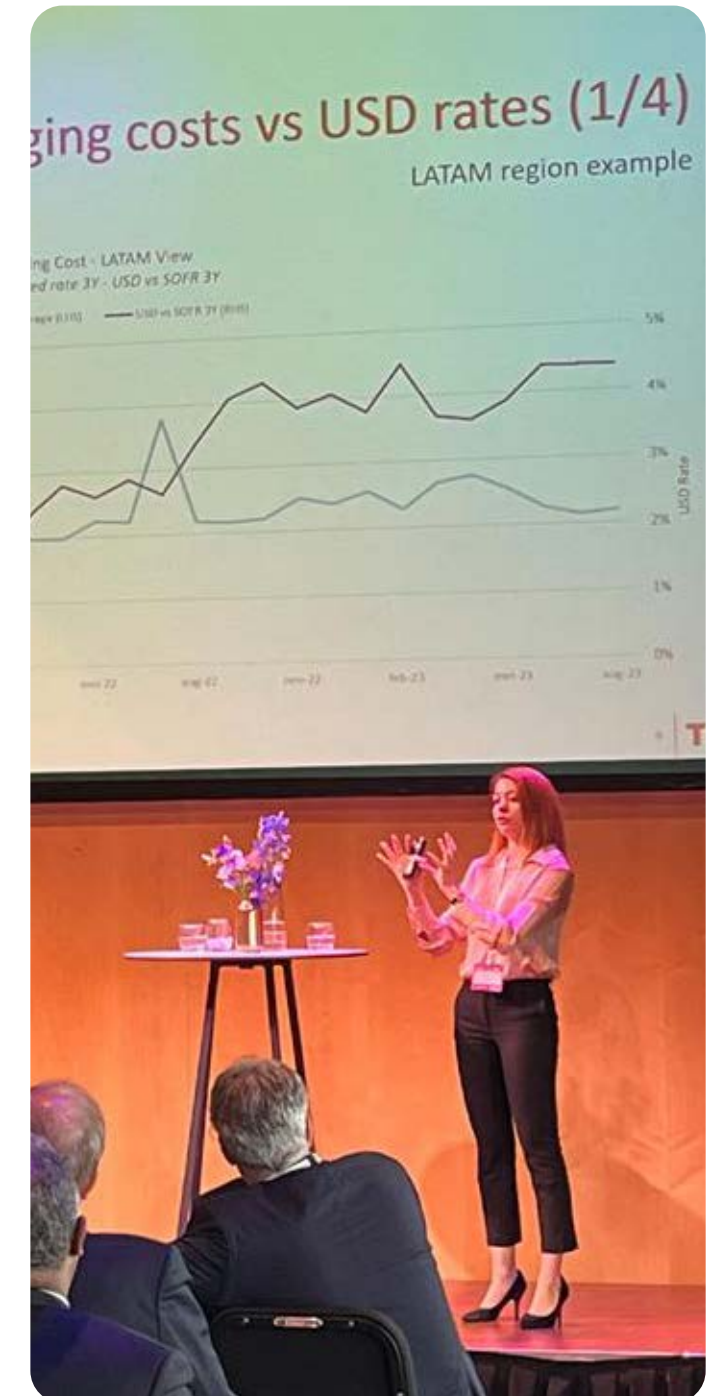
P3 Indicator 2

Number of currencies with no market data and for which a pricing model has been developed

As at 2023 end, TCX had developed 52 currency models of which 32 are currently active for pricing purposes. In 2023, such models were developed for the currencies of Iraq, South Sudan and Tunisia.

For those currencies where there is no market data available at all, TCX uses a model-based approach to determine pricing. *The Forecasting and Policy Analysis System (FPAS)* is a forecasting model covering currency and macroeconomic risks in the most frontier markets. TCX uses the outcomes of a tailored version of FPAS as input to its proprietary pricing model.

This pricing method was jointly developed with OGRsearch, a Czech-based research partner of TCX that develops an FPAS when we see demand for a specific currency. The number of currencies that TCX is able to price based on FPAS serves as an impact indicator for TCX's hedging capabilities in the most frontier markets. See the next section for a deep dive into TCX's role in different markets, and our collaboration with OGRsearch.



Feature

TCX's Additionality in Different Markets

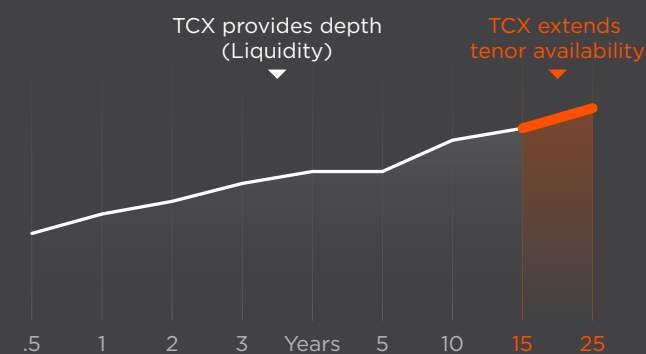
TCX was set up to help lenders and borrowers manage currency risk when other financial institutions are insufficiently or not at all able to hedge FX exposure in a specific currency or for a certain tenor. TCX offers hedging products in more than 110 countries and prices according to the principles of non-market distortion and non-speculation.

The role TCX plays in each market is – among other factors – largely based on the level of capital market development and the availability of commercial hedging. TCX distinguishes stages of offshore market development based on the degree of offshore hedging availability. Simply put, the more offshore hedging availability already exists in the market, the lower the additionality of TCX. In this example, excluding pegged currencies, we define 3 stages of hedging availability:

MARKETS WITH Full onshore hedging availability

TCX's role is mainly to provide access to hedging for clients that cannot access this otherwise. In some instances, TCX can improve hedging availability, meaning that TCX offers longer tenors than commercial parties currently provide and is a source of additional liquidity.

TCX is a price-taker.

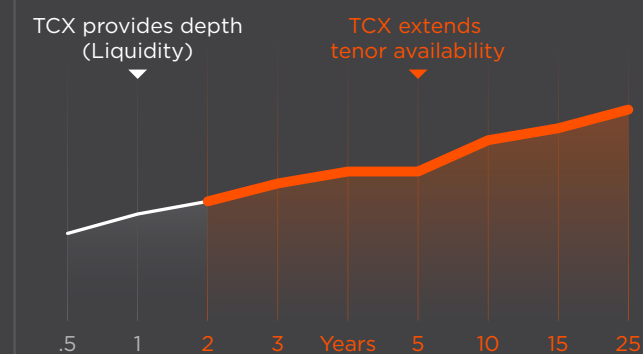


EXAMPLE MARKETS
India, Brazil, Indonesia

MARKETS WITH Limited offshore hedging availability

TCX's role is to assess the pricing currently available in the market and assess their competitiveness, deepen the liquidity pool and extend the maturity of available hedging options.

TCX prices based on a combination of factors, including: limited hedging levels available, macro fundamental outlook, local market knowledge.

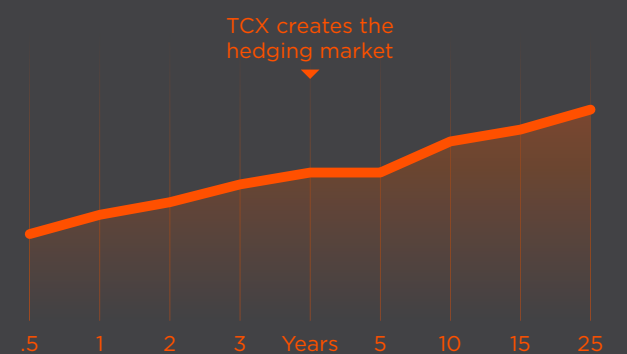


EXAMPLE MARKETS
Vietnam, Kenya, Dominican Republic

MARKETS WITH No hedging availability

TCX's role is to create the hedging market in accordance with market demand.

TCX prices based on macro fundamental outlook (predominantly FPAS).



EXAMPLE MARKETS
Iraq, Madagascar, Papua New Guinea

Feature



TCX's pricing in markets with little or no hedging availability and the role of OGResearch

Following the three categories, the offer and liquidity of available hedging products determine where TCX can be additional and how it prices hedging. TCX assumes a different role in, for example, Mexico and India – both countries with developed and liquid onshore hedging markets – than in frontier countries such as Tajikistan, Tanzania and Madagascar.

Markets that fall in categories 2 and 3 are where TCX fulfils its role as provider of currency risk solutions best and most often. Especially in markets that fall in category 3, the hedging market maturity is often such that basic information needed for a well-

functioning financial market is absent. Markets with full onshore hedging availability are categorized by 'perfect information availability'.

In markets with relatively limited or no hedging availability, TCX cannot rely on a benchmark to price its swaps and forwards. In order to be able to quote in every eligible currency, TCX works together with OGResearch – a research company from Prague – to build macro-fundamental analyses as a basis for pricing in markets where no benchmark rate or curve currently exists, such as in Nepal, Guinea and Ethiopia.

Graduating from category 3 **The case of Uzbekistan**

One of TCX's core missions is to stimulate and develop hedging markets for the currencies it is active in. TCX often starts as the only offshore hedge provider, usually leading to an increase in hedging interest from its clients, which then induces commercial financial institutions to also develop offshore hedging capabilities. As a result, the hedging market becomes more "liquid" and the curve lengthens, i.e., more market activity (capital) increases the available hedging capacity. TCX's offshore activity also indirectly contributes to the development of local, onshore hedging markets, deepening the market further. Since TCX's inception, we have witnessed several countries 'graduate' from category 3 as liquidity increases. Uzbekistan is a recent example of a market which moved from category 3 to category 2.

Feature

What is the FPAS?

The Forecasting and Policy Analysis System (FPAS) is a framework designed to collect, process and analyse economic information with a special emphasis on providing analysis and policy recommendations to policymakers to support monetary policy formulation¹⁰. In its essence, FPAS is a medium-term macroeconomic model from which GDP growth, inflation, interest rates, exchange rates and other macroeconomic indicators can be forecast. TCX and OGResearch used the FPAS logic to develop a custom pricing module, using the same inputs to inform macroeconomic and currency risks.

OG Research supplies TCX with FPAS analyses on scheduled and bespoke bases. An FPAS for a specific currency is then input for TCX's proprietary pricing model, which allows TCX to quote risk-reflective pricing even in countries where market data are scarce or lacking entirely. OGResearch's role in the context of TCX's business in these markets can therefore not be understated.



¹⁰ [Forecasting and Policy Analysis Systems - FPAS](#).

Interview with Jiri Lukac

SENIOR ECONOMIST
OGRESEARCH



About OGREsearch

“OGResearch is a Czech consultancy specializing in macroeconomic analysis, modelling, forecasting, and policy advice. Our core competencies include the development of custom-made macroeconomic modelling systems and applications, which are widely used by national central banks, international financial institutions, other professional forecasters, and academic researchers worldwide.

Among our direct and indirect customers are local country authorities (including central banks from Europe, Africa, Asia, and South America), international institutions (including EBRD, ECB, IMF, OECD, and United Nations), and development investment funds.”

How would you describe OGREsearch’s mission?

“We strive to engage in projects which reduce the systemic vulnerability of emerging markets to currency risk, promote the development of the local currency financial markets and reduce the extent of financial dollarization. We are recognized champions of implementing pre-emptive monetary and fiscal policies, which lead to more predictable and less volatile local interest rates, thus encouraging the development of domestic financial instruments.”

11 [Goal 17: Partnerships for the goals - The Global Goals.](#)

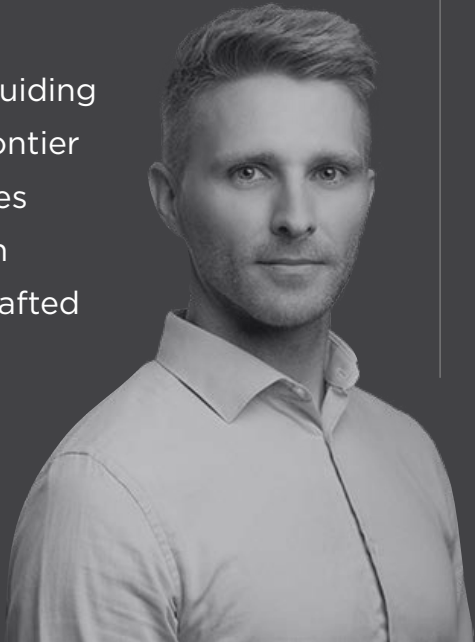
How do you view the relationship with TCX?

“OGResearch and TCX have distinct but complementary sets of skills. OGREsearch possesses the unique ability to synthesize fragmented information, weaving together a comprehensive understanding of frontier market economic landscapes.

In our symbiotic relationship, OGREsearch acts as a guiding compass for TCX amidst the unpredictable seas of frontier market development. The collaboration with TCX dates back to 2006, when both companies were pioneers in their respective fields. Since then, OGREsearch has crafted custom-made macroeconomic models for over thirty developing countries for TCX.”

Jiri Lukac

SENIOR ECONOMIST / OGRESEARCH



OGResearch and TCX

CREATING IMPACT THROUGH
CONNECTED INTELLIGENCE

The estimated amount annually required to finance the SDGs in emerging and frontier markets is growing each year. While capital to finance sustainable development is mobilizing, the riskiness emerging and frontier markets continue to defray public and private investors from making transformative bets on clean energy, infrastructure and other critical sectors. TCX and OGREsearch’s collaboration represents a true example of partnerships for the goals (SDG 17)¹¹.

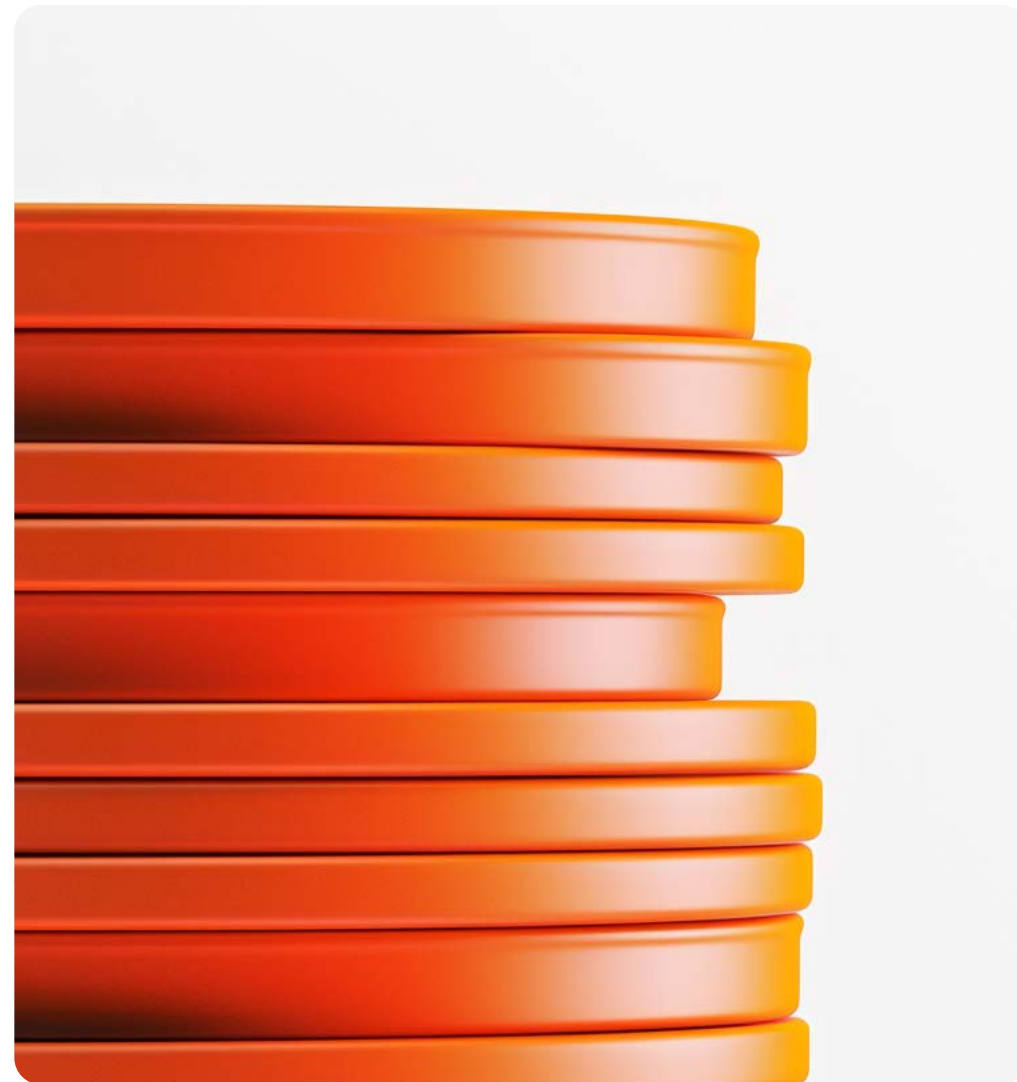


Jos Kramer
RESEARCH / TCX



“For TCX, having a local benchmark as an input to price its hedging products is essential. In frontier markets, however, the local financial market is often in an early stage of development, meaning that such a benchmark is not available or available only for the shortest tenors. Still, these

are exactly the markets where TCX is most needed, given the lack of alternative hedging possibilities, and where it can make the biggest impact. So having FPAS-based pricing in place is crucial for TCX in fulfilling its additionality mandate and we are grateful for the cooperation with OGREsearch.”



Disclaimer

The Currency Exchange Fund N.V. (“TCX” or “the Fund”) is an Alternative Investment Fund within the meaning of article 4:1 of the European Alternative Investment Fund Managers Directive. It is based in Amsterdam, The Netherlands, and is open to Professional Investors only.

TCX’s fund manager is TCX Investment Management Company B.V. (“TIM”), a company based in Amsterdam, The Netherlands, that is licensed as an Alternative Investment Fund Manager by the Financial Markets Authority of The Netherlands.

Our [Privacy Statement](#) provides information about the way we protect and process any personal data contained in this report.

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Investments in TCX by EU-based entities are only allowed from the moment TIM has obtained a marketing passport for the EU Member State in which the investor is residing, following the procedures as laid down in the AIFM Directive. Similar rules may exist in countries outside the EU, which may restrict the ability of investors residing in these countries to invest in TCX.

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Building a **global**
solution for **currency risk**

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