ISSN 2789-3308

ECONOMIC REVIEW

National Bank of the Republic of Kazakhstan

№ 2, 2023

NATIONAL BANK OF KAZAKHSTAN

ECONOMIC REVIEW
National Bank of the Republic of Kazakhstan

Published by: National Bank of the Republic of Kazakhstan

Editorial Board

Chairperson of the Editorial Board

Deputy Governor of the National Bank Tutushkin V.A.

Editorial Board Members:

Head, Monetary Policy Department

Head, Financial Stability and Research Department

Head, Balance of Payments Department

Head, Monetary Operations Department

Head, Department of the Development of Financial Organizations

Person responsible for releasing the publication – a staff of the Research and Analytics Center

The point of view and opinions of the authors do not reflect the official standpoint of the National Bank of Kazakhstan and may not coincide with it.

ISSN 2789-3308

ECONOMIC REVIEW

National Bank of the Republic of Kazakhstan

No. 2, 2023

CONTENTS

Bank Consumer Lending Market Survey
Jussangaliyeva K.Ye., Konurbayeva N.A. 4

Global Prospects of Responsible Investment
Barmambekova S.A., Assilbekova A.A. 19

An Overview of the Foreign Central Banks' Communication Policy about the Monetary Policy Decisions
Maigozhina G.K., Adilbekova K. 39

Consumer Lending Market Survey

Jussangaliyeva K.Ye. – Deputy Director, Department – Research and Analytics Center, National Bank of the Republic of Kazakhstan

Konurbayeva N.A. – Head, Division of Financial Markets Research, Department – Research and Analytics Center, National Bank of the Republic of Kazakhstan

The paper is devoted to the risk analysis of the consumer loan portfolio in Kazakhstan. The study analyzes the growth rate of an unsecured loan portfolio, calculates the level of debt per borrower, and distinguishes between borrowers by age. The authors developed a retrospective indicator that allows assessing the current burden on the borrower, and analyzed the international experience of limitations imposed on the debt burden of the population.

Key Words: unsecured loans, consumer lending, debt ratio.
JEL-classification: D14, E51, G21, G51, H31.

1. Preamble

The volume of retail loan portfolio in Kazakhstan has more than doubled over the past few years, due to a number of factors, including the implementation of government support programs, the recovery in demand after a series of lockdowns during the pandemic, the development of new technologies and financial ecosystems that increase and simplify the availability of credit resources for the population.

It should be noted that the growth of the loan portfolio in itself should not be perceived in a negative light. Increasing the availability of credit products for households and their variability expands the consumer and investment opportunities of households, which ultimately improves their well-being. Ando & Modigliani noted that under the life cycle hypothesis, credit availability allows households to overcome liquidity constraints and smooth consumption during periods of high and low income (Ando & Modigliani, 1963).

At the same time, a number of researchers, based on empirical analysis, have concluded that excessive growth in lending (credit boom) can be considered as a predictor of financial crises, while the post-crisis recovery of the economy is slower if the crisis is preceded by a credit boom (Schularick & Taylor, 2012; Jorda et al., 2013). It was also found that an increase in the ratio of household debt to GDP in the long term reduces final consumption, which ultimately affects the economic growth in a negative way (Arcand et al., 2012; Cecchetti & Kharroubi, 2012; Mian et al., 2015; Lombardi et al., 2017; Taehee et al., 2022).

Consistent with these findings are the results of the Drehmann & Juselius study, which confirmed that an increase in private sector debt, when household debt service costs account for a significant share of income, could lead to a massive banking crisis (Drehmann & Juselius, 2014).

Mamedli and Sinyakov, in their research note, point out that "the growth in lending in the face of increased inflationary expectations contributes to accumulation of vulnerabilities in the consumer lending segment" (Mamedli and Sinyakov, 2017).

Thus, an excessive growth in retail lending and, as a result, the accumulation of excess debt among households, especially under a certain combination of economic factors, may be of particular concern.

At present, there is an intensive growth of household debt in Kazakhstan. At the same time, the consumer loan portfolio is growing at a high pace in the face of high inflation expectations and a slowdown in the growth rate of real income of the population. The expectation of a further increase in commodity prices may become a trigger for a further growth of consumer lending, whereby the population will compensate for the decline in real income and adapt to price fluctuations. In addition, a deep penetration of new technologies that increase the possibility and speed of purchasing goods on credit contributes to the growth of impulsive purchases on credit,

which directly affects the debt burden of people. In the context of declining real income of the population, the easy accessibility and simplicity of online services that allow getting an unsecured loan in one click without a strict procedure for verifying solvency increases the frequency of access to such services and leads to an increase in reliance on borrowed funds.

As part of this study, the volume of debt of the population in the Republic of Kazakhstan on loans to banks was analyzed and the debt burden was assessed based on retrospective data calculated on the microdata of the Credit Register. The growth rate of consumer loans, consolidation of the loan amount, growth in the volume of troubled loans are a source of credit risk for the banking sector, so this problem is relevant and requires a comprehensive analysis.

2.1. Debt Burden of the Population in Kazakhstan

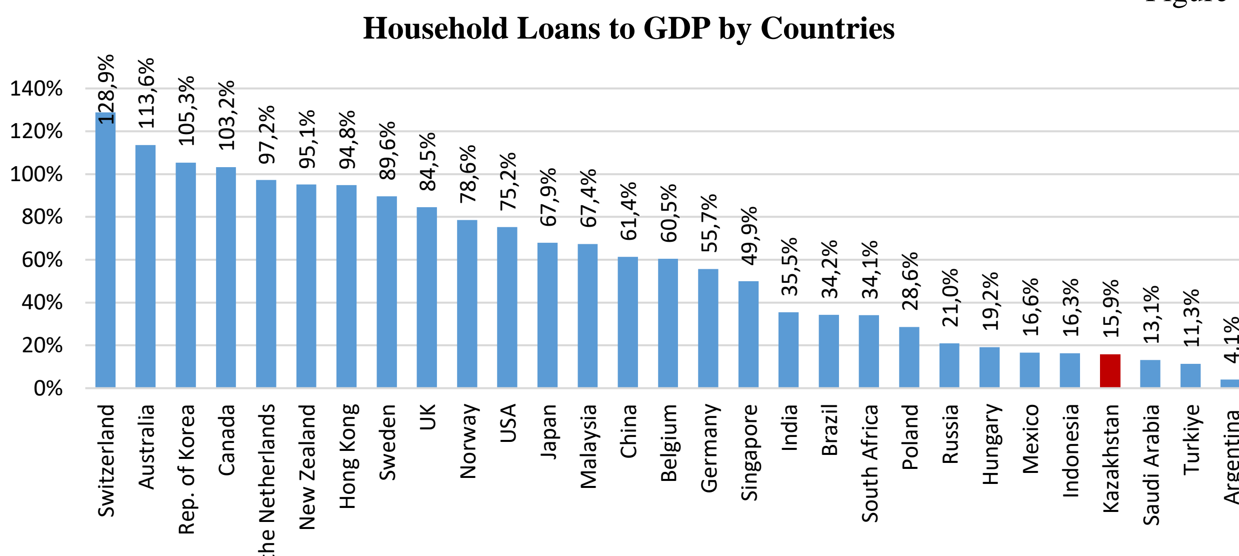
One of the indicators of the debt burden of the population is the ratio of household debt to GDP. Determining the optimal level of debt to GDP is the subject of research and discussion by many researchers. Some researchers define the threshold value of debt to GDP, the excess of which can potentially affect the economic growth in a negative way, at the level of 80-100% (Arcand et al., 2012; Cecchetti & Kharroubi, 2012). According to more recent work by Lombardi et al., an increase in household debt to GDP above the 60% threshold reduces consumption in the long run, and negatively affects GDP at 80% (Lombardi et al., 2017).

In Kazakhstan, household debt on credits and microloans to GDP is much lower than the above threshold: as at end-2022, household debt[1] amounted to 15.9%[2] (Figure 1). Nevertheless, this indicator has grown significantly over the last four years – from 10.4% to 15.9%.

Over the past year, the population's debt in Kazakhstan has almost equaled the volume of deposits attracted by banks (Figure 2). The growth rate of household debt over the last year outpaced the growth rate of deposits. Thus, in the second half of 2022, the debt of individuals exceeded the amount of funds deposited at banks in all months, except for the last one. At the end of 2022, the LDR (Loan-to-Deposit Ratio) as calculated on the basis of a broad definition of household credit debt accounted for 95%.

Figure 1

Household Loans to GDP by Countries



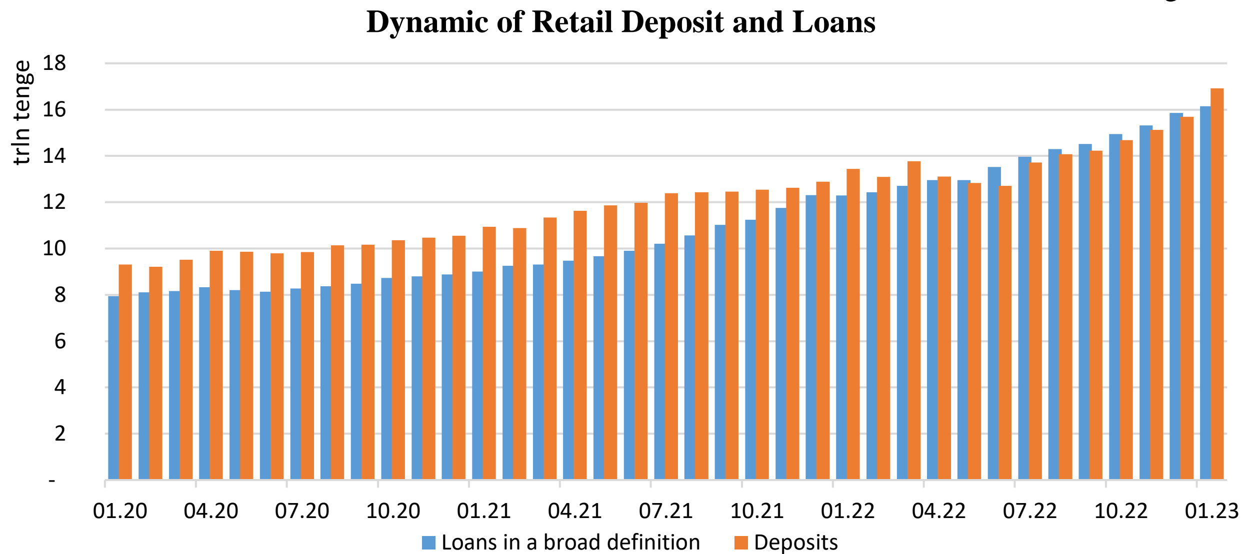
Note: Credit to Households and Non-profit institutions serving households (NPISHs) – percentage of GDP, as of the 3rd quarter of 2022. The data on Kazakhstan includes credits, microloans to natural persons and individual entrepreneurs provided by second-tier banks, microfinance organizations, credit partnerships and lombards as well as those transferred to collection agencies as of 01.01.2023.
Source: BIS[3], ASPR BNS RK, NBK, SCB

[1] Includes credits, microloans to natural persons and individual entrepreneurs provided by second-tier banks, MFOs, credit partnerships and lombards as well as those transferred to collection agencies

[2] Calculation based on the GDP volume in January-December 2022 (according to updated information) that amounted to 101 522 983.7 mln tenge (data from ASPR BNS RK)

[3] https://stats.bis.org/#ppq=CRE_TC_TO_HAUS;pv=1~7~1,0,0~both

Figure 2

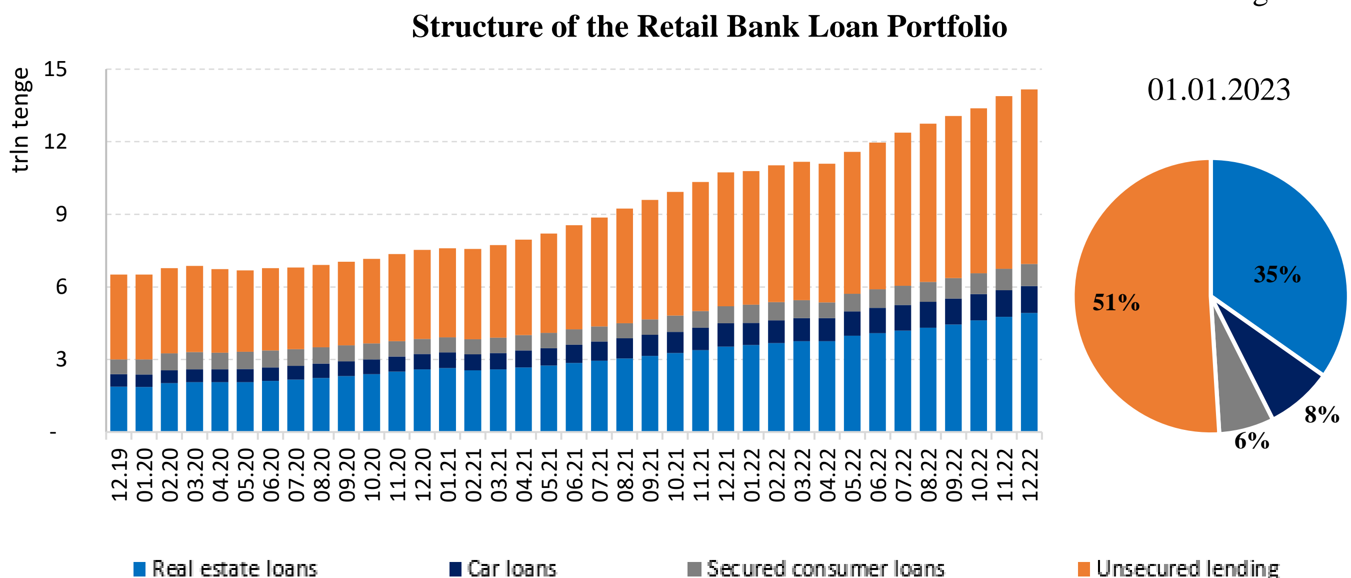


Note: The loan data includes credits, microloans to natural persons and individual entrepreneurs provided by second-tier banks, MFOs, credit partnerships and lombards as well as those transferred to collection agencies.
Source: bank reports (form 700-N), State Credit Bureau.

The share of household debt on bank loans accounts for 88% of household debt. More than half of the retail loan portfolio of banks (51%) falls on unsecured loans (Figure 3). The volume of unsecured loans began to grow intensively in 2021, which is associated with the end of a series of lockdowns in 2020, pent-up demand, and an increase in household demand for consumer loans given a slowdown in real income growth and rising inflation expectations. Thus, over 3 years, the banking portfolio of unsecured consumer loans increased by 2.1 times by 3.7 trillion tenge.

Along with unsecured consumer loans, mortgage loans also serve as the growth driver of the retail portfolio of banks, growing by 3.0 trillion tenge, or 2.6 times, in 2020–2022. The increase in mortgage loans is largely due to the launch of government programs, such as the program to use a part of people's pension savings for housing and (or) medical treatment, "Baspana Hit" and "7-20-25".

Figure 3

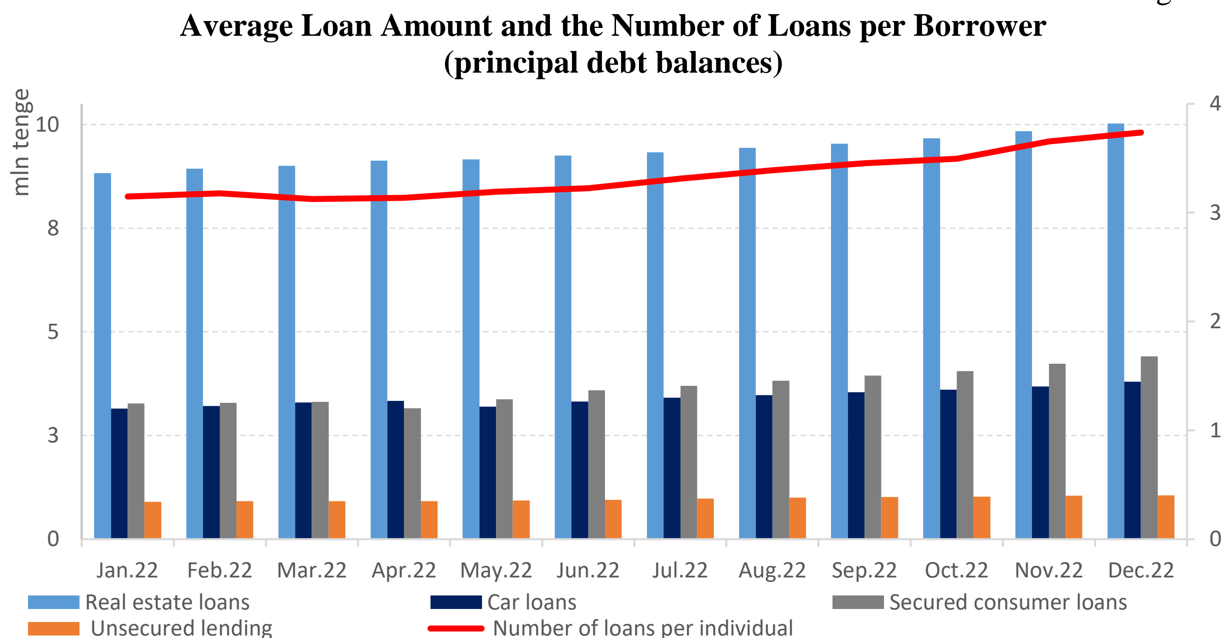


Note: Loan data includes loans to natural persons and individual entrepreneurs provided by STBs.
Source: Credit Register.

The number of loan agreements per person as of January 1, 2023 is 3.7 (Figure 4). It should be noted that not only the number of loans per borrower is growing, but the average amount of debt per borrower is also increasing. The average amount of debt per borrower is growing across all categories of loans. The average value of an unsecured loan per borrower has increased by more than 150 thousand tenge since January 2022 and at the end of 2022 amounted to about 1.1 million tenge. The debt per borrower on loans secured by real estate also increased significantly – from 8.8 million tenge in January 2022 to 10.0 million tenge in December 2022.

Figure 4

Average Loan Amount and the Number of Loans per Borrower (principal debt balances)



Note: according to the Credit Register data, excl. Otbassy bank

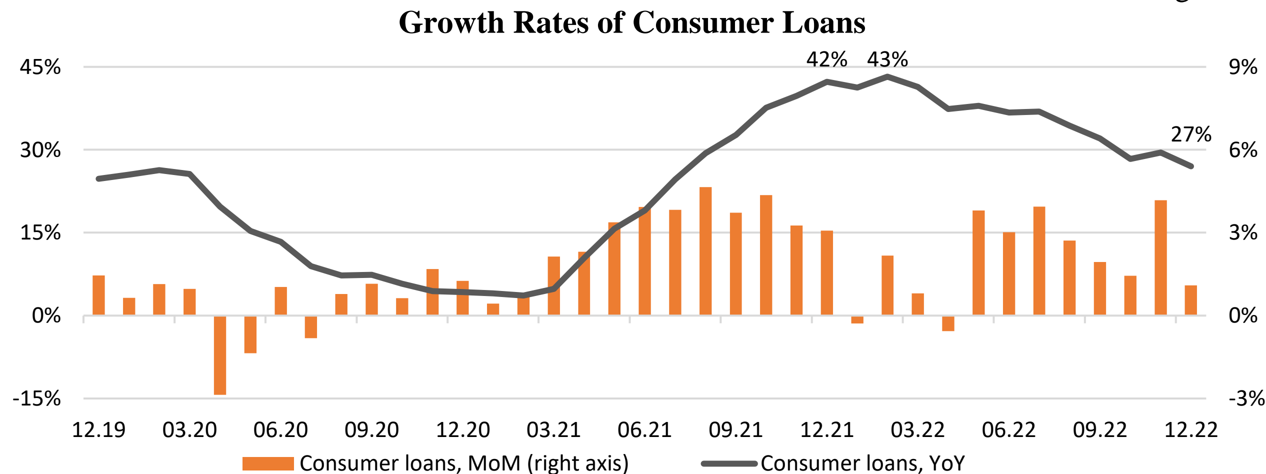
2.2. Consumer Lending

The intensive growth of consumer lending, taking into account its significant share in the total volume of household debt, can become a source of credit losses for the banking sector, and without proper monitoring and control, it can acquire proportions that threaten the stability of the financial market at the system level.

In Kazakhstan, the growth rate of consumer loans began to accelerate in 2021 (Figure 5) after a significant slowdown during the pandemic. Thus, if at the end of 2020 the volume of consumer loans grew by only 4%, then by the end of 2021 the annual increase was 42% accelerating until February 2022.

Figure 5

Growth Rates of Consumer Loans



Note: MoM – growth rate versus the preceding month; YoY – growth rate versus the same month of the preceding year.

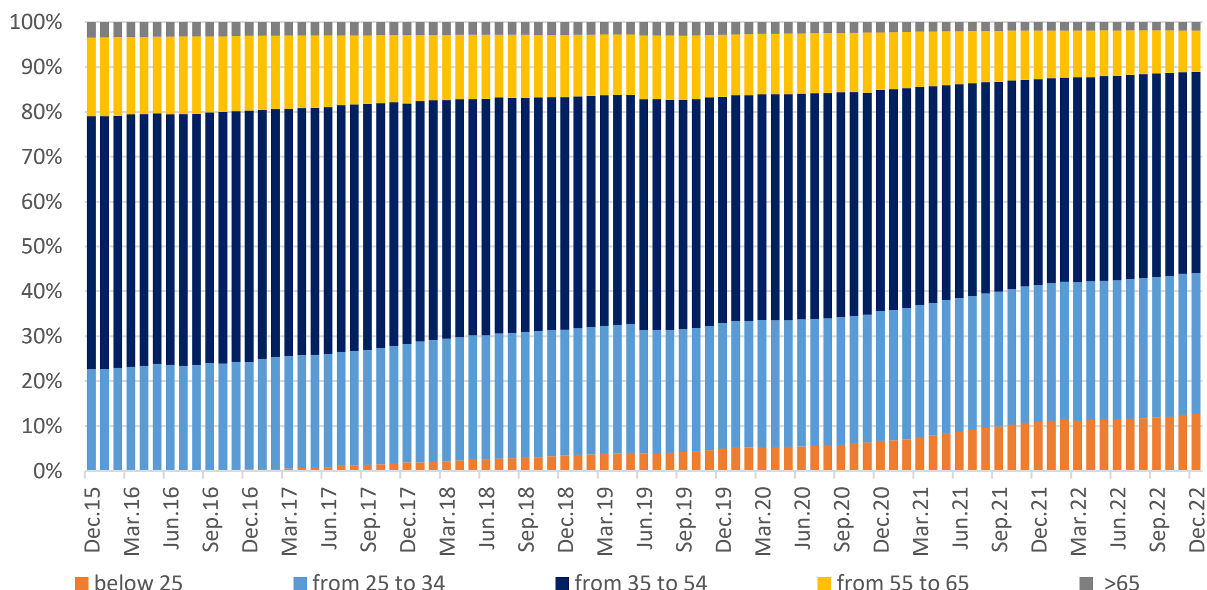
After February 2022, the annual growth rate of the consumer loan portfolio slowed down. In 2022, the increase was 27%, which is nevertheless a fairly high figure. It should be noted that the growth rate of consumer loans accelerated in November 2022, due to various lending promotion campaigns carried out by banks (in particular, the so-called "Black Friday", traditionally held in November).

The share of consumer loans in retail portfolio of banks as at January 1, 2023, amounted to 72.4% (henceforth – excluding Otbassy Bank), and the share of unsecured loans – 64.5%. According to the Credit Register data, 7.0 million of Kazakhstanis have bank debts on consumer loans accounting for about 78.5% of the country's employed population, as per our estimate[4]. At the same time, at the end of 2022, there were 3.64 consumer loans per borrower with an average value of one loan equal to 1.1 million tenge. As a result, several small-sized loans in the aggregate can create quite a heavy debt burden.

It is necessary to mention the "rejuvenation" of the consumer unsecured loan portfolio. Thus, if at January 1, 2020 the main share fell on a group of borrowers aged 35 to 54 years (56% in total), then on January 1, 2023, the age limits for loans shifted: the largest share of loans remained in the same group with a decrease in the share up to 45%, while the total share of groups under 34 years old increased significantly from 23% to 44% (Figure 6).

Figure 6

The Structure of Unsecured Consumer Loan Portfolio, by Borrower Age



Note: according to the Credit Register data, excl. loans from Otbassy Bank

The share of loans issued to people under 25 has increased significantly – by 7.7 pp since January 1, 2020. So, for three years, young people under the age of 25 took additional consumer loans in the amount exceeding 820 billion tenge. This can be explained by the fact that with low incomes at the beginning of their careers, young people want to have expensive things and gadgets without waiting for a nominal increase in their incomes. At the same time, we should expect a further increase in the volume of loans in this age category as the baby boom generation reaches the middle of the "zero" age of majority and assumes financial obligations. The payment discipline of this age category is lower, and the highest level of troubled unsecured loans was recorded among borrowers under 25 years old (Table 1). Borrowers' sense of responsibility to service debt is

[4] According to the BNS, at January 1, 2023, the numbers of employed population in the country made up 8 965.5 thous. individuals.

increasing as people get older: older generation are prone to default on their loan payments less frequently.

Table 1

Breakdown of Unsecured Consumer Loans by Borrower Age, bln tenge

	01.01.2020		01.01.2023		Distressed Loans	
	Total	**Troubled Loans**	**Total**	**Troubled Loans**	**The Share at 01.01.2023**	**Change over the Period 01.01.2020-01.01.2023**
below 25	204	19	1025	90	8.8%	376%
from 25 to 34	1149	94	2542	165	6.5%	76%
from 35 to 54	2075	182	3625	208	5.7%	15%
from 55 to 65	567	51	742	40	5.4%	-22%
above 65	117	8	153	9	5.9%	12%
Grand Total	**4 113**	**354**	**8 087**	**513**	**6.3%**	**45%**

Note: troubled loans are the sum of doubtful loans of 1 and 2 categories as determined according to the Methodology for Assessing the Loan Portfolio Quality, and loans 90+ days past due according to banks' reports. The methodology for assessing the quality of the loan portfolio is described in the paper by Konurbayeva et al., 2021.

For unsecured consumer loans, the largest increase was recorded among loans with the principal debt amount not exceeding 300 thousand tenge, as well as with the principal debt amount from 2 to 5 million tenge (more than a two times increase in both groups). An aggravating factor is a significant buildup in troubled loans in these two groups (Table 2). In addition, it is worth mentioning that the volume of loans with the principal debt amount exceeding 5 million tenge and unsecured is growing.

The share of troubled loans in the group of unsecured consumer loans amounted to 6%, approaching the value of December 2020, which indicates a slowdown in lending growth and an increase in the rate of impairment of unsecured consumer loans. The size of troubled loans from January 1, 2020 increased by 212 bln tenge, or by 94%.

Table 2

Breakdown of Unsecured Consumer Loans by Principal Debt Amount, bln tenge

	01.01.2020		01.01.2023		Change		
	Total	**Troubled Loans**	**Total**	**Troobled Loans**	**Total**		**Troubled Loans**
<= 300 000	585	29	1 584	81	998	171%	182%
300 001 - 500 000	399	23	855	49	456	114%	119%
500 001 - 1 000 000	887	57	1 554	101	667	75%	77%
1 000 001 - 2 000 000	821	62	1 128	78	307	37%	25%
2 000 001 - 5 000 000	640	30	1 624	106	985	154%	252%
> 5 000 0000	179	25	476	23	297	166%	-9%
Grand Total	**3 511**	**225**	**7 221**	**438**	**3 710**	**106%**	**94%**

Note: troubled loans are the group of doubtful loans of 1 and 2 categories as determined according to the Methodology for Assessing the Loan Portfolio Quality, and loans 90+ days past due according to banks' reports. The methodology for assessing the quality of the loan portfolio is described in the paper by Konurbayeva et al., 2021.

Thus, despite a relatively low volume of debt of the population in the Republic of Kazakhstan in relation to GDP, a significant growth rate of retail loans, consolidation of the amount of loans, prevalence of unsecured loans in bank portfolios, growth of troubled loans can become a source of significant credit risk for the financial sector in the medium term. This is especially true given high inflation expectations and a reduction in real income of the population.

An increase in debt burden, together with growth in other non-lending expenses against the reduction in real income and rising prices, may lead to higher numbers of defaults on payments, and as a result, to an increase in credit risk and liquidity risks of banks.

3. Measures to Constrain Consumer Lending

Today, in international regulatory practice, there are a number of measures aimed at reducing the growth rate of consumer lending. Limiting excessive growth of the loan portfolio and reducing associated credit risks can be achieved through the use of macroprudential regulation tools, such as the introduction of the maximum debt burden that households can take on (Debt-Service-to-Income (DSTI), Debt-to-Income (DTI)). In some countries, tightening capital requirements through premiums or increasing risk weights on loans is applied, which discourages consumer lending by reducing the return on capital and increasing the level of capital reserves to cover possible losses. There are also examples of the use of direct restrictive measures on the issuance of loans or the growth of lending. Such policy measures are not fully market-based. Moreover, limits on the growth of certain credit products are direct interference with commercial activity, which can potentially lead to the destruction of market fundamentals in the future.

3.1. Macroprudential Measures

One of the common tools to ensure an acceptable level of debt burden for the borrower and reduce the risk of non-payment for the bank is to set a limit on debt service at the level of a certain percentage of the borrower's income.

The debt service-to-income ratio DSTI (Debt-Service-to-Income) is one of the sectoral macroprudential instruments along with LTV (Loan-to-Value) and DTI (Debt-to-Income), which are aimed at limiting excessive borrowing by households. Many researchers have demonstrated the effectiveness of DSTI in slowing down and smoothing excessive lending growth based on empirical analysis (Kuttner & Shim, 2013; Claessens et al., 2014; Akinci & Olmstead-Rumsey, 2015; Alam et al., 2019).

According to Drehmann & Juselius, the debt service ratio (DSR), defined as the ratio of the amount of interest payments and principal due per month, to the borrower's monthly income, is more indicative compared to the ratio of loan to GDP and can serve as an effective early warning indicator of systemic banking crises (Drehmann & Juselius, 2012).

An important issue is to determine the optimal level of the debt service indicator, the excess of which will signal a critical increase in the debt burden for the borrower and an increase in the risk of non-payment for the bank.

Nier et al. in their study empirically found that the imposition of a quantitative limit on the DSTI ratio leads to a significant reduction in the average probability of default (PD). Thus, the PD indicator for mortgage loans is lower by 23%, subject to the maximum DSTI limit of 40% (20% for foreign currency loans). At the same time, the PD for consumer loans increases even with a lower DSTI compared to mortgage loans. Thus, the authors set a threshold above which an increase in DSTI leads to an increase in PD, at the level of 30% for borrowers with consumer loans only. This is explained, in their opinion, by insignificance of penalty on consumer loans in comparison with the mortgage penalty: failure to fulfill mortgage obligations usually leads to the loss of the pledged housing by the borrower, which stimulates hi/her to disciplined loan servicing, in contrast to consumer loan (Nier et al., 2019).

The DSTI tool with different variations is widely used in world practice. The most common thresholds for DSTI among countries that set limits on the debt burden are 40% and 50% (Table 3).

Table 3

DSTI across Countries and its Established Limit

	Country	Maximum Limit
1.	Hungary	25%-60% for loans in Hungarian forints 15%-30% for loans in the euro 5%-15% for loans in other currencies
2.	France	35%
3.	Iceland	35% (40% for borrowers with a first loan)
4.	Romania[5]	40% 20% for foreign currency loans
5.	Latvia	40%
6.	Lithuania[6]	40% (50% - stress DSTI)
7.	Austria[7]	40%
8.	Belarus	40%
9.	Malta	40% (applicable to borrowers with outstanding loans)
10.	Czech Republic	50% (45% if a borrower is older than 36)
11.	Estonia	50%
12.	Portugal	50%
13.	Kazakhstan	50%
14.	Singapore[8]	55%
15.	Slovakia	60%
16.	Korea[9]	60%
17.	Azerbaijan[10]	70%
18.	Cyprus[11]	80% for loans in the euro 65% for foreign currency loans
19.	Russia	80% (the share of provided unsecured loans with the debt ratio of over 80% should not exceed 25%)

However, there are countries where the thresholds differ significantly. Thus, for example, Hungary uses a differentiated scale of limits on the ratio of payments to income (PTI, an analogue of DSTI). PTI is defined as the maximum amount of monthly payments in relation to the regular, verified monthly income of the borrower. If the borrower's income is less than 500 thous. forints[12] with the interest rate fixing for less than 5 years, the PTI limit for it will be 25% (15% for a loan in euro, 5% for a loan in another foreign currency). The maximum PTI limit is set for borrowers with an income of HUF 500,000 or more with a fixed loan rate for the entire period of his life (or at least 10 years) at the level of 60% (30% for a loan in euros, 15% for a loan in another foreign currency)[13]. Such differentiation in the PTI threshold was associated with an increase in the volume of housing loans issued at floating rates or rates with fixed interest over a horizon of less than 5 years, which, according to the National Bank of Hungary, could potentially lead to an increase in interest rate risks for borrowers and an increase in the debt burden. Borrowers who have received or are receiving variable rate mortgages are expected to have more income reserves in case interest rates rise in the future.

---

[5] https://www.esrb.europa.eu/pub/pdf/other/esrb.notification190116_other_ro.en.pdf
[6] https://www.lb.lt/en/role-of-the-bank-of-lithuania-in-maintaining-financial-stability#ex-1-3
[7] https://www.esrb.europa.eu/national_policy/shared/pdf/esrb.measures_overview_macroprudential_measures.xlsx
[8] https://www.mas.gov.sg/regulation/explainers/new-housing-loans/msr-and-tdsr-rules
[9] https://www.imf.org/-/media/Files/Publications/CR/2020/English/1KOREA2020004.ashx
[10] https://e-qanun.az/framework/50081, https://e-qanun.az/framework/44968
[11] https://economy-finance.ec.europa.eu/system/files/2022-11/ip189_en.pdf
[12] About 650 thous. tenge, or $1 470.
[13] https://www.esrb.europa.eu/pub/pdf/other/esrb.notification180620_HU_pti.en.pdf

In France and Iceland, a borrower's DSTI must not exceed 35% to qualify for a mortgage. The specific feature of Iceland is that for those borrowers who buy their first home with a mortgage, the maximum limit is 40%[14]. Income is defined as a long-term sustainable income excluding taxes, pension contributions and other deductions.

The experience of Poland is noteworthy, where DSTI limits are not related to regulatory requirements, but are advisory in nature. Thus, when assessing the borrower's solvency, the bank sets its own internal limits on DSTI consistent with PFSA[15]. At the same time, PFSA recommends paying special attention to loans where DSTI ratios exceed 40% for borrowers with income below the average wage and 50% for other borrowers. When the borrower reaches the established DSTI level, the bank must inform the PFSA of the increased risk when taking on additional credit commitments.

It should be noted that in most of the reviewed countries, DSTI is calculated when making a decision on originating loans secured by real estate. At the same time, the DSTI limits in the Czech Republic and Poland are applied when considering applications for any loans issued to households.

In Russia, Belarus, Azerbaijan and Kazakhstan, DSTI is also used as a tool to limit the household debt burden but in combination with other tools.

3.2. Other Measures to Curb the Growth of Consumer Lending

An intensive growth of the consumer loan portfolio in Russia is indirectly discouraged by increased capital requirements in the form of premiums to risk-weighting coefficients. For unsecured consumer loans, premiums are differentiated depending on the values of the borrower's debt burden indicator (DBI) and the true interest cost of a loan (TIC), which is an analogue of the annual effective interest rate (AERR) used in Kazakhstan. The maximum markup is 500% (with a TIC exceeding 35%).

A specific feature of Russian practice is the absence of a DBI maximum limit, which, if reached, entails a denial to provide a new loan to the borrower. At the same time, if the DR exceeds 50%, the bank must notify the potential borrower in writing about the risks associated with a high DR value.

According to the Bank of Russia, more than 36% of unsecured consumer loans in Q4 2022 were provided to borrowers with a DBI over 80%, which is higher than the same indicator in Q3 (32%). As noted in a press release from the Bank of Russia, "this is the maximum level since the introduction of the obligation to calculate DBI (October 1, 2019)"[16]. Due to the growth in the volume of unsecured loans to borrowers with a DR over 80%, from January 1, 2023, macroprudential limits on DR were introduced, whereby a limit is set for issuing loans to borrowers with a DBI above 80%: no more than 25% of the volume of unsecured loans issued for banks, no more than 35% of the volume of issued unsecured microloans for MFOs[17]. Moreover, the share of unsecured consumer loans with a tenor of over five years is limited for 10%.

In Belarus, the containment of consumer lending growth was achieved through the imposition of a limit on the debt ratio (DR) in 2018 as well as the introduction of macroprudential measures aimed at limiting systemic risk in 2019.

The DR threshold is set at 40%, above which the bank is required to create additional capital reserves. At the same time, the share of loans where the borrower's DR exceeds the established threshold should not exceed 10% of the portfolio.

An additional factor that limits the growth of consumer portfolio in Belarus is the estimated value of standard risk (EVSR)[18] that is positioned as a macroprudential tool and is calculated as

---

[14] https://www.esrb.europa.eu/pub/pdf/other/esrb.notification20221011_BBM_IS~570b29ce35.en.pdf
[15] Polish Financial Supervision Authority
[16] https://cbr.ru/press/pr/?file=638125163766588528FINSTAB.htm
[17] https://cbr.ru/press/pr/?file=638125163766588528FINSTAB.htm
[18] EVSR – is a reference for an interest rate level of a financial instrument that is characterized by a moderate level of riskiness of the business model implemented by a bank.

arithmetic average of interest rates on all types of retail lending on a monthly basis. At present, the EVSR on new loans provided to natural persons[19] is set at 15%. Banks may issue loans at rates higher than EVSR, but the volume of such loans should not exceed 10% of the portfolio. Loans issued at a rate higher than EVSR are weighted by the degree of credit risk at the level of 500%. Loan rates, including consumer loan rates, fluctuate around the EVSR rate, which eliminates the difference and attractiveness of consumer lending compared to other loan products in terms of banks' interest margin.

After the imposition of the DR limit and EVSR as part of macroprudential regulation, the growth rate of the consumer loan portfolio in Belarus slowed down, and since the beginning of 2021, it has moved into a negative growth zone.

Increased capital requirements are also applied in Azerbaijan if certain DSTI thresholds are exceeded[20]. Thus, loans provided to those borrowers whose debt ratio (BGN, borcun gəlirlərə nisbəti) is within 45%-60% are risk-weighted at 200%, within the range of 60-70% – are risk-weighted at 230%. In doing so, it is prohibited to issue new loans to the borrowers with the BGN above 70%.

3.3. Specifics of Regulation in Kazakhstan

Kazakhstan also uses a combination of DSTI and increased capital requirements to unsecured consumer loans.

Since 2020, a progressive weighting scale for the degree of credit risk of unsecured consumer loans has been introduced. Risk weights are differentiated depending on three factors: (1) type of income (formal/unofficial), (2) amount of debt (more principal – higher weighting), (3) level of overpayment/AEIR (increase in risk weights at the level of overpayment above 30%). The maximum risk-weighting level is 350%. The introduction of the progressive scale of risk weights also helped increase the responsibility of banks in unsecured lending and risk sharing.

The borrower's debt ratio (DR) was introduced back in 2014 with a maximum of 50% in order to prevent the household debt burden.

The borrower's DR is calculated by the bank in two stages; at the first stage, the solvency of the borrower is assessed, and then, when the borrower is recognized as solvent, the DR itself is calculated. So, the borrower is recognized as solvent if his/her income is equal to or exceeds the amount of the subsistence minimum and half of the subsistence minimum for each minor family member[21]. Thus, if the borrower's income is equal to the subsistence minimum (assuming that he/she does not have minor children), then such a borrower is solvent. Taking into account the low level of the subsistence minimum, we believe that in the current definition this norm is not a working one, since it does not affect the decision-making process and is formal in essence.

Based on the results of the DR calculation, a decision is made to issue a new loan, which cannot be positive for a borrower with a DR of 0.5.

It is worth mentioning that the calculation of DR is not carried out when considering applications for car loans secured by collateral of the purchased car, mortgage loans secured by 100% real estate collateral, educational loans and the system of housing construction savings. Such exceptions raise some questions because, despite the presence of collateral, the monthly payment on such loans can be significant and create a large debt burden that is disproportionate to the borrower's income.

---

[19] https://www.nbrb.by/finsector/financialstability/macroprudentialregulation/raschetnye-velichiny-standartnogo-riska. The rate established at May 2023

[20] https://e-qanun.az/framework/44968

[21] clause 92 of the Resolution of the Board of the National Bank of the Republic of Kazakhstan dated September 13, 2017 No. 170 "On the establishment of statutory values and methods for calculating prudential ratios and other mandatory ratios and limits, the size of a bank's capital and the Rules for calculating the open currency position and its limits" (Resolution No. 170):
$BI \geq SM + 0.5 * SM * Nmfm$ (BI – borrower's income, SM - subsistence minimum, Nmfm - number of minor family members)

Moreover, in the course of DR calculation, questions also arise as to what should be regarded as a borrower's income. In the existing definition,[22] when calculating the borrower's income, a bank can use various methods and is not limited to only officially confirmed income. So, to calculate the DR, the average monthly amounts of transactions on the borrower's debit card, the amount of balances on deposits or current accounts, the average monthly amounts of replenishment/withdrawal from deposits or current accounts, the average monthly amounts of the borrower's expenses (utility payments, purchases in online stores, payments in repayment of loans) can be used. At the same time, it should be noted that in the international practice, when calculating the DR, these expenses are deducted from the amount of income as regular expenses of the borrower for the most complete assessment of the debt burden and are not used to confirm his/her solvency.

Ownership of movable property (vehicles, livestock) and/or real estate worth more than the loan can also be used to determine income. However, the existence of property in the borrower's ownership does not guarantee the generation of income from this property.

To confirm the borrower's solvency (income) in the international practice, the information about income from tax authorities, from employers, pension funds as well as any other documented income is used. So, in the above mentioned countries that apply the DSTI, only income that has official confirmation is used in the calculation, minus taxes, pension contributions and other deductions.

4. Measuring the Household Debt Burden of Kazakhstan

As noted above, the debt burden is calculated by banks when making a decision to issue a loan. To assess the debt burden of the population in Kazakhstan, an attempt was made to calculate the indicator of the debt burden of individuals based on the data from the Credit Register and the Bureau of National Statistics[23] with an emphasis on a retrospective. That is, the assessment was based on existing loans, excluding future payments. To determine the amount of the monthly payment of an individual (retrospective data), data on the change in the principal debt for the month, accrued interest and overdue principal debt were used. This method differs from the approach used by Ybrayev et al. when calculating the DSTI for Kazakhstan, made on the basis of the methodology by Drehmann & Juselius (Ybrayev et al., 2023).

Thus, the amount of the monthly payment that must be made by an individual for the current period is determined based on the change in the principal debt, accrued interest and overdue principal debt according to the following formula (retrospective data):

$$Pmt_i = \begin{cases} del = 0, OD_t - OD_{t-1} + int_{t-1} \\ del > 0, OD_d + int_{t-1} \end{cases} \text{, где}$$

OD_t – principal balance at time *t*,

OD_{t-1} – principal balance at time *t-1*,

OD_d – overdue principal balance. If an individual fails to pay on time, the principal debt in the Credit Register is divided into two parts: overdue and undue. In case of non-payment for a long time, the overdue part of the principal debt increases, and the undue part remains unchanged;

Int_{t-1} – accrued interest that should be repaid by the individual during that time interval (in case of non-repayment, interest is accumulated).

This formula assumes that if the borrower does not pay, then the entire amount of his/her outstanding debt, including interest, will be included in the calculation of the burden in the corresponding period, i.e. the debt must be repaid in one payment of this period. In addition, it was assumed that an unsecured loan is provided for one year, a secured consumer loan – for 3 years, a car loan – for 5 years, and a mortgage loan – for 15 years.

$DB=\sum_{i=1}^{n} Pmt_i$ is taken as a debt burden, where n – is the number of loans in each period.

---

[22] c. 92 of Resolution No.170

[23] ASPR BNS RK

The payment per one borrower is calculated as the ratio of debt burden and the number of unique borrowers during that period:

$$Payment = \frac{DB}{no.of\ borrowers}$$

The official statistical data was used as income of natural persons:

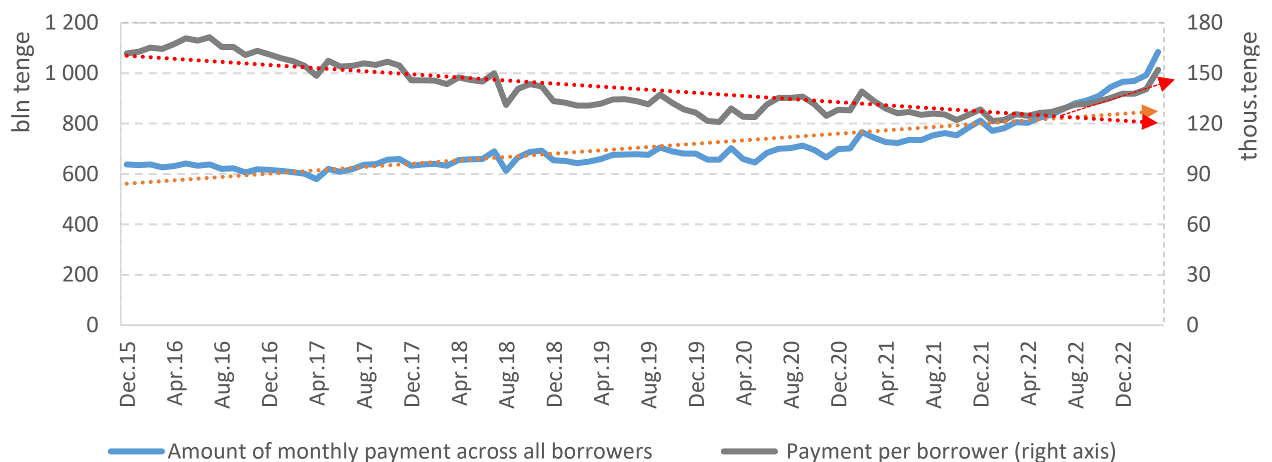
1) money income, per capita average (MI);

2) average monthly nominal wage (W).

Based on the assessment, the average monthly payment per borrower has been declining from July 2016 until July 2022 (Figure 7), while the aggregate monthly payment of all borrowers continues to grow. Thus, in December 2022, the debt repayment in the retail portfolio amounted to 966 bln tenge, or 138 thousand tenge on average per borrower. Starting from July 2022, the debt burden of borrowers began to grow. It is worth noting that in February 2022, the debt on unsecured consumer loans, as well as mortgage housing loans, increased significantly, which is associated with political events at the beginning of the year (expectation of a sharp rise in prices spurred the demand for borrowed funds).

Figure 7

Assessment of a Monthly Payment Rate across the Entire Retail Portfolio and per a Single Borrower on Average



Based on the received data on payments, 2 variants of RIDB (a retrospective indicator of debt burden) were calculated depending on the indicator of income of individuals used[24]: (1) money income on average per capita[25] (MI) and (2) average monthly nominal wage (W). The calculation includes all loans provided to individuals rather than unsecured loans only.

In dynamics, the RIDB is gradually decreasing, being driven by both a decrease in the amount of the monthly payment and an increase in the nominal income of the population (Figure 8). A more conservative estimate of RIDB is based on per capita money income (RIDB_MI in Figure 8). The value of the indicator decreased to 0.92 at the end of 2022.

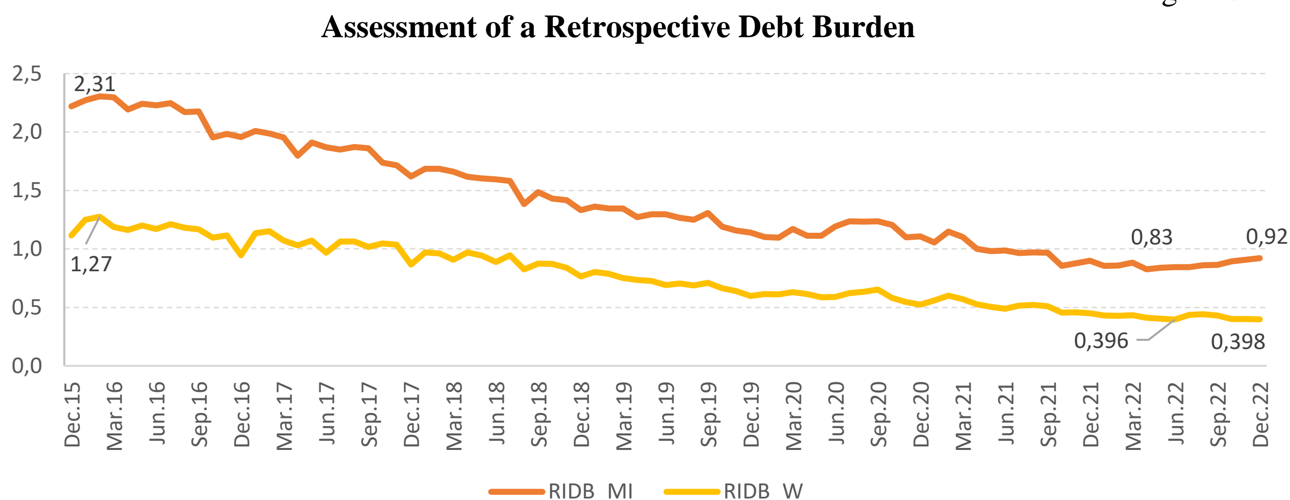
When assessment is made based on average monthly nominal wages, the RIDB value (RIDB_W in Figure 8) declines to 0.4 by the end of 2022.

[24] Data from the ASPR BNS RK

[25] Total income to the resident population

Figure 8

Assessment of a Retrospective Debt Burden



Note: **RIDB_MI** $= \frac{\textbf{Payment}}{\textbf{MI}}$ (on income per capita on average) and **RIDB**_W $= \frac{\textbf{Payment}}{\textbf{W}}$ (on average monthly nominal wage).
Dec.15; Mar.16: Jun.16; Sep.16; Dec.16; Mar.17: Jun.17; Sep.17; Dec.17; Mar.18: Jun.18; Sep.18; Dec.18; Mar.19: Jun.19; Sep.19; Dec.19; Mar.20: Jun.20; Sep.20; Dec.20; Mar.21: Jun.21; Sep.21; Dec.21; Mar.22: Jun.22; Sep.22; Dec.22

The trend of reduction in the debt burden over the past 5 years was influenced by measures taken by the National Bank: imposition of the DR limits and a progressive scale of risk weights for consumer loans, targeted support for certain categories of people[26] as part of the mortgage loan refinancing and repayment of unsecured loans.

Government support measures undertaken during the pandemic in 2020-2021 (credit vacations in the periods of lockdowns) also prevented the household debt burden from significant growth.

However, amid the realization of geopolitical risks, high inflation expectations and reduction in real income of the population, in 2022 the level of debt burden increased.

5. Conclusion

Household debt to GDP in Kazakhstan is significantly lower than the values observed in developed and some developing countries. Nevertheless, the debt-to-GDP ratio over the past 4 years has increased by 5.5 pp from 10.4% to 15.9%. Despite a slowdown in 2022, the growth rate of the retail loan portfolio remains high. A significant growth rate of retail loans, consolidation of loan amounts, growth in debt per borrower, the prevalence of unsecured loans in banks' portfolios, and an increase in problem loans may become a source of credit risk for the financial sector in the medium term.

This is especially true given high inflation expectations and a reduction in real income of the population. A growth in the debt burden, together with an increase in other non-lending expenses against the a decline in real income and rising prices, may lead to an increase in the number of overdue payments and, as a result, to an increase in credit risk and liquidity risks of banks.

The rejuvenation of the loan portfolio is also seen as a potential risk due to the low payment responsibility of borrowers in the group below 25 years. At the same time, we should expect further growth and rejuvenation of the loan portfolio as the "baby boom" generation reaches the middle of the "zero" age of majority and assumes financial obligations.

The National Bank, together with the financial regulator, uses a number of tools aimed at slowing down the growth rate of consumer lending and differing in the speed of response and

[26] In accordance with Decree of the President of the Republic of Kazakhstan dated June 26, 2019 No. 34 "On Measures to Reduce the debt Burden of the Population in the Republic of Kazakhstan"

achievement of the desired result. These include macroprudential instruments aimed at limiting excessive growth in household debt, as well as increased capital requirements for unsecured consumer loans.

Since 2014, the debt ratio (DR) of the borrower has been used in the perimeter of bank regulation with a limit value set at 50%, which is generally in line with global practice and is a good tool to control the burden of households. However, the procedure for assessing the solvency of the borrower and his/her income as part of the DR calculation needs to be revised, since in the current definition, the borrower's income is not limited to officially confirmed income. In the international practice, to confirm the borrower's solvency (income), a documented income minus taxes, pension contributions and other deductions are used.

Most countries have DSTI thresholds of 50% or below (13 of the 19 countries represented), with the most commonly applied limit of 40%. Thus, potentially for Kazakhstan there is a margin for reducing the limit value of DR, however, such decision should be made taking into account a comprehensive analysis and empirical assessment of the current level of debt burden of the population on a granular basis.

We'd like to mention that according to the results of the debt burden assessment, the average value of the debt burden retrospective indicator as calculated on the basis of the average monthly nominal wage (RIDN_W), at the end of the year amounted to 0.4. This is an average value that shows the level of debt burden of an average borrower without taking into account the regional factor and the level of income of various groups of the population; nevertheless, it can serve as a guideline in determining the level of debt burden of the population. The resulting value is below the current DR limit, which indicates that there is room for growth in the consumer loan portfolio.

A high growth rate of the consumer portfolio is a source of risks and it is important to develop the right decisions aimed at slowing down the pace of lending. However, it should be understood that the tightening of regulation and the decreased availability of bank lending amid a high demand for consumer loans may provoke an overflow of borrowers into the unregulated segment (Peer-to-Peer Lending) or into the segment with more liberal regulation (IFIs, pawnshops), which may lead to higher risks and increased household debt burden.

List of References

1. Mamedli M., Sinyakov A., 2017. Consumer Lending in Russia: Prospects and Risks Based on the Household Finances Surveys. Analytical Note by the Research and Forecasting Department of the Bank of Russia.
2. Ando A., Modigliani F., 1963. The ‘Life Cycle’ Hypothesis of Saving: Aggregate Implications and Tests. *American Economic Review*, Vol. 53, pp. 55–84.
3. Schularick M. H., Taylor A., 2012. Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870–2008. American Economic Review. Vol. 102, pp. 1029-61.
4. Jorda O., Schularick M. H., Taylor A., 2013. Sovereigns versus Banks: Credit, Crises, and Consequences. National Bureau of Economic Research.
5. Mian A. R., Sufi A., Verner E., 2017. Household debt and business cycles worldwide. National Bureau of Economic Research. Working Paper 21581.
6. Taehee O., Gyu-hwan L., Myoung-hun N., Un L. J., 2022. Heterogeneous consumer spending pattern in rising interest rate environment. Band of Korea Issue Note No. 2022-45, Bank of Korea.
7. Lombardi M., Mohanty M., Shim I., 2017. The real effects of household debt in the short and long run. BIS Working Papers, No 607.
8. Arcand J., Berkes E., Panizza U., 2015. Too much finance? Journal of Economic Growth, vol 20, no 2, pp 105–48.
9. Cecchetti S., Kharroubi E., 2012. Reassessing the impact of finance on growth. BIS Working Papers, №381.

10. Konurbayeva N.A., Nurkhanova O.V., Khakimzhanov S.T., 2021. Assessing the Loan Portfolio Quality by the Loan-Level Data”. Working Paper, No.2021-7.

11. Drehmann M., Juselius M., 2012. Do debt service costs affect macroeconomic and financial stability? BIS Quarterly Review.

12. Nier E., Popa R., Shamloo M., Voinea L., 2019. Debt Service and Default: Calibrating Macroprudential Policy Using Micro Data. IMF Working Paper, WP/19/182.

13. Kuttner K.N., Shim I., 2013. Can non-interest rate policies stabilize housing markets? Evidence from a panel of 57 economies. BIS Working Papers, №433.

14. Akinci O., Olmstead-Rumsey J., 2015. How Effective are Macroprudential Policies? An Empirical Investigation. International Finance Discussion Papers 1136, Board of Governors of the Federal Reserve System (U.S.).

15. Alam Z., Alter A., Eisemann J., Gelos G., Kang H., Narita M., Nier E., Wang N., 2019. Digging Deeper—Evidence on the Effect of Macroprudential Policies from a New Database. IMF Working Paper, WP/14/155.

16. Claessens S., Ghosh S.R., Mihet R., 2014. Macro-Prudential Policies to Mitigate Financial System Vulnerabilities. IMF Working Paper, WP/19/66.

17. Bank of Russia, 2022. Macroprudential Policy of the Bank of Russia: Implementation Concept and Planned Decisions. Information and Analytical Material.

18. Ybrayev Z., Talakin A., Kairullayev Y., 2023. Household debt service ratio in a developing economy: borrower-based analytical tools and macroprudential policy overview in Kazakhstan. J Bank Regul.

19. https://www.esrb.europa.eu/pub/pdf/other/esrb.notification190116_other_ro.en.pdf.

20. https://economy-finance.ec.europa.eu/system/files/2022-11/ip189_en.pdf .

21. https://www.lb.lt/en/role-of-the-bank-of-lithuania-in-maintaining-financial-stability#ex-1-3 .

22. https://www.esrb.europa.eu/national_policy/shared/pdf/esrb.measures_overview_macroprudential_measures.xlsx.

23. https://www.mas.gov.sg/regulation/explainers/new-housing-loans/msr-and-tdsr-rules.

Global Prospects of Responsible Investment

Barmambekova S.A. – Head, Strategy Division, "National Investment Corporation of the National Bank of Kazakhstan" JSC
Assilbekova A.A. – Manager, Strategy Division, "National Investment Corporation of the National Bank of Kazakhstan" JSC

Today, an increasing number of institutional investors are showing interest in the principles of responsible investment, or impact investing. High demand for responsible investment will enhance competition for projects that meet the principles of ethical and sustainable investment. In addition to the prerequisites for future attractiveness, the paper discusses investment properties and shows the dynamics of development of the impact investing market, including assets under management, the volume of capital raised and transactions, as well as performance indicators in the context of strategies and regions. While it is commonly believed that impact investing reduces performance, exclusion of impact investing can lead to more significant risks and to non-compliance with the fiduciary duties of asset managers. Therefore, when investing, impact assets should be examined for impacts on environmental, social and corporate governance aspects at the project, industry and country levels. In addition to the question of attractiveness of the main sectors of impact assets, the paper discusses promising areas of impact investing in the context of strategies and regions. The final part shows the advantages of considering impact investments in making decisions on investment analysis and portfolio building by institutional investors.

Key Words: impact investing, the market for responsible investment, environmental, social and governance (ESG) factors, investment topics, perspective areas.
JEL classification: Q010, Q230, Q240, Q250.

Preamble

The Principles for Responsible Investment (PRI) suggest possible actions to incorporate environmental, social and corporate governance (ESG) aspects into investment practice. The PRI Principles define responsible investment as "an approach to investing that aims to integrate environmental, social and governance (ESG) factors into investment decisions to better manage risk and generate sustainable, long-term returns." There are many terms such as sustainable investing, ethical investing, and impact investing associated with the many investment approaches that address ESG issues. Responsible investments can be made by investors that are focused solely on financial results as well as by investors who want to build a bridge between financial opportunities/risks and results linked to the outcome of events occurring in the real world. From April 2020 to April 2021, the number of investors adhering to the principles of responsible investment had increased by 26%, from 2,701 to 3,404. Total assets under management, represented by all 4,902 investment managers, increased by 28% during this period from $103 trillion to a little over $121 trillion at the end of March 2021.

Figure 1

Growth of Assets under Management in 2006-2021

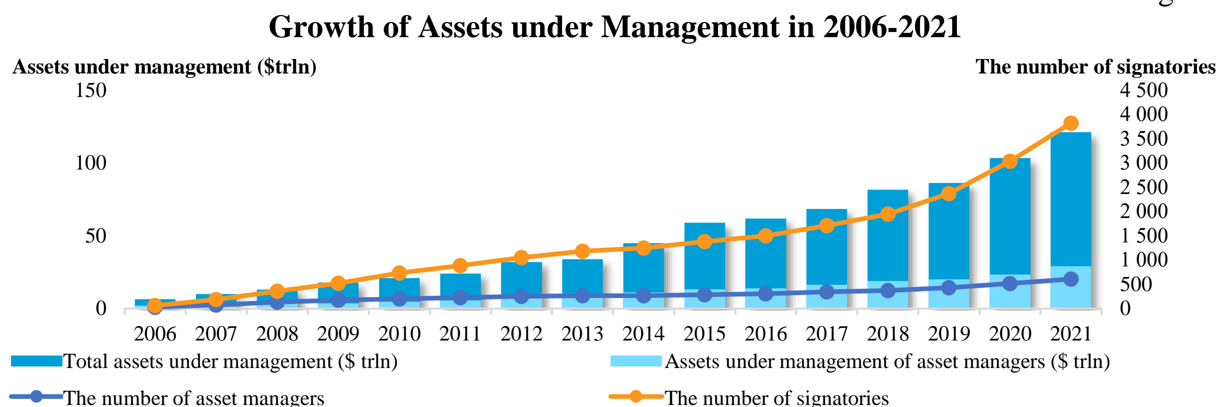
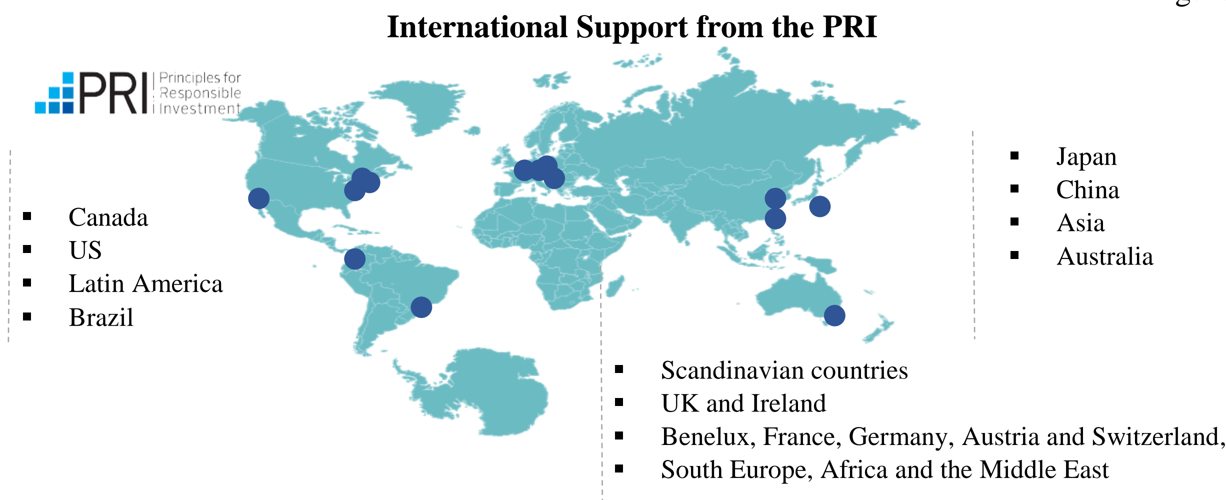


Figure 2

International Support from the PRI



In 2021, the US, UK and Ireland accounted for 39% of total new signatories. New signatory growth was also strong in China (71%), Asia excluding Japan and China (54%), Latin America (excluding Brazil, 34%) and Brazil (30%). The main goal of PRI is to increase the number of signatories in emerging markets, driven by the need to support efforts such as achieving the UN Sustainable Development Goals (Appendix 1) and ensuring the right climate transition, which will only be successful with the participation of signatory countries, companies and society in all markets.

Asset managers, in order to obtain financial returns from investments, distinguish between two separate categories in the allocation of capital: investments for profit and philanthropic capital. However, over the past few decades, new sustainable investment products and strategies have been developed to help investors “thrive and do good.” As sustainable investing has evolved from socially responsible investing (SRI) to ESG and impact investing, the demand for sustainable investing strategies has grown significantly. According to the latest Morgan Stanley survey, 99% of millennials expressed an interest in sustainable investing, 79% of all individual investors maintained their focus on sustainable investing during and after the Covid-19 pandemic [1], and six years earlier – 71%. Interestingly, 58% of those surveyed cited the lack of affordable financial products as an obstacle to incorporating sustainable investing into their portfolios [1]. At the same time, according to the Forum for Sustainability and RI, investment products claiming some relevance to sustainable investing have proliferated, with US$8.4 trillion in assets managed by professional investment managers by the end of 2022 or 13% of total US assets under professional management. Top priority issues for asset managers and their institutional investor clients are carbon emissions, climate change, labor issues, sustainable natural resources/agriculture and corporate governance aspects [2].

While the data suggests a continued surge in both supply and demand for sustainable or impact investments, according to investors targeting investment products, they don't always get what they're looking for. This is partly because each investor has his own understanding about the definition of sustainable investing. Despite a wide variety of strategies to avoid tobacco use or carbon emissions, there is a small number of funds that focus on social issues such as education or diversity, or focus on the development of a specific development region. In addition to a strategy that fits the mission of the investor, it is difficult for investors to find suitable funds, as the track record is often short and difficult to evaluate, and there is always the danger of "green washing", in which managers misinform investors, companies, consumers or clients in order to create an image of responsible attitude towards the environment. For reasons related to reputation and higher risk-adjusted returns, about 3/4 of institutional investors worldwide said they considered ESG factors when choosing investments. There is reason to believe that companies that are well versed in ESG are exposed to less unsystematic risk in the sense that their operational risk is reduced when controls are put in place to prevent environmental damage.

It should be noted that ESG is only a basis for company valuation and not an independent investment strategy. Impact investing means integrating ESG into decisions regarding asset allocation and selection of securities with the dual goal of maximizing risk-adjusted financial returns while creating positive social and environmental impacts. Impact investing is associated with relevance, as investors can choose investments based on the perceived degree of social impact an investment can have in relation to ESG issues. It is widely believed that private equity markets and venture capital investments are the best candidates for impact investing because they involve businesses that would not normally be funded in conventional markets. For example, TPG, KKR and Bain Capital managers have already launched impact funds, while Goldman Sachs, UBS and US Bank have added an impact investment platform to their asset management practices.

As for the growth in the number of asset managers, in 2021-2022, 88 asset owners became PRI signatories, and this is the third largest year in terms of growth in the number of asset managers, reaching 681 signatories in total. The number of endowments, philanthropic funds, corporate pension and insurance companies has increased over the last three years, counterbalancing the previously dominant position of state-owned pension funds. In 2021-2022, 5 countries – Cyprus, Turkiye, Costa Rica, Slovenia and the Republic of Palau – have their first asset manager signatories. In existing markets, the growth was particularly eminent in Germany, Austria, the UK and Ireland.

Most sovereign wealth funds and pension funds aim for socially responsible investing in their portfolios. For example, the Canada Pension Plan Investment Board (CPPIB) with $395 billion of assets under management and the New Zealand Superannuation Fund (NZ Super Fund) with $37 billion of assets under management became PRI signatories in April 2006.

Hong Kong's central banking institution – the Hong Kong Monetary Authority (HKMA), became a PRI signatory in 2019, with $514 billion in assets under management. In 2022, the HKMA stepped up its efforts to promote a more sustainable financial sector in Hong Kong while fulfilling its responsibilities as a responsible investor and a sustainable institution. In fulfilling its role as a sustainable organization, the HKMA plans to develop a sustainability roadmap covering its strategic directions, key initiatives and performance targets as appropriate. The effort will be based on three pillars: the environment, people and social responsibility. There is an increasing trend in Asia to become a PRI signatory. Korea Investment Corporation (KIC), with $169 billion in total assets under management, issued a press release in October 2022 stating that the Sovereign Wealth Fund will work with PRI to reach an UN-supported framework agreement. The Fund has agreed to become a signatory as part of its ongoing efforts to promote sustainable investment and expand global partnerships for ESG investments. Another Sovereign Wealth Fund in Malaysia, Khazanah Nasional, is taking a company-wide approach to sustainability ($31 billion of assets under management). The Sovereign Wealth Fund joined the PRI principles in February 2017. As a responsible investor, the fund strives to achieve positive results in its investment activities and ensure a fair and responsible transition for target companies as they embark on a path of

sustainability. This will be achieved by supporting these companies through an ongoing active engagement with shareholders and stakeholders.

Investment Topics Stimulating Impact Investing

Demography and the Growing Population. Since 1950, the world's population has tripled, from 2.6 billion to 7.8 billion. Within the next 10 years, the population could reach 8.8 billion, and by 2056 – 10 billion. Population will create both serious challenges and opportunities. Of primary interest will be the impact of these changes on economic growth, future consumption patterns, infrastructure needs, and the extraction and use of scarce resources. Each area has its own investment implications.

Energy Consumption. Energy consumption is the main source of anthropogenic greenhouse gas (GHG) emissions, and as the number of people increases, the demand for energy increases. It is expected that by 2045 the population of cities may increase by 1.5 times. Accelerated urbanization can provide efficiency gains by stimulating structural change, such as reducing transportation costs and achieving economies of scale, as well as improved, sustainable technologies. Green buildings, electric vehicle charging stations, efficient street lighting and other technologies can all represent investment opportunities.

Food Security. According to some scientists, without changing consumer habits, the population of the planet in 2050 will use renewable resources equivalent to 2 planets per year. The agricultural sector will need significant investment in the form of more efficient irrigation methods and GPS-guided fertilizer spreaders (and other new technologies) if crop yields continue to grow steadily.

Ecosystems. Forests are an integral part of the planet's life support system. They are home to half of the world's terrestrial animal species, and more than 1 billion people live in and near forests. Population growth has boosted demand for wood (wood panel trade has increased by 800% in 30 years) and global demand is expected to increase by 37% by 2050, largely driven by urbanization and economic growth stemming from the demand for new housing and new wood products. This growing demand puts the planet at climate risk, given that forests are the second largest carbon store (after the oceans) and have a critical role to play in combating climate change. Institutional investors started to invest into timber as an asset nearly 50 years ago, but total institutional investment is estimated to be less than US$100 billion. Managers expect this figure to rise given the historical investment qualities of timber, such as stable returns, inflation protection and public equity diversification. Demand for forests is also growing as they provide potential carbon sequestration to meet the growing demand for carbon offsets. Living trees as carbon offsets could provide investors with yet another source of income.

Major sovereign wealth funds and pension funds are exploring opportunities to invest in timber. In May 2022, the New Zealand Superannuation Fund appointed a Timberland Investment Group (TIG) fund manager and committed $100 million to BTF II to invest in existing brownfield timberland assets across Latin America. This choice is a continuation of the timber strategy that has identified Latin America as a key destination for capital allocation with attractive risk-adjusted returns [3].

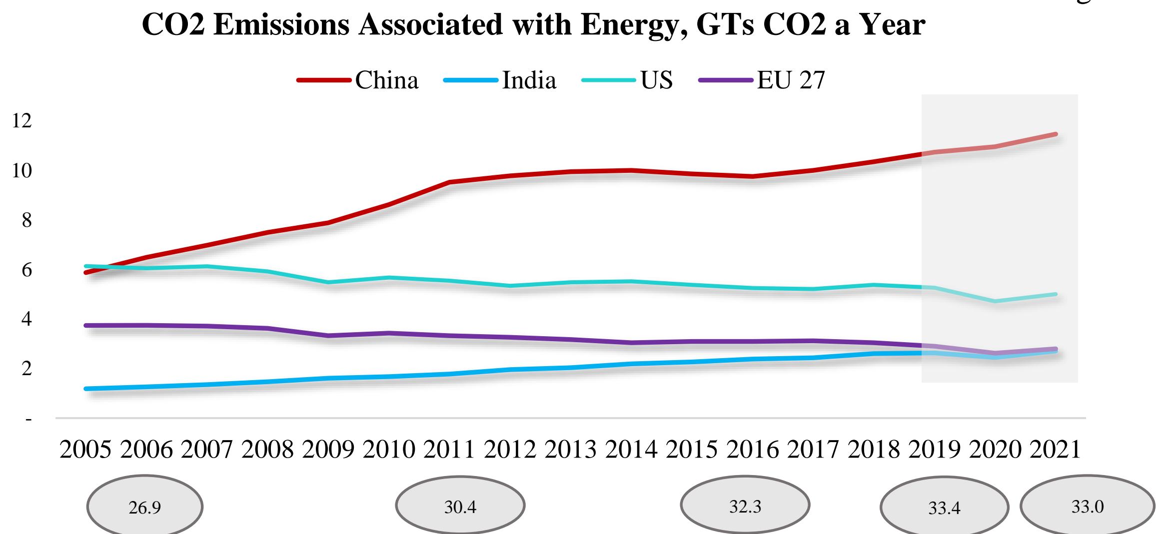
Infrastructure. Research predicts a significant infrastructure investment gap of $94 trillion across 50 economies by 2040. One obvious opportunity lies in energy infrastructure. There are currently 940 million people worldwide without access to electricity, representing potential demand. New energy infrastructure can be based on renewable energy sources, digitalization and decentralization. The World Economic Forum has reviewed the potential path for green energy development based on current transition readiness and performance indicators. In this path, "leading countries" are defined as countries with a high degree of readiness for the transition but with low current performance, indicating the political will to improve, however, at the same time the low level of energy infrastructure and economic development is a constraint. This is where investment opportunities are likely to increase and have a significant impact, especially given the

rapid population growth. In this regard, South Africa, ASEAN, India, and the Middle East countries stand out.

Global Energy Perspective. Reshaping the global greenhouse gas (GHG) emission curve and mitigating the worst effects of climate change remains a major challenge. Geopolitical events and extreme weather in 2022 are a reminder that climate change is already affecting millions of people. According to McKinsey [4], global energy-related CO2 emissions are projected to peak by 2030. By 2050, projected emissions are expected to be 30-70% lower than those in 2019.

Figure 3

CO2 Emissions Associated with Energy, GTs CO2 a Year



Source: McKinsey & Company, as of December 2022

Countries that have committed to or adopted climate plans to reduce emissions in the coming decades account for over 91% of global GDP and about 88% of global CO2 emissions. Corporations are following or are even ahead of government commitments in setting targets to reduce carbon emissions: about 2,000 multinational companies have set science-based targets.

Fundamental Drivers of the Global Energy System. The global energy balance is predicted to rapidly shift towards electrification and hydrogen. The continued decline in energy intensity of GDP is a key factor driven by improved end-use efficiency in buildings, transport and industry. Electrification plays an important role in this, as the transition to electrical solutions tends to be accompanied by efficiency gains in many segments. According to forecasts, the role of electricity in the structure of final consumption will grow from ~20% in 2019 to ~40% by 2050. The corresponding doubling of electricity consumption, combined with hydrogen consumption, is projected to offset fossil fuel consumption, which could be around 40% lower in 2050 compared to 2020. In total, the share of electricity and hydrogen in final consumption can grow to 32% by 2035 and to 50% by 2050.

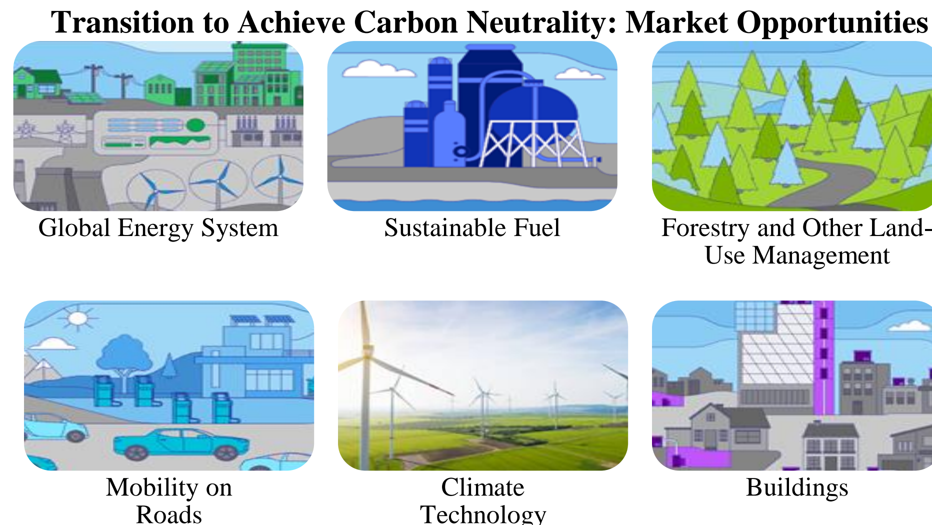
In addition, according to forecasts, renewable energy sources will be leading in the electricity generation mix, reaching 80-90% in 2050. Most of the growth in renewable energy sources is expected to come from solar and onshore wind turbines, which are projected to account for 43% and 26% of generation, respectively, in 2050. Thermal generation is also expected to continue to play an important role as a supplier and provide flexibility, with gas providing a significant share of base generation until 2040 in regions with favorable fuel costs. Moreover, it is expected that nuclear generation will still require economic support at the government level, where it is not yet available, since there are still difficulties in getting nuclear generation approved by society.

While CO2 emissions across the board are expected to decline due to strong policy support and technology improvements, non-energy CO2 emissions (which account for over 40% of emissions and include, for example, emissions from agriculture and deforestation) are projected to

decline at a slower rate than energy-related emissions. Methane accounts for the largest share of non-CO_2 emissions. In 2021, more than 100 major emitting countries committed to the global methane commitment, which aims to reduce methane emissions by 30% by 2030. Achieving this goal requires the introduction of new technologies, such as high-resolution satellite imagery, which can help identify the most polluting sources. Given the significant warming impact of methane, methane emissions need to be cut by 34% by 2030 to keep global temperature rises below the 1.5°C as accepted as part of the Paris Agreement.

Figure 4

Transition to Achieve Carbon Neutrality: Market Opportunities



Within the global energy system, the reallocation of capital towards renewable energy production could create a target market of US$1 trillion to US$1.5 trillion by 2030. The renewable energy sector has one of the largest opportunities for value creation given the expected expansion and capital expenditures in this sector. Opportunities will open up not only for low-emission power generators, but also for suppliers of low-emission power generation equipment, power storage equipment and related services. This includes manufacturers of solar panels and wind turbines, batteries, companies involved in the extraction and processing of minerals needed for batteries and solar panels, such as lithium, rare earth elements, copper and nickel, as well as construction and other companies responsible for construction and operation of new generation networks.

By 2030, the market for clean fuels could exceed $1 trillion. Over the course of this decade, capital expenditures – an average of $400 billion per year – will shift from fossil fuels to sustainable energy sources such as bio- and synthetic fuels. The markets for hydrogen and biofuels will expand along with the market for zero-emission electricity. The transition to low-carbon primary energy could help the growth of companies that supply equipment and services to relevant industries. Electrolyzer manufacturers, for example, may face growing demand for their products given their role in the hydrogen value chain.

By 2050, about $1.3 trillion of capital will be committed to achieving carbon neutrality, mainly for forestry. More than 80% of this capital ($1.04 trillion) needs to be used by 2030. These investments could lead to an additional 100 million hectares of forest cover over the next 5 years. Forests can provide biomass, and reforestation and conservation can create new opportunities in industries such as ecotourism. McKinsey analysis shows that land and water conservation could provide 30 million ecotourism jobs if industry development efforts double by 2030. Sales of low emission vehicles will increase from 5% of global new car sales in 2020 to 60% in 2030. The shift to low-emission vehicles could create opportunities for companies along the value chain. Such opportunities include the production of batteries for electric vehicles and fuel cells; production of materials needed for the manufacture of critical components; building, manufacturing and operating infrastructure for charging battery electric vehicles (BEVs) and refueling fuel cell electric vehicles (FCEVs); and the creation of digital solutions to integrate the new vehicle energy

infrastructure with the power grid. $3.4 trillion a year expected to be spent on low-emission vehicles by 2050.

It is estimated that by 2025, climate technology could attract between US$1.5 trillion and US$2 trillion in capital investment per year. PitchBook estimates that the climate technology market will approach $1.4 trillion in five years, corresponding to a compound annual growth rate of 8.8%. In order to enter and successfully target these markets, established companies, start-ups and investors will need a keen and constantly evolving understanding of technical advances, customer requirements and commitments, and political conditions. There are five technology clusters that could raise about $2 trillion in capital annually by 2025 and reduce 40% of greenhouse gas emissions by 2050. Five areas where climate technologies can be introduced: electrification of transport, buildings and industry; launching a green revolution in agriculture; restructuring the power system to provide clean electricity; hydrogen production; capture, use and storage of carbon. The transition to carbon neutrality in the construction sector implies an increase in the added value for sustainable building materials, low-emission equipment, sustainable design, engineering and construction services, and green technologies and operations. Average annual spending on low-emission heating and cooking equipment between 2020 and 2050 is estimated at $1.7 trillion.

Summing up, it can be noted that the decarbonization of the planet requires changes in all sectors of the economy, in established markets, as well as the creation of new markets. Achieving global carbon neutrality by 2050 could well be the largest reallocation of capital, leading to increased spending ranging from $1 trillion to more than $3.5 trillion a year compared to 2021-2022.

Investment Ecosystem

Socially Responsible Investing (SRI). SRI funds implement public market strategies that use screening and exclusion in the investment process to avoid negative and social impacts for the investor. A typical SRI strategy excludes “sin stocks” such as tobacco, firearms/alcohol companies from the public equity portfolio. Many investors in the 90s considered SRI strategies but decided that investing in terms of values was not their area of expertise, and therefore continued to build portfolios in the traditional way.

ESG Fundamentals. The Sustainability Accounting Standards Board (SASB) was established in 2011 to help standardize the ESG system. Through the work done with institutional investors, asset managers and companies, the SASB released industry guidelines in November 2018 to enable companies to communicate the risks they face beyond traditional financial reporting. Most importantly, SASB made sure that the metrics it included in each structure were financially meaningful. There are several organizations such as Sustainalytics (Morningstar) that assign ESG ratings to public stocks and bonds, allowing investors to gain insight into a company's and portfolio’s exposure to the above risks [5]. However, the same elements are also present in private companies, with fund managers and institutional investors increasing their demands for reporting in this area. European regulators and the CFA Institute consider the implementation of ESG factors as a part of the fiduciary responsibilities of private fund managers. Commitment to the principles of ESG is likely to lead to the fact that there will be a need to create new investment products that will satisfy the demand for ESG.

The US-based SASB has been consulting with investors, companies and asset managers for several years to develop standards that any company can use to identify sustainable business issues relevant to their industry. Recognizing that there is no one-size-fits-all approach, standards have been developed to identify the significant risks faced by each of the 77 industries and provide accounting metrics that cover the reporting of those risks. Although the SASB platform was originally distributed to public market participants, such as public companies and stock analysts, nothing prevents private market participants from using it [6].

The Global Reporting Initiative (GRI) started in 1997 with the development of its first sustainability reporting system. The GRI standards enable any organization – large or small,

private or public – to understand and report on its impact on the economy, the environment and people. They focus primarily on the company's impact on the world – unlike SASB, which looks at how the world can affect the company. The GRI philosophy is about value for all stakeholders, not just shareholders, which is a concept that is gaining popularity around the world, as the desire to extract only profit is recognized as an imperfect goal of a sustainable organization. According to KPMG's 2022 Sustainability Report, 78% of the top 250 companies by revenue adopted the GRI reporting standards, and 68% of the top 5,800 companies used the GRI in 2022.

On April 8, 2021, SASB and GRI jointly released guidance on how their approaches complement each other. According to them, "GRI defines sustainability reporting as the practice of companies to disclose the most significant economic, environmental and social impacts that arise from their corporate activities", while "SASB standards help companies communicate effectively with investors about results activities on a subset of industry-specific sustainability issues that are most relevant in terms of risk, return, and long-term enterprise value" [7].

Impact Investing. This strategy allows investors to directly influence social, corporate and environmental issues, while continuing to increase capital through the financial return on investment. Although impact investing strategies are likely to take into account ESG factors, impact investing itself is characterized by direct investment in private companies, organizations and funds with the dual goal of achieving a return. In addition to providing ethical justification for such requirements, green business practices can also serve as a risk mitigation tool as they force companies to take action to ensure the longevity of their operations and positive impact on society and the environment.

Global Investment Performance Standards

In 2018, the Global Impact Investing Network (GIIN) published its roadmap for future impact investing. One of the points of the action plan was to "strengthen the identity of impact investments" [8]. Two ways have been identified to solve this problem:

1) elaborating key characteristics of impact investing;

2) IRIS+ system, which "helps investors with measuring, managing, and optimizing impact".

This led to some standardization among "impact investors" that had previously been lacking, with a listing of common impact topics and ways in which investors could measure progress against a large number of potential metrics. The GIIN highlights four aspects of impact investing:

1) intentionality. There is a well-designed goal to increase the social and environmental value;

2) financial return. The required return is positive and can range from below market rate to risk-adjusted market rate;

3) range of asset classes. Impact investments seek a financial return on capital that can range from below market rate to risk-adjusted market rate. This distinguishes them from philanthropy;

4) impact measurement. There is a clear commitment to measure and report the social and environmental performance of underlying investments.

Examples of possible impact topics are provided in Table 1.

Table 1

The List of Possible Impact Topics and Examples of Parameters

Impact	Indicative Parameter
Access to main services (financial services, healthcare, education)	• The number of individuals with banks accounts • The number of attended patients • The number of enlisted students

Good quality work, income generation	• The number of new jobs • Average generated income • Staff demography
Affordable housing, development of the infrastructure	• Units of completed construction • The number of individuals who obtained housing
Expansion of rights and opportunities for women	• % portfolio firms or investment funds established or managed by women
Environmental sustainability	• The quantity of planted trees • Reduction of greenhouse gas emissions as a result of using a product or a service

Source: IRIS Catalogue, Global Impact Investing Network

Table 2

The Sample of Funds Specialized in Impact Investments

Fund Name	Manager	Impact Area (s)	Capital Raised ($ mln)
The Rise Fund	TPG Growth	Education, energy, food and agriculture, financial services, healthcare, information and communication technology, industry and infrastructure	2 100,0
Macquarie SBI Infrustructure Fund	Macquarie Asset Management International Finance Corporate State Bank of India	Infrastructure of India	1 170,0
Climate Change Capital Carbon Fund	Climate Change Capital	Clean energy and low carbon economy	1 000,0
Bain Capital Double Impact Fund	Bain Capital	Maximizing financial potential, scaling social and environmental impact	390,0
Green Triangle Forest Trust	New Forests	Sustainable forestry	332,1
Enterprise Housing Partners XXVI	Enterprise Community Partners	Low-income housing	318,0
Turner-Agassi Charter Schools Facilities Fund II	Turner Impact Capital Agassi Ventures	Developing schools in the US in the needing regions	296,3
TVM Healthcare MENA III	TVM Capital Healthcare Partners	Investments in medical companies focused on Southeast Asia and the MENA region (Middle East and North Africa)	250,0

Source: PitchBook | Geography: Global

In a subset of 1,289 organizations tracked by the GIIN, in 2022, the average investment portfolio of impact assets under management was $485 million, while the average investment portfolio was $62.5 million. This indicates that several large organizations are biasing the sample upwards. Excluding 34 entities that artificially raise the average and whose impact on assets under management fell by more than one standard deviation from the average, the average assets under

management amounted to $224.7 million. These 34 large institutions collectively manage $343 billion in impact assets, representing 55% of the impact assets under management for this subgroup. This suggests that the funds allocated by the average organization to the implementation of impact investment strategies remain low. These figures may also reflect an increase in the number of new entrants with less funds to begin with.

According to the GIIN Institutional Asset Owners Survey (2021), the investors included in the sample most often focus on the following sustainable development goals: affordable and clean energy, climate action, urban infrastructure development. Institutional asset managers have largely focused on climate change as a financial risk factor, recognizing the significant negative impacts of climate change on long-term investment strategy and prioritizing climate change action accordingly.

Another standard-setter is the International Finance Corporation (IFC), a sister organization of the World Bank, whose goal is “further economic development by encouraging the growth of productive private enterprise in member countries, especially in less developed areas, thus complementing the work of the International Bank for Reconstruction and Development”. IFC lends directly to businesses to earn a market rate of return on investment that is not available to the World Bank, which can only lend to member governments. In addition, the IFC offers advisory services to support private sector development. Working with businesses, the organization ensures the return on investment it makes in developing countries by requiring that all investment and advisory clients whose projects pass IFC’s initial credit review meet the eight impact criteria contained in its environmental and performance standards [9]. Through standards, the IFC has defined its clients’ responsibilities for managing their environmental and social risks.

Measuring Impact Investing

The main reference points for impact investors are the UN Sustainable Development Goals (UN SDGs), the IRIS catalogue and the Global Impact Investing Rating System (GIIRS). The United Nations Sustainable Development Goals (UNSDGs), developed in 2015 by an assembly of 193 countries, consist of 17 global goals on a wide range of aspects, including poverty, hunger, health, education, climate change, gender equality, water, sanitation, energy, environment and social justice [10]. Accepted by all countries of the world, these goals are a popular basis for evaluating investment impact.

Impact investors around the globe are excited about the prospect of contributing to these global goals. Many have begun to align their portfolios with the UN SDGs, and other investors are using the UN SDGs as a tool to identify and develop impact investing strategies. By articulating standards for sustainable development, the UN SDGs offer guiding metrics to achieve each goal. In some cases, goals have not been translated into investment opportunities because public policy on social goals is better suited to their implementation. However, there are areas where impact investors can use the metrics underpinning each goal when measuring, linking their own metrics to a single goal or using a combination of multiple UN SDGs.

Although the UN SDGs were not specifically designed for the investment community, they have been widely adopted. A 2019 GIIN survey of impact investing organizations found that more than 60% of respondents track the performance of their investments in line with the UN SDGs (up from 42% in 2018). Asset managers see as their goals: decent work and economic growth (73%), poverty eradication (61%), inequality reduction (59%), good health and well-being (58%).

Another popular tool (free to use) is the IRIS+ Directory, a system for tracking and reporting impact performance developed by the GIIN. The IRIS+ is a widely accepted impact accounting system that leading impact investors use to measure, manage and optimize their impact. The IRIS+ provides investors with quantitative and qualitative metrics to track the financial, operational, social/environmental benefits and performance of investees. The value of key indicators is that they allow different investors to compare general data, since these indicators are common for investments with similar investment goals and themes. For example, an investor investing in Financial Inclusion to improve financial health would use the Value of Voluntary

Savings Accounts as a key metric to understand the effectiveness of achieving this goal. In addition, these metrics can function as a stand-alone framework or be combined with the GIIRS, the impact fund rating developed by B-Analytics (an organization also known as B-Corp), to provide a holistic analysis of impact funds and their underlying portfolio companies.

For over a decade, the GIIN has worked with stakeholders from asset owners, asset managers and service providers to develop a framework strategy for investing and reporting on impact investments. In its current form, the IRIS+ consists of 17 impact categories such as agriculture, education, and water resources, as well as areas of investment in each of the categories. For example, food security, small-scale agriculture and its sustainable development are attractive investment areas in agriculture.

The IRIS+ is structured around the principles of social and environmental impact by which impact investors (and the businesses or projects they invest in) define their strategic goals, portfolios and business models. These principles and definitions are based on work done by PRI, IFC, UN Environment Program Finance Initiative (UN Environment Program Finance Initiative), Toniic (Global Community of Active Investors), GOGLA (Global Autonomous Solar Energy Association), FAO (Food and Agriculture organization of the United Nations), SPTF (Social Performance Task Force), Global Reporting Initiative (Global Reporting Initiative), OECD (OECD) and the Global Social Investor Network (GIIN), as well as many other organizations over the past ten years. PitchBook adopts the IRIS+ taxonomy to categorize impact funds. With impact fund labeling on PitchBook, potential investors can not only view a list of over 2,500 impact funds, but also identify funds that most closely match investor impact goals.

Investment Strategies

According to the latest GIIN survey for 2020, approximately 67% of respondents are targeting market returns, with the rest willing to receive below-market returns. In the previous year, more than 70% of funds and non-profit fund managers were aiming for below-market returns, while 79% of private equity investors were aiming for market returns.

Impact funds that focus on market returns are often structured like venture capital or private equity funds with traditional LPAs and fixed investment terms. The investment vehicles used by these fund managers include shareholdings, leverage and hybrid instruments such as income-based financing or convertible bonds.

Some of the impact fund managers accept below-market returns and focus primarily on impact. These investors may also use closed-end fund structures, but predominantly use fixed income instruments for financial returns, focusing on debt investing in riskier but high-performing ventures.

One example on the sub-market return spectrum is low-income housing stocks. Even though they would be managed in a similar way to a traditional private real estate trust, improving home improvement to justify large rent increases (a common avenue for real estate funds to make a profit) defeats the purpose of ensuring low-income housing remains affordable where it is most needed. Investors are warned of below-market returns to prevent rent increases for low-income residents, thereby maintaining property affordability.

Table 3

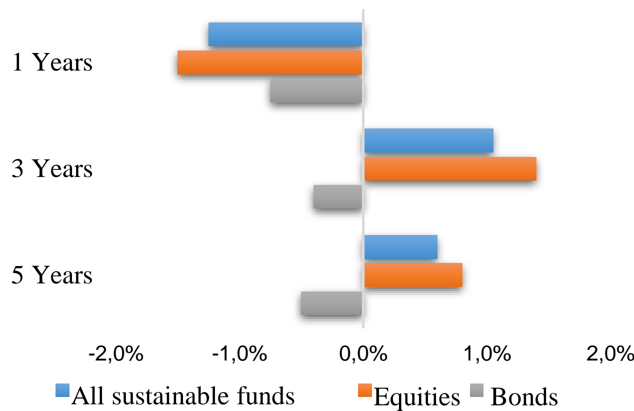
	Returns Below the Market	**Market Returns**
Manager's financial goal	Capital conservation, impact investing as priority	Capital gain (the target of 10%-15% + net IRR)
Instrument	Fixed return	Direct investments, hybrid instruments
Examples	Microfinance, green bonds	Venture capital/private equity funds income-based financing

Source: IRIS Catalogue, Global Investment Network

Performance Indicators of Public Impact Funds in 2022

Figure 5

Average Annual Excess Returns of Sustainable Funds



Source: Morningstar, Barrons

It is worth mentioning that one bad year did not affect the long-term performance of sustainable funds. On average, in 2022, sustainable funds fell short of their targets, however, the trend reversed for most sustainable funds over the three- and five-year periods. Notably, sustainable public equity funds have outperformed their respective category by almost 1.5 percentage points over the past three years, according to Morningstar.

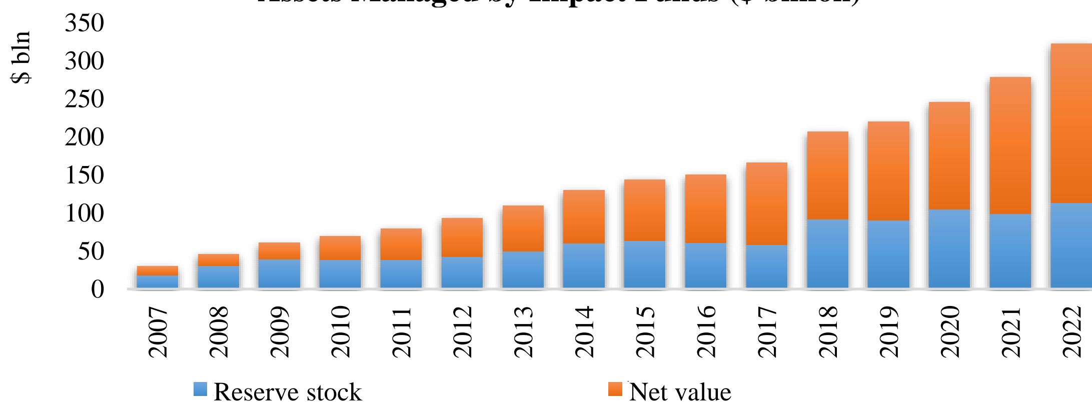
Most sustainable US public funds have performed poorly in 2022, according to Morningstar. Net inflows to US open-ended and exchange-traded sustainable funds fell to $3.1 billion, the lowest level in 7 years, while total assets fell to $286 billion, down 20% from a record high $358 billion at the end of 2021. In addition, for the first time ever, the largest share of sustainable cash flows in 2022 was to fixed income funds. Inflows to sustainable bond funds rose to 3/4 of total inflows, up from 16% in 2021. Over the past 5 years, the number of stable fixed income funds has more than doubled from 47 to 129. A greater choice of fixed income bond funds helps investors allocate capital in bonds in their portfolios, leading to an increase in ESG-focused assets, and, in ultimately contributes to an increase in the inflow of funds.

Impact Funds Broken Down by Strategies, Regions and Impact Categories

At the end of Q3 2022, 85 global impact funds had been launched with an average size of $54 billion. These tools target the full range of private market strategies such as private debt, private equity, venture capital and real assets, as well as global geographies and impact categories. The stock of reserves is about 113.3 billion US dollars, another 209 billion US dollars has already been attracted in the form of unrealized investments. Assets under management of impact funds amount to $322.2 billion [11].

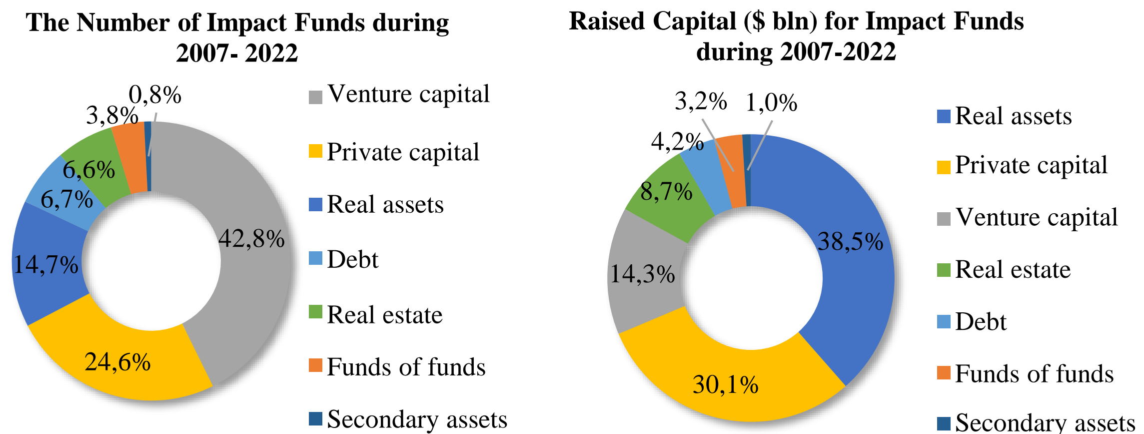
Figure 6

Assets Managed by Impact Funds ($ billion)



Source: PitchBook Analyst: impact investing, 2022

Figure 7

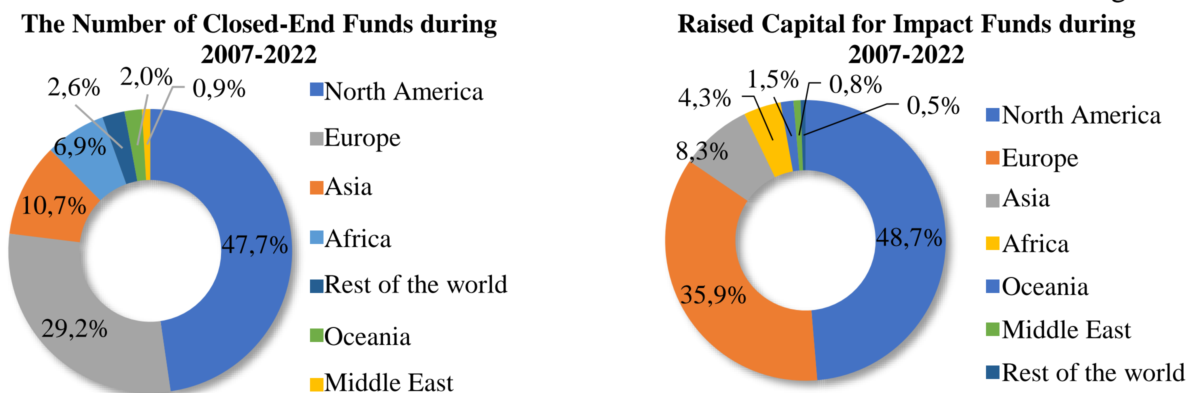


Source: PitchBook Analyst: impact investing, 2022

Venture capital accounted for 42.7% (733) of all closed-end impact funds between 2007 and September 2022, but only 14.3% ($54.5 billion) of total impact capital raised. Meanwhile, private equity accounted for 24.6% (423) of total global impact funds, and 30.1% ($114.9 billion) of total impact capital raised. From 2006 to 2012, private equity accounted for the largest number of impact funds raised, but since 2013, the number of venture capital impact funds raised has been on the rise for several years. Managers see venture capital as a starting point from which companies can begin their journey to create the best products for sustainable development. Managers in portfolio companies of venture funds focus mainly on stakeholders (stakeholders) and shareholders, as well as on the sustainability of business activities.

The largest share of capital raised by impact funds by asset class came from real assets – 38.5% ($146.9 billion) as of the end of Q3 2022. Real asset-focused impact funds typically invest in hospitals, schools, waste disposal systems, energy projects, and broadband expansion. Private equity funds ranked second in terms of impact capital concentration. These funds raised 30.1% ($114.9 billion) of total capital raised by impact funds [11].

Figure 8



Source: PitchBook Analyst: impact investing, 2022

At the end of Q3 2022, the largest number of impact funds were closed in North America - 47.7% (819 impact funds), followed by Europe – 29.2% (502 impact funds). From 2007 to Q3 2022, Europe accounted for the largest share of capital raised – 35.9% ($136.9 billion out of a total impact capital of $381.4 billion), compared to the share of funds raised on the general private capital market – 23.5% ($3,312.9 billion out of total capital $14,109 billion). The data shows that European investors have allocated a significant portion of their investment capital and are focusing

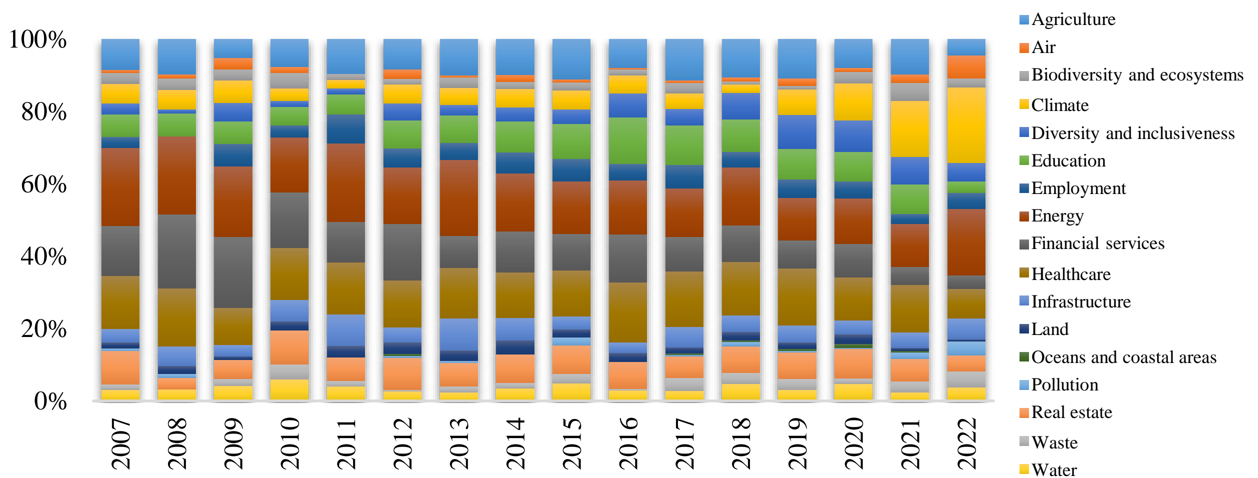
on sustainable investing. Based on total capital raised, North America accounts for the largest share of capital raised by impact funds at 48.7% ($185.57 billion), while the next largest share of capital raised comes from Europe at 35.9% ($136.9 billion) [11].

The PitchBook database uses the IRIS+ category system, which provides specific impact areas that attract the most capital. In terms of the number of global impact funds, the energy sector has been a stable target sector for impact funds (total number of funds closed between 2007 and 2022 is 510), while agricultural land, as a rule, has been less popular since 2007 (the total number of impact funds closed in the period from 2007 to 2022 and aimed at this sector is 73). Based on the volume of funds raised between 2017 and 2021, agriculture and climate are regularly included in the annual group with double-digit funds raised. The number of impact funds focusing on personal diversity and inclusion is also growing: the share of funds raised for this purpose in 2007 was 3% (4 impact funds). Events in 2020 have prompted some managers to address the lack of personal diversity in the private market when it comes to founders, board members, product lines, and investment managers themselves. In the period from 2020 to 2021, a total of 53 impact funds were registered, aimed at personal diversity and inclusiveness [11].

It is worth mentioning that in 2007 most of the funds were concentrated (in terms of capital raised) in financial services, healthcare and energy. For example, in financial services, there were 40 impact funds in 2008 compared to 13 impact funds in 2021. The financial services sector is interesting in that it rarely ranks in the top category in terms of volume of assets raised but has a large number of impact funds, due to the high number of microfinance-focused small funds. In the last 5-10 years, capital attracted to agriculture, climate, diversity and inclusion, water supply has been growing regularly.

Figure 9

The Number of Global Impact Funds, by the year of Closure



Source: PitchBook Analyst: impact investing, 2022

Of note, the healthcare industry accounts for the highest share of impact capital raised in Europe – at 59% ($26 billion), followed by North America at 28% ($13 billion) and the rest of the world at 13% ($5.8 billion) due to the lack of a nationalized health care system as it exists in Europe, so private fund solutions to problems in the health care system are more accessible to investment. Water resources, agriculture, biodiversity, and ecosystems are also top priorities in Europe in terms of asset size (with a total of $53 billion of global impact assets allocated to the region). Energy, air, pollution and waste are the most problematic issues in North America, accounting for a total of $140 billion in global impact finance raising. The rest of the world attracted the most finance in the impact categories of land, oceans and coastal areas, financial services, and employment, accounting for $11.2 billion in global funding. However, in terms of impact capital raised by category in different regions since 2018, the largest category targeted by the European region is energy, which is not only a popular industry but is also capable of absorbing

large amounts of capital. At present, the idea of switching energy from fossil fuels has acquired new relevance due to the geopolitical situation [11].

The Role of Impact Sectors in Investors' Portfolios

The most relevant areas for ESG investments in 2022 are plastic recycling, waste and pollution, water management, natural disasters, cybersecurity, diversity and inclusion in leadership. From an industry perspective, the global waste management market is expected to generate $2.3 trillion in revenue and grow by an average of 5.6% from 2022 to 2027. The Asia Pacific waste market is projected to generate $1.4 trillion in revenue during this period. A growing urban population in emerging market economies, an increasing level of infrastructure development and expanding waste management reforms in this region are the main factors that are expected to drive regional market growth [12]. Another area, the global water industry, presents a diversified set of investment opportunities. It is a $1.1 trillion market, fueled by megatrends such as demographics, a focus on health, sustainability and commercialization. According to a new report by MarketsandMarkets, the global market for IoT systems for disaster detection is projected to grow from $0.3 billion in 2022 to $1.7 billion by 2027, with a CAGR of 36% over this period. Increasing government initiatives to integrate IoT into contingency planning will drive the growth of this market in the coming years.

According to the Future Insights Analysis market research, the global cybersecurity market is expected to grow by 14.5% on average from 2022 to 2030, and by 2030, its value will exceed $390.2 billion. It should be noted that North America dominates the cybersecurity market, with American and Canadian companies occupying the lion's portion of the market, their combined share is more than 70%. This is partly due to the fact that these countries have some of the most advanced cybersecurity infrastructures in the world. In addition, North American companies are at the forefront of cybersecurity innovation, developing some of the most popular and effective solutions in the market today.

Market research firm Fact MR reports that the global diversity and inclusion market is expected to generate $30 billion by 2033, growing by 12.7% on average from 2023 to 2033. The word "corporate culture" has several different meanings. Under certain circumstances, it may refer to mentoring and recognition programs by companies, while in other cases it may refer to the foundations that make up the workforce of companies. The importance of creating a positive corporate culture is emphasized as organizations recognize the growing demand from job seekers. However, beyond the requirement for a positive workplace culture, there is a need for greater personal diversity and inclusion in the modern workplace. In 2023, the global market for diversity and inclusion is worth $9 billion.

Implementing Impact Investing in Private Markets

In 2022, the GIIN published a study showing that over 3,000 organizations currently manage nearly $1.2 trillion in impact assets worldwide. As the UN SDG 2030 target approaches, financial markets are seeing unprecedented commitments from asset owners and managers to provide capital to fill the $4.2 trillion funding gap needed to reach these targets.

The PitchBook's 2022 Sustainability Survey found that asset managers are increasingly getting questions from potential investors. Nearly 52% of respondents consider it important that asset managers measure the social and environmental impact of managing portfolio companies when investors decide to raise funds for or recommend a fund. Some argue that the private equity market has advantages, such as not having to report to shareholders on a quarterly basis, which partly explains the slow transition to ESG by private market funds. However, private markets are the best way to implement the ideas of sustainable investment. To begin with, investors in private markets can afford to invest for the long term, unlike open markets, which are limited by quarterly expectations.

PRI provides a global framework for institutional investors to consider ESG issues. Launched by the UN in 2006, the PRI is a robust set of ESG reporting standards available to

investors to publicly endorse ESG commitment. In addition to providing a resource for ESG-related investment information, being a signatory is a public declaration of an organization's commitment to principles that favor ESG. At the heart of the initiative is the duty of investors to act in the best long-term interests of their beneficiaries, which requires them to consider ESG factors. There are six principles that institutional investors need to apply in order to meet their fiduciary responsibilities [13]:

- Principle 1: Including ESG aspects in the investment analysis and decision-making processes.
- Principle 2: Managing assets in an active manner and including the aspects in the ESG-policy and investment practice.
- Principle 3: Achieving a proper ESG information disclosure from portfolio companies.
- Principle 4: Adopting and implementing PRI Principles in the investment area.
- Principle 5: A joint effort to make implementation of PRI Principles more effective.
- Principle 6: Report on its activities and progress in implementing PRI Principles.

Investors who have signed the PRI can use the IRIS+ catalogue to demonstrate their commitment to responsible investing practices [15]. The use of IRIS supports compliance with Principles 3 (company disclosure) and 6 (transparency to investors and reporting) of the PRI system.

Institutional Limited Partner Association (ILPA) currently collects best practices for investors (limited partners) implementing ESG programs. Investors can submit ideas in several areas, including organizational policy and infrastructure, due diligence and investment decision making, and management of relationships with asset managers[27], which may be used by investors to develop or improve their own practices.

In June 2019, ILPA released Principles 3.0 for investors (limited partners) [15]. These Principles cover economic terms that various investors have combined to define best practice for private market funds. The latest edition included a section on ESG policy and reporting. In November 2021, ILPA fully approved the due diligence questionnaire on responsible investment in private equity from UN PRI (UN PRI's LP Private equity responsible investment due diligence questionnaire) as the ESG section of its due diligence questionnaire template from ILPA [16]. ILPA's Due Diligence Questionnaire, designed to ease the administrative burden placed on investors and asset managers by standardizing the most common and important due diligence questions, includes an ESG section aligned with the PRI's Responsible Investment Due Diligence Questionnaire as well as an expanded questionnaire on diversity, equity and inclusion. ESG standardization is essential to enable investors to make informed decisions and managers to respond to investor inquiries. Combining the approach of these two organizations to collect information on ESG represents another step towards achieving the goal of responsible investing.

ILPA also provides the industry with an ESG roadmap and resources [17]. By incorporating best practices that private market investors can consider implementing in their organizations to advance ESG efforts, the roadmap facilitates the sharing of initiatives and resources on a global basis. The purpose of the roadmap is to provide a catalogue of useful ESG-related resources, outlining specific actions that can be taken to integrate ESG into a company's investment program.

According to the results of the joint survey presented in the report and published by Bain & Company and ILPA, more than 2/3 of respondents said that the ESG Principles play a role in the investment policy of private equity organizations. About 85% of investors include the minimum level of some ESG initiatives, more than half of investors have fully implemented the

[27] A global organization of nearly 600 member institutions representing over $2 trillion in private equity assets under management dedicated solely to advancing the interests of institutional investors and their beneficiaries through education, research, advocacy and networking

ESG policy, and 33% of investors have partially implemented this policy. Overall, ESG policies affect about 76% of the interviewed private equity fund managers.

In summary, the main reasons surveyed investors have incorporated the ESG Principles into their investment policy or approach is that they see them as an adjunct to investment performance and want to offer stakeholder clear information on ESG. A third of respondents explained the inclusion of ESG as a desire to select investments that make a “positive contribution”. Given that ESG is seen as complementary to investment performance being the main reason for incorporating the ESG Principles throughout the lifecycle of an investment, there is a large gap between Europe and North America regarding the implementation of the ESG Principles. Thus, 70% of investors from Europe agreed that ESG obligations affect valuation premiums. However, only 38% of US investors were of the same opinion.

ESG and Impact Investment in Real Estate

In the context of real estate, ESG Principles tend to focus on the environmental dimension. Because the land on which the buildings stand and the properties themselves are highly permanent, resource constraints and climate-related issues are paramount. However, real estate investment also faces social and governance challenges. For this class of assets, there are specific risks associated with interaction with tenants and regulators. In addition, it is worth noting that the risks and opportunities of ESG are not constant for a particular property, but rather will fluctuate depending on the stage of development of the property. For example, supply chain management risk exposure tends to be higher during real estate development, more often carried out under value-added and opportunistic strategies, as construction, refurbishment and renovation are the main sources of risk due to increased supply of services and materials. Likewise, opportunities for value are greater where change is possible and likely. For example, an investor is more likely to benefit from the opportunities associated with the construction of energy efficient buildings during construction and renovation of real estate.

Significant ESG risks and real estate investment opportunities will be relevant to certain strategies, sectors and sub-sectors. Potential ESG risk and opportunity areas include [18]: climate change adaptation, energy and water management, environmental compliance and environmental impact, tenant sustainability impact management, employee engagement, diversity and inclusion, employee health and safety, healthy communities and buildings, supply chain management, business ethics and compliance.

Risks Associated with Impact Investing

According to the Preqin Investor Outlook 2H 2022 Outlook report, the main reason investors do not place a lot of importance on ESG when making investment decisions is data availability. This factor includes lack of information about ESG (37% of respondents), insufficient knowledge on how to take into account ESG data (21% of respondents) and failure to integrate ESG into quantitative models (26% of respondents).

Data and disclosures for ESG metrics are even less transparent and standardized in private markets than in public ones. One of the main concerns when considering impact investing is "green washing" [19]. Generally, “green washing” refers to claims of “achieving” sustainable development, whether through ESG, impact investment, or other means, but without making the effort stated or implied in those claims. Given the many approaches to sustainability, ESG, and impact investment, validating these claims can be quite challenging.

The definition needs to be changed to use a more specific term to refer to inconsistencies, inaccurate information and non-compliance with sustainability commitments. Thus, investors should exercise caution and determine through a detailed analysis of the statements of fund managers and asset managers on the “green washing” factor. Therefore, investors, fund and asset managers, and target companies must actively communicate intentions and actions to determine if sustainability strategies are aligned with the impact philosophy. These steps will help increase investments and benefit all participants involved in impact investing.

Conclusion

As of the end H2 2022, Preqin's survey of respondents showed that 82% of respondents believe that fund managers set ESG policy due to investor demand, 35% cite political pressure. About 66% of respondents indicate the need to comply with industry standards and best practices, 31% - to reduce investment risks. However, the proportion of investors with active ESG policies declined slightly across all asset classes. Among private investors, for example, the number of respondents who said they had an ESG policy fell to 48% from 53% in a similar survey in 2021. Infrastructure investors remain the most exposed to ESG policies (50%), similar to previous survey.

Over the past two decades, private fund managers have voluntarily increased transparency, according to PitchBook. According to a London Business School study by Jefferson Abraham, Marcel Olbert and Florin Vasvari, private fund managers have increased their ESG disclosures, regardless of investment strategy, size, location or industry focus. When counting the number of ESG-related words on the websites of private fund managers to assess the level of disclosure, it was found that the use of these words increased by 200% from 2000 to 2020. The authors of the report also found that this increase in ESG disclosures was associated with a 4.9% increase in private equity fund returns (Net IRR). The increase in disclosures is a side effect of mandatory disclosures among public companies to unregulated private funds; private fund managers have begun voluntarily disclosing ESG information. Using the data on global ESG disclosure requirements, the authors found that private fund managers with portfolio companies based in countries with mandatory ESG disclosure for public companies showed an increase in disclosures. For example, an increase in the fund's investments in portfolio companies by 10 pp in countries with mandatory reporting was associated with a 2.3% increase in environmental disclosures by private foundations.

Many believe that ESG reduces profitability and represents a failure to comply with fiduciary duties. However, eliminating ESG entirely is not a solution to the problem, as failure to assess and address the significant risks associated with ESG may also lead to a breach of fiduciary duty. Many investors and asset managers believe that ESG facilitates the opposite and limits significant risks. Research on how ESG strategies and their performance relate to returns has been heavily biased towards public markets. A study by the New York University Stern Center for Sustainable Business that analyzed over 1,000 research papers from 2015 to 2020 found that "a positive relationship between ESG and financial performance was found in 58% of corporate research on operational performance such as ROI, ROA, or share price, 13% showed a neutral impact, 21% had mixed results, and only 8% showed a negative relationship." In investment studies that typically focused on financial performance measures such as excess returns or the Sharpe ratio for a stock portfolio, 59% showed similar or better performance compared to traditional investment approaches, while only 14% showed negative results. Within a portfolio of alternative instruments, given the variety of approaches to ESG, it would be useful to categorize strategies and make selective investments in certain industries and asset classes, such as infrastructure.

In the long term, asset managers and owners should understand the importance of the Principles for Responsible Investment, integrate its Principles into investment policy, invest in employee education (ILPA Institute ESG courses, IRIS+ demos and webinars, PRI Academy) and build expertise and staffing. For example, institutional investors can partner with ILPA and commit resources to ESG. ILPA provides resources related to institutional investor education, standards and best practices, and regular engagement with regulators and policy makers to ensure ESG disclosure standards are tailored to private markets and support the needs of these investors. Investors understanding the ILPA ESG scoring system could develop an ESG roadmap with the help of ILPA. The ESG Roadmap facilitates the exchange of initiatives and resources on a global basis. The purpose of the roadmap is to provide a catalog of useful ESG-related resources, outlining specific actions that can be taken to integrate ESG into your investment program. In addition, investors can implement the ILPA Due Diligence Questionnaire, which aims to ease the

administrative burden placed on investors and managers by standardizing the most common and important due diligence questions. The PRI's due diligence questionnaire on responsible investing for institutional investors can be used as a starting point for assessing ESG in the due diligence process.

To sum up, the benefits of considering ESG and impact investing when making investment analysis and portfolio building decisions are worth mentioning. The first benefit is that by investing in effective ESG strategies, the institutional investor can create a positive image and attract more foreign and local strategic partners who are aware of the environmental and social impact. In today's competitive environment, the ESG Principles are becoming increasingly important, and institutional investors can stay ahead of the curve in implementing effective ESG strategies. The ESG Principles include work on climate change, human rights, diversity and inclusion, labor practices, product safety standards, corporate governance structures and financial transparency. Taking these factors into account when making investment decisions, asset managers can act responsibly, benefiting all stakeholders (stakeholders): shareholders, employees and society as a whole. The second benefit is the understanding of the importance of responsible investment and the integration of beliefs into investment policy (ESG policy). The third advantage is that any investor can integrate the ESG Principles and their impact into new programs dedicated to private investment and real assets (real estate and infrastructure). You can use the PitchBook database, which also uses the IRIS+ taxonomy to categorize funds into impact categories. Investing in impact themes should be timely because they have a first mover advantage. Given the pressure on the performance of traditional asset classes, thematic investments in real assets (infrastructure and real estate) are likely to attract investors, increasing competition for assets with high risk-adjusted returns.

List of References

1. Morgan Stanley. Sustainable Investments Institute. 2021.
2. The Forum for Sustainable and Responsible Investment. Report on US Sustainable and Impact Investing Trends. 2020.
3. P Morgan Asset Management, Long-Term Market Expectations, 2023.
4. McKinsey Energy Insights, Global Energy Perspective. 2022.
5. Morningstar, Sustainalytics. Risk Ratings of a Company's ESG. 2023.
6. PitchBook. ESG and Private Markets. 2021.
7. A Practical Guide tor Sustainability Reporting. GRI and SASB. 2021.
8. Global Impact Investing Network (GIIN). 2023.
9. International Finance Corporation. ESG Performance Standards. 2023.
10. United Nations Organization. The Sustainable Development Agenda 2030. 2023.
11. PitchBook. Sustainable Investment Survey. 2022.
12. Research Dive, 2023.
13. Principles for Responsible Investment, PRI 2021-2024. 2023.
14. PRI as the Basis of Responsible Investment. IRIS Catalogue of Parameters Supporting Compliance. 2023.
15. Institutional Limited Partners Association. ILPA Principles. 2023
16. New Private Markets. ILPA converges with PRI on DDQ. 2021
17. Institutional Limited Partners Association. ESG Roadmap and Resources. 2023
18. The Sustainability Accounting Standards Board (SASB)/International Sustainability Standards Board (ISSB).
19. Financial Times. The News about ESG in Private Markets are Put to the Test. 2022

Appendix 1

Figure 1

The UN Sustainable Development Goals

An Overview of the Foreign Central Banks' Communication Policy about the Monetary Policy Decisions

Maigozhina G.K. – Chief Specialist, Division of International Financial Organizations, International Cooperation Department, National Bank of the Republic of Kazakhstan
Adilbekova K. – Leading Specialist, Division of International Financial Organizations, International Cooperation Department, National Bank of the Republic of Kazakhstan

One of important factors in enhancing transparency is the understanding that more independent central banks should be more accountable and should explain their actions
IMF

Independence requires transparency
Stefan Ingves, ex-Governor, Riksbank, Sweden

The paper provides a roundup of the information and communication policy of central banks in the course of monetary policy implementation. The authors show that communication can be an important and powerful part of the central bank toolkit, as it can increase predictability of monetary policy decisions, impact financial markets, and potentially help achieve macroeconomic goals.

At the same time, there are differences in the communication strategies of foreign central banks, depending on the degree of development of the economy, the role of the financial and banking sectors in the economy, and institutional characteristics.

Particular attention is paid to the experience of central banks and the information policy tools they use, as well as the consolidated recommendations of the Bank for International Settlements, the European Central Bank and the International Monetary Fund on the implementation of communication policy.

Key Words: monetary policy, inflation targeting, predictability, communication tools, expectations of short-term interest rates, effectiveness of central bank communications, forward guidance, inflation expectations.

JEL-classification: E50, E52, E58.

About Communication Policy

For decades, it has been generally accepted that the secrecy of central banks' (CB) activities makes their monetary policy (MP) more effective. In connection with the transition of New Zealand to inflation targeting in the early 1990s, followed by many other countries, the implementation of this monetary policy regime became an incentive for transparency in the central bank activities and increased public confidence in actions of the regulator. As the National Bank of Poland notes[28], under inflation targeting the CB's information policy becomes its integral function and communication becomes a policy instrument (Dengir et al., 2016).

Communication enhances the effectiveness of monetary policy, helps maintain central bank accountability and, ultimately, independence. In addition, publicly accessible and transparent communication of monetary policy measures affects current inflation expectations, which largely determine the dynamics of inflation and are taken into account when making decisions on the base rate and making economic growth forecasts.

A review of literature on the CB information policy in implementation of monetary policy confirms the view that communication can be an important and effective part of the CB's toolkit,

[28] Nergiz Dincer, Barry Eichengreen and Petra Geraats // Transparency of Monetary Policy in the Post-Crisis World. – 2016. – Narodowy Bank Polski

since it can influence financial markets by "creating news" and "reducing noise", increase predictability of monetary policy decisions, and potentially contribute to the achievement of macroeconomic goals. At the same time, significant differences in the communication strategies of different CBs indicate a lack of consensus on the optimality criteria of the communication strategy.

The world experience of the central bank communication policy really differs significantly depending on the degree of economic development, the role of the financial and banking sectors in the economy, and institutional characteristics. At the same time, an important condition for the communication policy is a sufficiently high level of financial literacy of the population. Central banks of the most developed economies are characterized by the highest degree of transparency, expressed by high literacy of economic agents, including the population.

Given the increased complexity of the factors that underlie monetary policy and the expansion of central bank mandate in many countries following the global financial crisis, communication is becoming increasingly important. Central bank communication influences expectations about future short-term rates, which, in turn, influence long-term rates and prices for financial assets. These prices, for their part, affect macro variables such as inflation and output. At the same time, interest rates and asset prices affect the economy gradually – with long and variable lags.

Importantly, signals from central banks can guide the market expectations of future monetary policy and hence contribute to greater predictability. Meantime, measuring the effectiveness of communication by a central bank is a necessary but not an easy task, since the CB pursues several goals at the same time when communicating with market participants. The medium- and long-term goal of their communications strategy is to anchor market expectations, while in the short term they aim to change current market expectations. In the latter case, it is relatively easy to measure the effectiveness of communication from direct price changes, since the prices of financial assets reflect the effect of communication.

Thus, CBs recognize the importance of the Principles of Transparency, Stability, Accuracy and Clarity in implementing and communicating one of their core mandates. For this purpose, several main tools of MP communication are used: press release, press briefing, expert discussion, interview, publication of a short and/or detailed minutes of the monetary authorities meeting[29].

In other words, the CB communication has evolved from a means of informing the public or financial markets about its activities into the means of monetary policy implementation using the forward guidance tool. According to J. Yellen, the Federal Open Market Committee (FOMC) took an important step to clarify its position when, in January 2012, it first published the "Long-term Objectives and Policy Statement", which contained a summary of the FOMC objectives in conducting monetary policy and the approach as the Committee considers appropriate. The ability of the Federal Reserve System (Fed) to influence economic conditions today is critically dependent on its ability to shape expectations about the future, in particular by facilitating public understanding over the medium term about the Fed's policy and its possible implications for economic conditions.

It is worth noting that, according to the Bank for International Settlements (BIS), forward guidance had the greatest impact on interest rate expectations in Canada, New Zealand, the United States, and Sweden, countries that started using it in the late 1990s and early 2000s. In contrast, the Bank of England and the European Central Bank (ECB) started using forward guidance only in 2013, and by that time, each of the Central Banks was already at the active lower boundary of interest rates.

At the same time, the BIS reports that the history of forward guidance in the vast majority of cases was ambiguous. Messner et al. (2017) agree with this fact, noting the discrepancy between the theoretical and applied literature on forward guidance. Most theoretical studies on forward

[29] Detailed information about the MP communication tools of the BIS Markets Committee member countries is available at: https://www.bis.org/mc/currency_areas.htm?m=3092

references assume a commitment. In practice, however, central banks are rarely taking on commitments. Out of the list of central banks studied by the BIS[30] over the last 32 years, only the Bank of Canada (2009-2010, 2020-2021), Reserve Bank of Australia (2020-2021), Reserve Bank of New Zealand (2020-2021) and Bank of Sweden (2014-2015) ever used forward guidance with commitments. At the same time, there are not enough cases of using forward guidance with commitments to assess its impact on interest rate expectations.

According to experts from the International Monetary Fund, the transparency of central bank actions has a positive effect on its operational independence and contributes to greater predictability, which positively affects market expectations and contributes to the formation of a more predictable economy. For the same reason, within the framework of non-traditional monetary policy instruments, managing expectations through communicative activities, or forward guidance, improves the efficiency of the transmission mechanism and increases the CB's reputational responsibility.

According to a study by Eggertsson and Woodford (2003), such forecasting can help prevent a recession by making commitments to keep the stimulus level longer than otherwise expected after the central bank rate has reached a zero lower bound. Such communication policy lowers expectations about future interest rates (both short-term and long-term).

Having said that, forward guidance is not always able to reduce uncertainty or increase clarity in the transmission mechanism of monetary policy. The experience of the Bank of England in 2013 is a good demonstration of this fact[31]. In August 2013, the Bank of England predicted that the unemployment rate was likely to remain above 7% until mid-2016, but this threshold was already reached at the end of 2013. As a result of difficulties in understanding how the labor market behaves, forecasting was postponed, and in February 2014 the head of the Bank of England, M. Carney, announced that the Bank of England would no longer peg its policy decisions to a certain indicator.

It is worth noting that the "echo chamber" effect, also referred to as the "feedback loop", may be the reason that signals perceived through communication with financial markets can be misleading. For example, what the ECB "hears" may sometimes be not so much what the markets think, but the ECB's own echo. The stronger the forward guidance, the more exacerbated is this problem, causing potential cementation of market expectations (Ehrmann et al., 2019; Sean, 2017), which results in a paradoxical situation where the quality of information about market expectations can be reduced if the ECB makes a large number of forecasts to increase market expectations and reduce volatility (de Guindos, 2019).

Experience of Implementing the MP Communication Policy by Foreign Central Banks

Below we describe communication tools used by some central banks of developed and developing countries.

The Bank of England uses most of the available communication tools and reflects in detail the work of the MP Committee. Thus, since 1997, the Bank of England has been publishing detailed information on decisions on the base rate on its Internet resource – from the number of meetings of the MP Committee to information on the voting results of each member of the Committee. Prior to making a decision on the base rate, the Bank of England's MP Committee meets 4 times – the first 2 meetings are held to inform about the current situation in the country, 2 more – to make a decision. Frequency of decision-making on monetary policy – 8 times a year, published simultaneously on the website of the Bank of England and its main news portals.

The ECB pays special attention to the MP communication issues and emphasizes the importance of forward guidance, whose efficiency, according to the ECB, is directly dependent on

[30] Canada, France, Germany, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, UK and US from 1990 to 2021.
[31] Giles (2014a, 2014b)

the degree of detail and time horizon it covers[32]. The frequency of monetary policy decision-making is six times a year.

The Central Bank of Sweden (Riksbank) and the Central Bank of the Russian Federation (CB RF) also publish information about the procedure for holding events prior to a decision, the decision-making process and methodology, and about the information necessary for making a decision. The information on the CB RF Internet resource, transmitted in a form that is especially accessible to the public, increases the public confidence in the processes of MP implementation. The frequency of monetary policy decisions made by the CB RF is 8 times a year. The frequency of MP decisions taken by the Riksbank is 5 times a year, they are published the day after the meeting of the Monetary Policy Committee.

The Swiss National Bank (SNB) conducts an in-depth evaluation of monetary policy annually in March, June, September and December. Based on the results of each of these evaluations, a decision on monetary policy is made and a medium-term conditional inflation forecast is published. The SNB publishes the rationale for its decisions in a press release and in a quarterly Monetary Policy Report published in the Quarterly Bulletin. The SNB also holds a press conference to clarify its MP after each round of MP evaluation. Frequency of the decision-making on monetary policy is 4 times a year.

The National Bank of Hungary (NBH) is one of the inflation-targeting central banks for which the formation of expectations plays a particularly important role in the monetary policy transmission, and effective communication as a tool of influencing expectations is very significant. An important feature of the Hungarian monetary policy is that the CB applies inflation targeting, and also takes into account the exchange rate corridor. As with the central banks of a number of small open economies, the exchange rate plays a key role in the transmission mechanism. The existence of an exchange rate corridor also affects communication on interest rates. Near the boundary of the corridor, external shocks can lead to an unexpected change in the interest rate, making it difficult for the central bank to maintain consistent interest rate reporting. NBH publishes press releases, minutes of meetings of the Monetary Council (MC), since March 18, 2011, individual minutes of voting of members of the Currency Board of the NBH are published in the form of time series in accordance with the best international practice. While these data have been available in abridged minutes of Council meetings published since December 2004, a structured time series database is better suited for analysis. In addition, as international studies show, the database increases the transparency and accountability of the monetary policy, which, in turn, can help anchor inflationary expectations by strengthening confidence in the Central Bank. The frequency of decision-making on MP is 12 times a year. Council meetings are held twice or at least once a month, in accordance with a pre-announced schedule. Of these meetings, one is a rate-setting meeting each month. The Council sets interest rates by a simple majority of votes of the members present. The Board issues a statement explaining the reasons for its decision on the day the interest rate decision is made. Abbridged minutes of the meetings of the Rate Setting Board are published regularly, prior to the next meeting of the rate setting.

The Federal Reserve System uses all available methods of the monetary policy communication, publishing not only a press release but also short and detailed minutes of meetings of the Board of Governors. In addition, information about the biographical data and the level of professional competence of FOMC members is published. The Fed also holds press briefings and expert discussions to clarify the decisions made. The frequency of decisions on MP is 8 times a year, the results are published immediately after the FOMC meeting.

Such level of transparency implies three major advantages:

1) enhanced accountability that promotes the operational independence of the bank;

[32] ECB Occasional Paper Series: Clear, consistent and engaging: ECB monetary policy communication in a changing world, December 2021, https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op274~9aca14e6f6.en.pdf?a23702e7fbd3176e748c652fe1949d0e

2) more effective monetary policy, which enables households and the private sector to make better-informed decisions about investments and savings;

3) facilitation in maintaining stability of the financial system as a result of communication between the CB and financial organizations.

To that end, the ECB, the Bank of England, or the US Federal Reserve have not only entered uncharted territory with unconventional monetary policy measures but also faced unprecedented challenges given the complex dynamics between monetary policy, fiscal and sovereign debt policy, and an increased focus on financial stability.

The Bank of Japan publishes minutes of meetings and summary information on the positions of the MP Committee members, market transactions. The Bank of Japan does not provide forecasts for changes in the base rate, only the bank's expectations to keep the rate at low levels or reduce it. The frequency of MP decisions is 8 times a year, the results are published immediately after the meeting of the Monetary Policy Committee.

A summarized information on the tools for communicating the monetary policy decisions made by foreign central banks is provided in Appendix 1.

A Synopsis of Recommendations Regarding the Communication Policy

Despite the need to reach a compromise between transparency and the difficulty of communicating the fundamental factors that affect forecasts, open, simple and understandable communication by a central bank is critical to creating conditions for achieving macroeconomic targets. Transparency is a valuable element of effective MP implementation. After all, the opinion that monetary policy, at least in part, is about managing expectations is now a standard practice in academic circles and among central banks.

The BIS believes that financial markets need to understand the factors that influence monetary policy decisions, in particular, how financial stability and sovereign debt aspects affect monetary policy decisions. The central banks of Norway, Canada, Sweden, New Zealand and Australia explicitly take into account financial stability factors in their inflation targeting strategies. High-quality communication of a CB with carefully stylistically and lexically adjusted press releases, speeches of central bank officials helps increase the predictability of monetary policy decisions by "reducing information noise". The predictability of monetary policy is reduced if the CB expresses too many conflicting opinions. There are no conclusive results from a study of the implications of an inflation target or a quantification of price stability. At the same time, there are confirming facts that this helps to consolidate inflationary expectations (the publication of predicted trajectories of changes in the central bank discount rate is practiced in a small number of countries for a short time). It is useful to distinguish between the commitment made in the forward guidance of the MP Committee and the forward guidance perceived by others as a commitment, which is how forward guidance with commitments is often treated in the literature. Whether the CB intended to commit itself can be judged by the language used in forward guidance and by whether the CB states that forward guidance should not be taken as a commitment. At the same time, the "optimality" of the communication policy depends, among other things, on the CB's institutional environment. It is important to enhance the transparency of monetary policy decisions as well as to increase confidence in the work of the regulator through informing about the processes and analytical work that precedes the decision. For example, the Central Bank of Russia publishes in an accessible form complete information on the preparation and communication of the decision on the key rate, the main stages of preparation, parties involved in the process, and explains the decisions following the meeting of the Board of Directors. The MP decision-making structures can play an important role in the effectiveness of communication. The decision-making process may be collegial, in which case the communication of the CB, mainly its Governor, may reflect the consensus opinion of the MPC. At the same time, with an increase in the number of members of the MPC, there may be an increase in differences of opinion and the absence of a unified position regarding the short-term MP. In the case of an individual approach, when taking into account the votes of members of committees/councils on MP in making relevant

decisions, it is important to adapt communication to changes in the decision-making mechanism. If the Governor's statements continue to dominate, this setting does not reflect all opinions in the MPC. It is important that individual views and opinions are reflected in communication so that market participants can have a clearer understanding of the divergence of opinion in each decision, and they are taken into account with equal weight in the decision-making. In this case, communication carries more information, which makes the MP more predictable. Informing about the CB's stance, including in relation to the prospects for economic development and monetary policy, has a significant impact on financial markets. However, according to empirical evidence, official statements, reports and minutes have the most visible and consistent impact on financial markets, data on the impact of public speaking is more inconsistent. Most of the studied CBs publish expanded and/or abridged minutes of MP committee/council meetings in order to increase the transparency of the MP decision-making process and provide economic agents with a deeper understanding of the Council's assessment of current economic conditions. Publication of information about the voting results among members makes the decision makers accountable as to their contribution to the delivering on the price stability mandate.

According to the ECB, most studies to date have been devoted to the CB's communication with financial markets. At the same time, an important component of communication is interaction with the public, which ensures the democratic legitimacy of the central bank and, therefore, its independence, and also since the inflation expectations of the general public ultimately affect the actual dynamics of inflation (through wages and decisions about savings, investment and consumption) and determine whether the CB is able to achieve its policy goals. Confidence in the monetary policy strategy reduces doubt and uncertainty about future price developments and makes inflation expectations less volatile. Communication with the public is the communication channel through which the ECB receives a reaction to communication events and public inflation expectations, which are a measure of public confidence in the information from the ECB, which ultimately contributes to increasing the credibility of monetary policy (de Guindos, 2019). In the ECB's opinion, the exchange of questions and answers on Twitter is considered a useful tool for understanding what issues are important to the general public and for a direct exchange of views. The ECB recommends, within the framework of communication policy implementation, to provide the opportunity to ask questions directly to the CB. The content of the information should be focused on the "reaction mode" of the audience. Research has shown that on the social network, non-specialists participate only to a very small extent in ECB-related Twitter traffic. Compared to expert perception, the general public reacts with a shorter time lag (Ehrmann and Wabtisch, 2021), suggesting that the reaction is not based on a careful assessment of relevant information or news but rather is a sign of rapid momentum. Therefore, there is no need to counter-productively overload the information provided with too much detailed information with high frequency data. Communication in social media should occur with less frequency and be reduced to general, summarizing information at a strategic level. Targeted messages in fairly simple forms of communication are more effective in influencing consumer inflation expectations (Coibion et al., 2019). It is recommended that consideration be given to the establishment of an ad hoc task force on communications. An interesting example of good practice is the creation in the US of a new FOMC communications subcommittee, which was first chaired by J. Yellen, recognizing the need to improve the effectiveness of monetary policy by increasing the CB transparency. At the same time, it is important to send the "right information" to various counterparties, in the right format, using the right style, in the right intensity, tone and frequency.

In the IMF's view, before considering the best ways of communication, it is advisable for the CB to determine the content and target audience of communication. There are three main elements of MP messages that need to be communicated: (1) policy regime, (2) objectives, and (3) decisions with appropriate explanations. In the context of inflation targeting, this means communicating the central bank's mandate to ensure price stability, the numerical inflation target,

and adjusting monetary policy instruments along with their reasons. Based on the studies[33], five key principles of the MP communication have been defined: 1) communication should be clear and transparent, should explain the policy goal and principles as well as the central bank measures and its function; 2) messages should be at different levels for different audiences and segments of the population; 3) messages must be received regularly; 4) information should be equally accessible to all target audiences in a timely manner; 5) despite the expediency of allowing differences in the views of officials, the CB communications should not convey conflicting or confusing messages and should be associated with the institution. The MP committee statement should maintain a broadly identical structure across all releases with a focus on policy discussion and economic analysis. Ideally, the statement is accompanied by a brief presentation to the mass media. Press conferences should be led by the Governor presenting information in basic terms, highlighting key messages. The Monetary Policy Report is to be published on a quarterly basis and supplement information provided through statements and press conferences by providing in-depth analysis of economic developments, the rationale for actions being taken, and alternative scenarios. The most important component of improving the MP communication is the development and formalization of its institutional framework. It is recommended to develop a communication policy and a strategic document that defines how to approach stakeholders, detailing the goals, target audience, channels and tools of communication. In addition to establishing specific responsibilities, defining a budget and an implementation plan, this document helps define the structure of the unit responsible for communications. Consistent and regular evaluation of communication results can help to effectively pursue the MP. For example, if decisions systematically surprise markets, this may indicate a lack of clarity in how the central bank interprets the relationship between macroeconomic events, targets, and actions. To assess the impact of monetary policy announcements on financial markets and the real economy, central banks often rely on high-frequency event studies, looking at changes in key variables over a short time frame. The degree of confidence in the CB can be measured by examining inflation expectations, in particular long-term expectations, as they play a key role in the pursuit of price stability. When measuring the effectiveness of communication, it is important to consider indicators related to both media coverage and sentiment, and they should be measured objectively on a consistent and regular basis. CBs can also use surveys to assess the impact of their communications on various stakeholders and learn their views on monetary policy.

The key message in the CB communication is the monetary policy regime. Regime-related information should be sufficient to reveal the logic behind political decisions. For policy purposes, the CB must also disclose its methods for determining monetary policy parameters. The CB is recommended to report decisions on monetary policy, which must be publicly and immediately updated in order to avoid information asymmetry among economic agents. The CB is recommended to supplement its messages with indications of current plans for future decisions. At the same time, it is important to have comments showing that plans depend on the development of the economy and may change as new available information becomes available. The reasons for MP decisions should be clear: an explanation of the context in which they were taken is required, including an assessment of current economic conditions. Monetary policy decisions must respond to changes in domestic aggregate demand relative to the state of domestic aggregate supply, for which output gap estimates are useful in quantifying emerging inflationary pressures. It is necessary to take into account other factors that play a significant role in the formation of inflationary pressure (the evolution of certain costs and prices, as well as changes in the international macroeconomic environment and financial markets). To increase predictability and help coordinate expectations to influence long-term interest rates and asset prices, interest rate decisions need to be sufficiently long-term with a horizon of several years. Expectations for future interest rate developments will exacerbate the impact on spending, given that firms and households primarily borrow and invest for long periods.

[33] Adrian at al. (2018).

In order to shape expectations further, some CBs publish an endogenous path of the discount rate movement, corresponding to inflation and output forecasts. Others prefer to publish only a qualitative description of the most likely rate path. Central banks that do not describe likely future rates typically condition output and inflation forecasts on a predetermined rate path, assuming rates will remain at current levels, or, alternatively, on market forecasts. The approach taken by some central banks of advanced economies to publish their own base rate forecast has a significant caveat: the public may misunderstand the forecast as a commitment and interpret any future deviation of the actual policy rate from the forecast path as an admission of error.

The base rate numerical target may only change in rare cases and for compelling economic or technical reasons, which should be explained in detail, and not in response to short-term external pressures.

Communication challenges vary greatly, reflecting local economic and institutional conditions in countries. As many advanced economies came close to running out of policy space in the wake of the global financial crisis, communication in the form of forward guidance to directly influence public expectations has become a powerful tool. In emerging markets and developing economies, other challenges have arisen, such as the need for communication to encourage the transition to another regime of monetary policy or to adequately explain policy decisions in the face of multiple goals. The availability of natural resources in some developing countries brings specific challenges and generally reinforces the importance of good communication. Given the frequency and importance of terms-of-trade shocks in such countries, monetary policy often faces trade-offs due to the opposite effects of these shocks on inflation and output. While these compromises may require the CB to temporarily release inflation from the target, such a strategy is only viable if inflation expectations are well anchored, which requires effective communication policies that increase the credibility of the CB. Central banks in advanced economies differ in how open they are about future policy intentions. The ECB, for example, makes verbal hints about future interest rate changes, while the Bank of Sweden publishes the optimal interest rate path in line with its medium-term target. The Fed is taking a different approach, publishing FOMC charts based on individual committee members' expectations of the policy path. Discussion of future political intentions should be clearly conditioned by the central bank's macroeconomic outlook so that they are not misunderstood as commitments. Regular publication of quantitative forward guidance depends on what is known at the time the forecast is made. It is critical to convey the uncertainty underlying the rate forecast, which is most effectively done as a fan chart to avoid the impression of commitment (CBs of New Zealand, Norway, Sweden and the Czech Republic currently follow this practice).

Other CBs prefer not a systematic approach to forward guidance, but only as needed (unconventional forward guidance). This approach was widely used by major central banks in the aftermath of the global financial crisis to provide further monetary stimulus when official rates were at the effective lower bound. By giving advance notice of future policy actions, the central bank sought to lower long-term rates and support economic growth and inflation.

The amount of resources devoted to communication tends to increase with the degree of heterogeneity of the desired audience. Different levels of economic literacy of the population or even a special interest in the CB messages will lead to the need for specially adapted messages. In this regard, the question arises as to whether the CB should focus on any specific groups. The answer must take into account that the average citizen is certainly concerned about inflation and, in most cases, the exchange rate, while a deep understanding of monetary policy tools and strategies can only be of value to the financial community. Incorrect interpretation contributes to the spread of distorted views on the evolution of these indicators. Blinder et al. (2001) divided CB audiences into four groups to better define their specific roles and explain the importance of CB communication with each of them: (1) general public and media, (2) government and parliament, (3) participants in the financial market and (4) experts overseeing the activities of the CB (their independence allows them to either help explain and justify the actions of the CB, or potentially even add volatility to the markets, spreading distorted opinions or guesses about the underlying

intentions of the monetary policy; the IMF recommends establishing good relations with experts-observers and keep them in close contact).

Assessing the impact of the MP report can help determine the most effective channels for providing relevant information to various external stakeholders. By carefully assessing the results of communication, central banks can learn not only about the strengths and weaknesses of various channels, but also about the preferences of multiple audiences. An effective way to monitor expectations is to conduct surveys, both on a regular basis and on an ad hoc basis (should cover both rates and key macro-financial variables: GDP growth, inflation, and the exchange rate). In this regard, the New York Fed's Consumer Expectations Survey is a model for how to properly and effectively complete a household inflation expectations questionnaire.

The CB communication should cover all segments of the population. In order to achieve legitimacy as a body defining the monetary policy, the CB must explain that the objectives of the monetary policy are compatible with the objectives of society as a whole. Therefore, communications should be written for a variety of audiences, from financial markets and opinion makers to politicians and the general public. To do this, the style and form of communication should be built in an appropriate way to inform all stakeholders about political decisions, and be distributed through various channels.

All economic agents should have equal access to the same information. Timely access to data and analysis relating to monetary policy and policy decisions is a necessary condition for maintaining the CB's reputation as an institution operating without the preference of any particular group or individual. In the case of a press briefing at the base rate, there are concerns that not all segments of the population have equal access to information, that is news items may be released with some lag and the time of their posting is not regulated and is not the same for different regions of the country. Considering that official written statements are the first channel of communication, it is recommended to first issue a press release and then hold a press briefing.

In an increasingly integrated world with growing and volatile capital flows, CB communications cannot underestimate the importance of an international audience. To help mitigate the potentially negative effects of international monetary flows and increase the attractiveness of its domestic financial market to foreign investors, proper engagement with international audiences should be part of a communications policy. It is important to share relevant information with the international community.

Communication should be regular. The CB should address its audience systematically – i.e. on certain days and sometimes at certain hours and through established and known channels. The regularity of communication serves as a disciplinary mechanism for regulators to the extent that it requires information to be prepared in advance for release. For market participants, the provision of information on a specific and pre-announced calendar allows them to track, analyze monetary policy, and make economic decisions based on a periodically incoming flow of information in an organized and systematic way.

In addition to the above communication schedule, a "silence" period should be observed. During this period, which should begin at least one week before the meeting of the monetary policy authority, central bank officials are advised to refrain from public comments on matters related to the MP, foreign exchange policy and the economic outlook.

All publications should have a clear message and purpose. They should contain facts that are relevant to the target audience and a clear chain of thought that runs through the entire document. Documents should be structured with the most important parts highlighted so that they can be easily noticed. It is also helpful to have subsection headings that emphasize informative content. The information message should describe in detail the desired impact of the decision on the markets and the economy as a whole in order to shape expectations regarding the future development of policy measures and increase their predictability. It should also clearly indicate the expected response to the factors that shape the inflation forecast in order to achieve the main goal in the medium term. The CB should adopt a standard formula for regular provision of forward-looking communication signals about the inflation outlook and policies. The traditional message

structure consists of a general introductory sentence, followed by information about current inflation and a description of immediate expectations regarding future inflation and price pressures, and ends with a link to the decision and an inflation forecast. The recommended structure of the monetary policy report is: an introductory section (containing the definition of the inflation target, the CB mission and the position of the report in the context of the monetary policy implementation; this section is expected to remain unchanged in the absence of changes in the monetary system), followed by a summary, which is a condensed version of the full document text containing the main ideas. It should be aimed at a group of readers who are unlikely to read the full text of the document, such as managers, politicians and decision makers. The text should aim to tell the story without overemphasizing the numbers, and should be limited to charts and tables. Excessive description of the data can detract from the main ideas and even cause readers to lose interest in the report. The discussion of the forecast should explain the reasons for the change from the forecasts presented in the previous report. In addition, the analysis should consider in detail the risks associated with the forecast, alternative scenarios that take into account the realization of some of these risks.

Posting answers to frequently asked questions (FAQs) about monetary policy on a website is an effective way to provide tailored content. The FAQ section should include questions about the MP basics, policy objectives and instruments, and how the instruments are used to achieve policy objectives. A significant number of resources can be used in this context: visual explanations through videos and infographics, statistical tools that allow generating customized reports, and graphs of data and downloads.

Social networks have become an important tool to help the CB reach a wider audience. By laying out the key monetary policy messages in an accessible way, CBs make it easier for members of the general public to understand the purpose of their policies. Central banks can also receive valuable information from the public by monitoring social media trends and analyzing comments and questions of interest to users.

Many export-oriented economies are choosing to modernize their monetary policy by introducing a flexible exchange rate regime. For countries not burdened with significant unhedged foreign currency debt, exchange rate movements can act as shock absorbers, protecting the economy from excessive volatility. An inflation targeting regime provides the necessary nominal anchor for the economy in an environment of exchange rate flexibility. However, the history of tight exchange rate management usually poses a significant problem for central banks implementing this process. It is usually difficult to shift the attention of the general public from the exchange rate to inflation. The task of the central bank is to convince the public that inflation can be kept under control in the medium term, even in an unstable exchange rate environment.

Effective communication that anchors expectations can help reduce the need to tighten monetary policy in the context of negative trade shocks, allowing for countercyclical policies. Central banks without a well-designed inflation targeting system, when inflation expectations are still poorly anchored, will be forced to respond to inflationary pressures resulting from a terms-of-trade shock. In particular, a significant negative shock, such as a sharp drop in export prices, causes currency depreciation, which leads to higher inflation and at the same time has a negative impact on economic activity. It is not clear how the central bank should react to deal with this shock. Rising inflation could force the CB to raise rates, while a widening output gap suggests a rate cut. Thus, the arguments on the CB's decision should be conveyed to the public in order to keep inflation expectations under control.

Monitoring inflation expectations should always be a priority for a central bank. In particular, it is extremely important to determine whether the expectations correspond to the level that the CB is targeting. To fully assess the degree of anchoring, one should evaluate not only the level but also the dispersion of expectations. According to the IMF experience, the key metrics used to infer the degree of anchoring are: (1) absolute deviations of inflation expectations from the CB target; (2) volatility of inflation expectations over time; (3) dispersion of inflation expectations by individual forecasters or stakeholders; and (4) sensitivity of inflation expectations to surprises

related to current inflation. Higher values of these indicators point to a less reliable fixation of inflation expectations.

The CB should use its official documents, such as the monetary policy report, to discuss recent exchange rate movements and comment on whether they are in line with economic fundamentals. To avoid the perception of a one-way bias, it is recommended to communicate what a certain degree of both appreciation and depreciation of the exchange rate might mean for the inflation forecast.

The IMF recognizes the importance of transparency and actively promotes it. In 2020, the Executive Board adopted a new voluntary Central Bank Transparency Code, which is a comprehensive set of principles covering mandates, functions and operations. Based on the code, the Fund offers CBs the opportunity to participate in a review of their transparency practices (governance, policies, operations, results and relationships with other formal stakeholders such as the government and financial regulators).

List of References

1. BIS Working Papers No. 1020: 'Alternative monetary-policy instruments and limited credibility: an exploration', June 2022.
2. BIS Working Papers No 1024: 'Forward guidance and expectation formation: A narrative approach Monetary and Capital Markets Department', June 2022.
3. IMF Technical Assistance Handbook: 'Central Bank Communications', January 2022.
4. European Parliament's Monetary Dialogue Papers: 'Communication in monetary policy', February 2022.
5. ECB working paper series: 'Central bank communication and monetary policy: a survey of theory and evidence', May, 2008.
6. BIS Working Papers No 1023: 'Monetary policy press releases: an international comparison', June 2022.

Appendix 1

Table 1

Information about the MP Communication by Foreign Central Banks (2023)

Tool / Foreign Bank	Forward Guidance	Official Statements, Press Releases	Press Briefing	Minutes	Decision of Each Member of the Monetary Policy Committee	Forecasts	Other Documents
Fed	+	information about the FOMC decision and assessment of economic events and economic perspectives	+	+ + 3 weeks following the decision	-	+	MP Report to the Congress, public speeches by the FOMC members
Bank of England	+	+ + minutes of MPC meetings	as necessary	+	the decision archive has been published since 1997	+	inflation report, a quarterly report with comments about market development and MP operations
Bank of Japan	+	+	+	+ 8 weeks following the decision	-	about business activity and inflation, economic and financial development	a summary of the MPC positions, economic activity prospects and prices
Riksbank (CB of Sweden)	+	MP Report, press release	+	+ 10 days following the decision	the decision archive has been published since 1999	about economic situation, base rate and inflation	the description of decision-making process
Reserve Bank of New Zealand	+	+	+	+	-	+	-
Central Bank of Iceland	+	+	-	+	-	about inflation, economic forecasts	Monetary bulletin
Norges Bank (CB of Norway)	+	+	+	-	-	+	assessment of monetary policy, MP report
Swiss National Bank	-	press release and the "Assessment of MP" quarterly bulletin	+	-	-	published based on inflation forecast	assessment of monetary policy, MP Report, public

							speeches by the Board members
CB RF	+	Monetary policy report published on the 6th day following the decision publication, press release	+	-	-	+	publication of the description of the decision-making process, annual report, public speeches, meetings in the regions, meetings with experts, meetings with journalists
ECB	+ using indirect signals	publication of the decision about three ECB key rates, MP Statement	+	-	-	+	Publication of a monthly bulletin, messages in the social media (Twitter, Instagram), the ECB Listens portal where the collects opinions and proposals
Bank of Hungary	+	MP Report and the document on interest rate	+	+	the decision archive has been published since 2011	+	-