

N. A. Gumar¹
E.O. Telagussova²
A.Z. Omir³

¹Caspian Public University, Almaty, Kazakhstan

²Abai Kazakh National Pedagogical University, Almaty, Kazakhstan

³Eurasian Technological University, Almaty, Kazakhstan

(E-mail: ¹Gumnaz@mail.ru, ²eostudent@mail.ru, ³Omira_ainura@mail.ru)

Green Bonds in the Development of Sustainable Financing

Abstract. Considering the level of development of financial markets, their efficiency and economic growth rates, it is possible to draw conclusions about the state of national economies and the entire world economy as a whole. Given the strategic importance for economic development, investors and scientists have been considering, studying and analyzing numerous models for a long period of time in order to determine the vector of stock market instruments. To this day, this remains a difficult task. Stock market prices have become even more unpredictable. This is influenced by numerous factors, ranging from economic to specific. Real realities, crises and, accordingly, the volatility of stock markets require an immediate search for both flexible and effective investment tools and methods of forecasting them. The relevance of this study lies precisely in this.

The ESG trend is interesting not only for investors. There is every opportunity to expand the offers, focusing on green bonds in order to further finance sustainable development projects.

Keywords: Green bonds, sustainable financing, ESG, financial instruments.

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Introduction

The success of the green finance market in raising capital for the 2030 agenda is stimulating strong interest in a growing number of countries to develop national green bond mechanisms that link international best practices with local priorities.

Financial markets are a reflection of the state of global and national economies, demonstrating the effectiveness of their development or, conversely, a slowdown in economic growth. Therefore, the key task of investors and researchers for many years has been the development and testing of models for identifying the direction of financial instruments in the stock markets. However, analysis of price movements and behavior in the stock market is extremely complicated due to a number of economic, political, psychological and specific factors. Moreover, the high volatility of stock markets in times of crisis makes it necessary to find the most effective investment tools and optimal methods for predicting their dynamics, which actualized the topic of the research.

The growing interest in ESG from investors is a huge opportunity to expand the product line with a focus on green and other bonds to financing sustainable development projects.

“Green” bonds are one of the assets of responsible investing (ESG), an approach in which the choice of securities is based on environmental, social and governance factors. By investing in “green” bonds, an investor connects his interests with environmental protection, as they are issued to financing environmental projects.

In terms of mechanics, “green” bonds do not differ from conventional bonds - they are the same fixed-income debt securities. In order to obtain official “green” status, the bond issue must comply with special principles - Green Bond Principles (GBP) formulated by the International Capital Markets Association (ICMA) or meet the requirements of the Climate Bonds Initiative.

The European Investment Bank debuted green bonds for the first time in 2007, calling them Climate

Awareness Bonds. The purpose of this placement was to raise funds to finance alternative energy sources. Then the International Bank for Reconstruction and Development issued Green Bonds a year later. Then other supranational institutions and development banks began to issue similar securities. The turning point came in 2013, when large companies entered the market with Green Bonds. Since then, the issuance of such bonds has been growing steadily.

Methodology

The article uses such research methods as analytical method, observation methods, systematic approach, generalization methods.

Discussion

According to the international organization Climate Bonds Initiative by September 30, 2022, cumulative green, social, sustainability, sustainability-linked, and transition bonds captured by Climate Bonds had topped USD3.5tn [1]. Cumulative green bond issuance passed the USD2tn milestone at the end of September (Fig. 1).

The GSS+ market has spread across the globe and now includes debt originating from 99 sources, i.e., 98 countries plus supranational. Supranational remains the largest source with 17% due to its status as the largest component of cumulative sustainability issuance, the second largest contributor to social bonds, and the fifth most prolific source of green bonds. The USA, France, and China are the countries responsible for the largest shares of the GSS+ market.

Cumulative GSS+ debt topped USD3.5tn at the end of Q3 2022

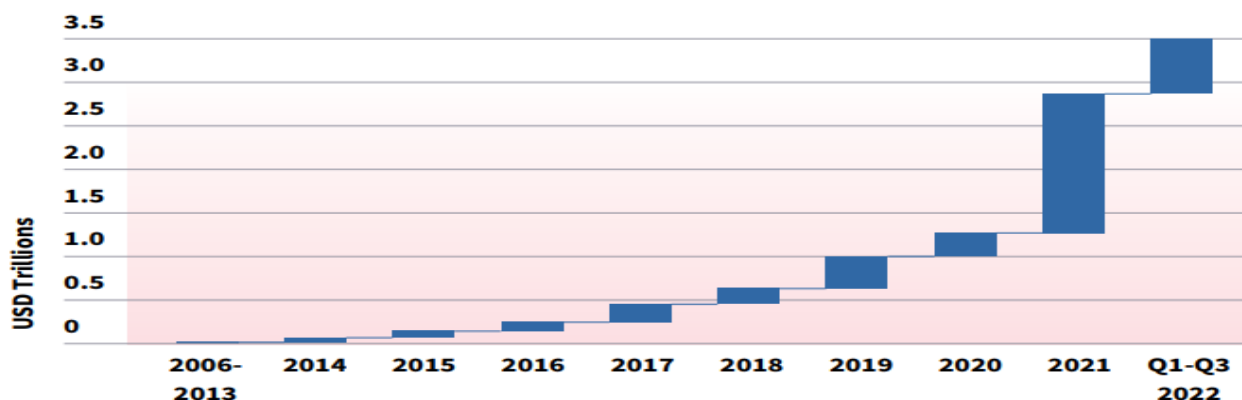


Fig. 1. Cumulative GSS+ debt

GSS+ debt has been issued in 63 currencies, and the concentration is more acute compared to the country breakdown, with 82% of the market being EUR, USD, or CNY denominated. The prominence of the climate agenda in Europe has contributed to the EUR financing 42% of the market, supported by EU sustainable finance regulation, including the EU Taxonomy which enables issuers to easily identify appropriate assets for inclusion in green finance instruments.

Financial corporate, non-financial corporate, local government entities, and development banks together account for 80% of cumulative GSS+ volumes. This reflects the dominance of utilities, banks, and real estate companies in the green bond space, and supranational and development banks in the social and sustainability markets (Fig. 2).

Supranationals are the largest source of GSS+ debt

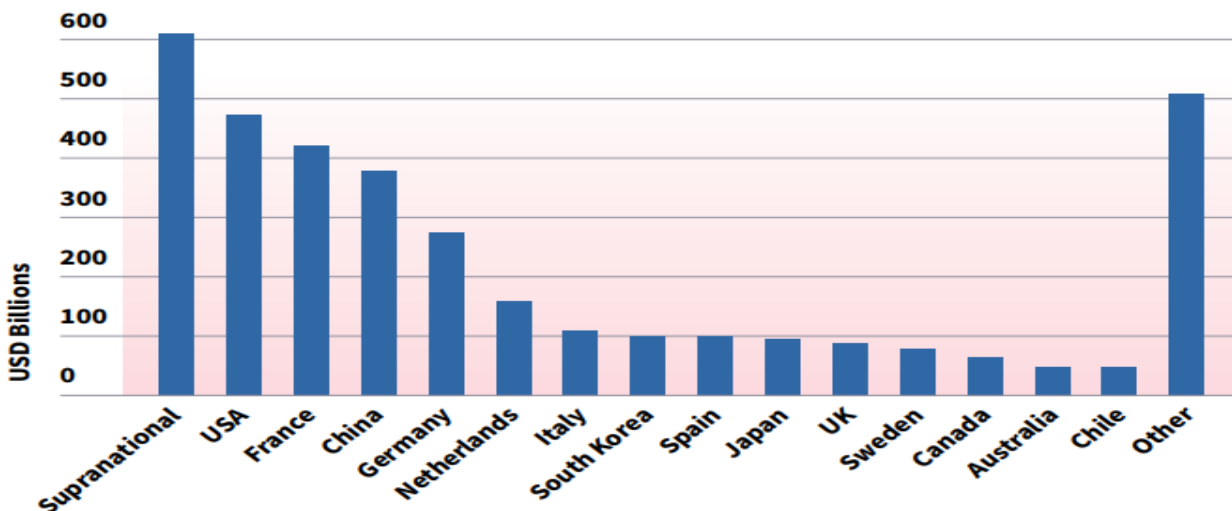
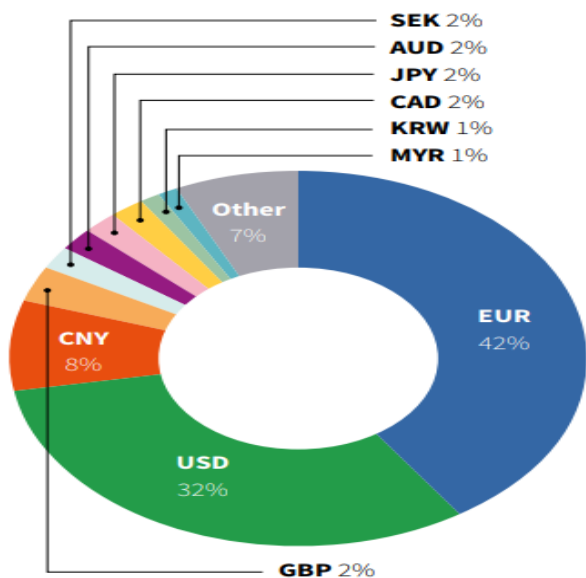


Fig. 2. Sources of GSS+ debt

At the end of Q3 2022, the three largest issuers of GSS+ debt were the World Bank (USD165bn), the European Union (USD141bn), and Caisse d’Amortissement de la Dette Sociale (CADES) (USD120bn). 40 nations have priced sovereign GSS+ bonds with a combined value of USD286bn. However, sovereigns are responsible for just 8% of overall volumes, suggesting huge potential for this issuer type (Fig. 3).

42% of GSS+ volume is EUR denominated



80% of GSS+ debt comes from four issuer types

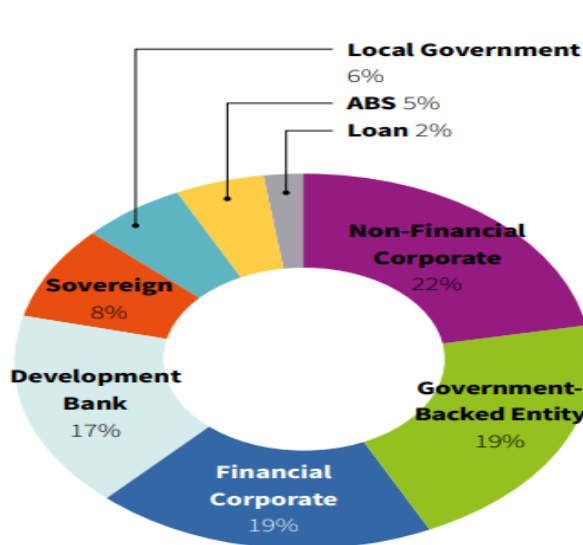


Fig. 3. Issuer types of GSS+ debt

Year-to-date GSS+ volumes Year-to-date (YTD) volumes of GSS+ debt had reached USD635.7bn by the end of Q3. More than half of the total (52%) came from green bonds. Sustainability bonds supplied 22.4%, social 14.8%, SLBs 10%, and transition contributed the smallest share at 0.5% (Fig. 4).

52% of 2022 GSS+ volumes were green

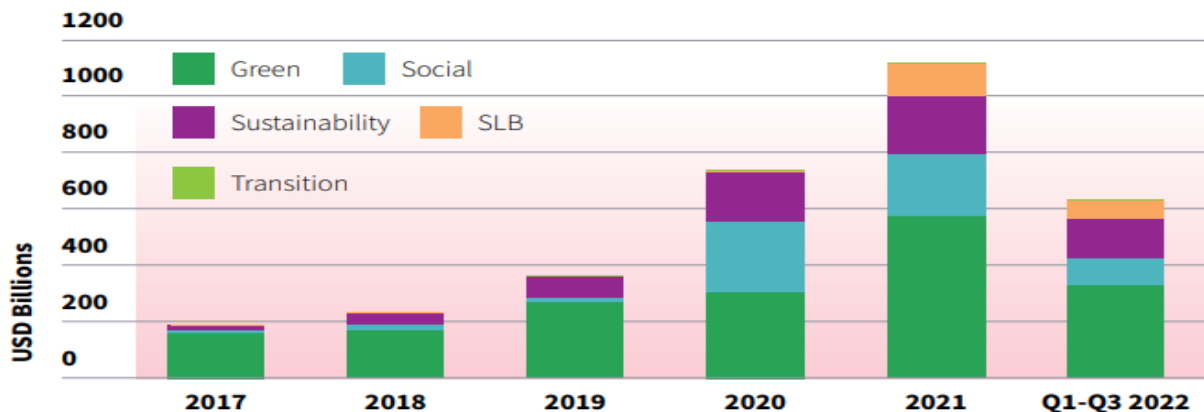


Fig. 4. 2022 GSS+ volumes

At the end of Q3 2022, Climate Bonds had recorded GSS+ bonds from 40 sovereigns with combined volumes of USD286.9bn. Green is the largest component with USD230.9bn from 26 issuers, led by France which as the largest single source of sovereign GSS+ debt had priced volumes of EUR49bn (USD55bn) by the end of September (Fig. 5). In Q3, five sovereign issuers priced GSS+ bonds.

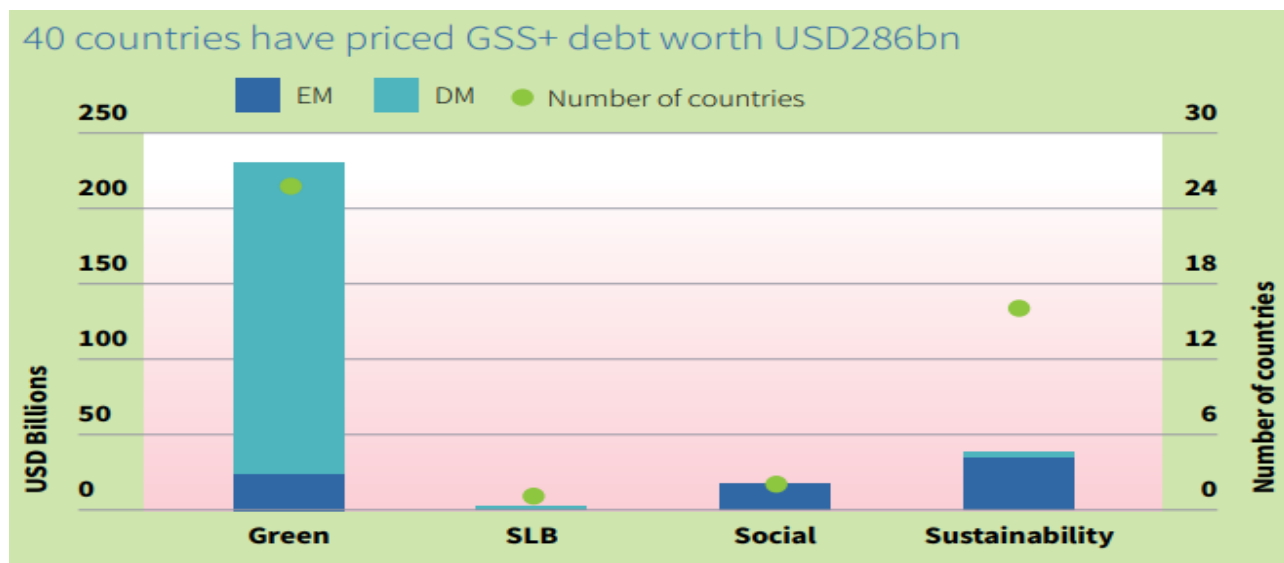


Fig. 5. 2022 GSS+ structure

“Green” bonds are issued by corporations, developers, municipalities, national and regional governments, supranational institutions. Globally, the majority of “green” bonds are issued by financial and manufacturing companies, as well as development banks. The largest issuers include the financial conglomerate Fannie Mae and such companies as SNCF, Berlin Hyp, Apple, Engie, ICBC, Credit Agricole. However, in 2020, the public sector is also actively issuing “green” bonds: central and regional governments and state corporations (Fig. 6).

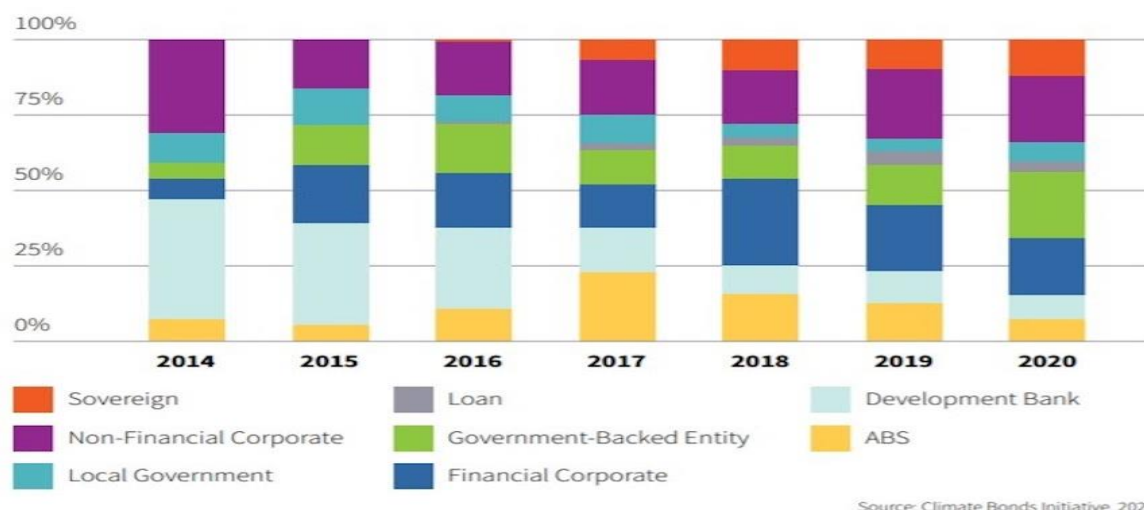


Fig. 6. The share of sovereign bonds among "green" bonds

By issuing "green" bonds, organizations receive a number of significant benefits: improved reputation, inflow of new investors and attraction of resources for eco-projects on favorable terms. In foreign practice, some issuers of "green" bonds receive special benefits. For example, they do not have to pay coupons (interest payments on bonds) themselves - this function is fully or partially assumed by the state. Investors, in their turn, can be exempted from paying income tax on the interest on "green" bonds. The U.S. actions with regard to Clean Renewable Energy Bonds (CREB) and Qualified Energy Conservation Bond (QECCB) are an illustrative example. The government pays 70% coupon on them, so issuers locally benefit from developing alternative energy and resource conservation programs.

Result

As a result, the state receives a guarantee for the implementation of the necessary environmental project, the issuer receives a loan on favorable terms, and investors receive tax-free income. This is another reason for the popularity of "green" bonds.

To track "green" bonds and determine their average profitability, special indices have been created on global exchanges. The largest of these are:

- ✓ Bloomberg Barclays MSCI Green Bond Index
- ✓ S&P Green Bond Index
- ✓ Bank of America Merrill Lynch Green Bond Index
- ✓ The Solactive Green Bond Index

There are also exchange-traded funds which track these indices. For example, iShares Global Green Bond ETF with ticker symbol BGRN and VanEck Vectors Green Bond ETF (GRNB) [2].

To contribute to the development of green finance in Kazakhstan and Central Asia, activities continue to promote green investment principles among financial institutions in Central Asia and to scale up sustainable financing in the region. The volume of green and social bonds issued at the end of 2021 through the CGF was \$158 million (KZT 68 billion) for social and renewable energy and energy efficiency projects. With the comprehensive support of the CGF, the total sustainable financing market in Kazakhstan exceeded USD 250 million (KZT 110 billion).

The ESG-financing market in Kazakhstan is actively developing, new financial instruments and mechanisms to support companies appear. In July 2022 the president of Kazakhstan K. Tokayev said that in 2021 the volume of sustainable financing market in Kazakhstan increased 500 times, exceeding \$ 250 million [3]. According to the Center for Green Finance of the International Financial Center "Astana" (CGF Astana), in

2020-2021, three major green loans totaling \$62 million were issued in Kazakhstan:

- In September 2021, the Eurasian Development Bank (EDB) and Batys Transit JSC signed a \$9.6 million loan agreement to finance the construction and operation of street lighting networks in Atyrau city [4];

- In November 2021, the Development Bank of Kazakhstan provided a \$35.3 million loan (purpose and recipient unknown [5]);

- In December 2021, Halyk Bank issued a \$ 16.5 million loan to Kaz Green Energy company for the construction of bioelectric power plant in Zhezkazgan city [6]. In addition, since 2011, the European Bank for Reconstruction and Development (EBRD) has invested in seven environmental projects in Kazakhstan, a total of \$ 63.12 million [7].

Entrepreneurship Development Fund "Damu" implements several programs aimed at the sustainable development of the economy of Kazakhstan. Three programs of preferential financing are implemented within the framework of the UN Development Program project to reduce the risks of investing in renewable energy sources:

- Subsidizing up to 10% of the loan rate for renewable energy projects [8];

- Subsidizing up to 10% of the loan interest rate for projects with energy saving potential and reduction of greenhouse gas emissions [9];

- SME financing [10].

In addition, Damu is implementing a project to finance SMEs on the principles of Islamic entrepreneurship and participates in a loan guarantee program under the National Entrepreneurship Development Project 2021-2025, aimed at supporting sustainable and green businesses, among others [11].

The first ESG bonds in Kazakhstan were issued in 2020 - the issuer was the state fund for the development of entrepreneurship "Damu" under an agreement with the UN Development Program to reduce the risks of investing in renewable energy sources. The amount was \$420,000 [12].

A total of eight issues of green and social bonds worth \$170 million were conducted, the main issuers being the Asian and Eurasian Development Banks. According to the state program of business support and development, green bonds must meet the standards of CBI (Climate Bond Initiative) [13].

In December 2021, the Government of Kazakhstan approved a taxonomy of green projects to be financed through green bonds and green credits. In the future it is planned to develop a taxonomy of social projects for Kazakhstan and update the existing taxonomy of green projects, taking into account the latest priorities in the decarbonization and energy transformation of the country.

During 2021 the Exchange established ESG infrastructure, defined minimum listing fees, concluded agreements with a number of companies on verification of bonds for compliance with ESG criteria. As of January 1, 2022, there were already six sustainable development bond issues on KASE's official list: three green bond issues worth KZT34 billion and three social bond issues worth over KZT29 billion. In recent years, the green financing market has grown several times over and has become more complex due to the variety of instruments and financing targets [13].

Climate Bonds Initiative accredited AIFC Green Finance Centre

On 23 June 2022 GFC was included in the list of accredited verifiers by an international organization that defines green finance standards globally, the Climate Bonds Initiative. GFC is the only institution in Central Asia recognized by two major international organizations developing sustainable financing principles and taxonomies across the world (ICMA and Climate Bonds Initiative), as well as by the London Stock Exchange for bonds traded under the Sustainable Bond Market (SBM) label.

The status of an accredited verifier allows GFC to verify an issuer's green bond policy and related projects against the CBI Standard and Taxonomy under the Initiative's Certification Scheme. Thus, green bonds of companies that are positively assessed by an accredited verifier, subject to confirmation from the CBI Board, are recognized as certified issues under the CBI Standard.

There are clear certification standards specifically for climate bonds that meet the goals of the Paris Climate Agreement. All issuers, state governments and financial market players work using this scheme. This

is indeed a solution in the fight against climate change.

AIFC Green Finance Centre has been providing external review services for sustainable bonds and loans since 2020. Among the largest projects reviewed by GFC were a green loan from Halyk Bank in the amount of 7.9 billion tenge, as well as green bonds of Samruk-Energy in the amount of 18.4 billion tenge. 60% of green bonds and loans in the Republic of Kazakhstan were externally reviewed by AIFC Green Finance Centre [14].

Sustainable Development Bonds (ESG bonds) are aimed at financing projects in the field of ecology, environmental protection and social field. Both green bonds and social bonds are issued to finance sustainable development projects.

The compliance of green, social bonds with the applicable principles and standards is determined by the relevant authorized body or organizations that independently evaluate funding projects aimed at issuing sustainable development bonds, the list of which is determined by the Exchange.

In order to develop the ESG business, KASE provides relief for the payment of listing fees to issuers of sustainable development bonds, as well as appropriate consulting support (Fig. 7).

SUSTAINABLE FINANCE MARKET IN KAZAKHSTAN

STABLE BOND MARKET EXCEEDS \$250 MILLION IN KAZAKHSTAN

ISSUER / LENDER	CATEGORY	VOLUME	DATE OF ISSUE	MATURITY DATE	COUPON, %
Halyk Bank	Green loan	7 900 000 000 KZT	30.11.21		
JSC "Samruk-Energy"	Green bonds	18 400 000 000 KZT	25.11.21	25.05.28	11,4
Development Bank of Kazakhstan	Green loan	16 950 000 000 KZT	22.11.21	22.11.35	
Eurasian Development Bank	Social bonds	20 000 000 000 KZT	05.11.21	05.11.24	10,6
Eurasian Development Bank	Green bonds	20 000 000 000 KZT	21.09.21	04.10.24	10,5
Eurasian Development Bank	Green loan	3 600 000 000 KZT	20.09.21		
Entrepreneurship Development Fund "Damu"	Social bonds	1 000 000 000 KZT	15.09.21	15.09.26	11,9
Asian Development Bank	Social bonds	8 400 000 000 KZT	15.02.21	17.12.30	10,15
Asian Development Bank	Green bonds	3 875 505 000 KZT	19.11.20	22.10.22	10,12
Asian Development Bank	Green bonds	10 097 018 000 KZT	19.11.20	22.01.23	10,1
Entrepreneurship Development Fund "Damu"	Green bonds	200 000 000 KZT	10.08.20	11.08.23	11,75

Fig. 7. The share of sovereign bonds among "green" bonds
Note – based on the source [15]

Therefore, the following conclusions can be made:

- Kazakhstan began to pursue a policy of sustainable development back in the early 2010s and has one of the most developed ESG legislation in the CIS.
- The key structures in Kazakhstan's ESG agenda include the Ministry of Ecology, Geology and Natural Resources, Astana International Financial Center (AIFC) and AIFC Green Finance Center, Kazakhstan Stock Exchange.
- Kazakhstan's ESG-finance market was estimated at \$250 million in July 2022.
- ESG-reporting in Kazakhstan is voluntary, the possibility of introducing mandatory reporting in the medium term is being discussed. Voluntary reports are prepared by about 57% of listed companies.

- Kazakhstan has its own taxonomy of green projects, it is planned to develop a taxonomy of social projects.
- The leaders of the ESG agenda in Kazakhstan are large oil and gas companies.
- Kazakhstan has set a goal to achieve carbon neutrality by 2060. Kazakhstan has already achieved the first intermediate goal - to achieve 3% of energy generation from RES by 2020; RES account for 4% of electricity generation.

The basis of Kazakhstan's energy sector is made up of coal-fired power plants.

- Carbon exchange in Kazakhstan has been operating since 2013. The cost of carbon units is \$ 1 per ton, which is 50 times less than in the EU and 3.6 times less than in Singapore.
- In 2026, the construction of one of the largest green hydrogen projects in the world will begin in Kazakhstan.

However, it should be noted that there is no general assessment of compliance with ESG principles in Kazakhstan yet. There are no ESG-ratings in Kazakhstan, which would assess compliance with ESG principles, their quality and results, both in the country as a whole, and in the context of companies. The only available rating prepared by PwC Kazakhstan is aimed at evaluation of disclosure of quality and availability of ESG information in public reporting of Kazakhstan companies. There are also separate ratings on selected Kazakhstan companies from Sustainalytics and RAEX-Europe, to a greater extent on companies in the oil and gas sector. Consequently, there is no general assessment of compliance with ESG principles in Kazakhstan yet.

Nevertheless, Kazakhstan is actively advancing in the implementation of and compliance with ESG principles, following the global trend. And here the main task is not just to position itself as a country with socially responsible business activities, but to actually improve the impact on the environment and on important social indicators, which, in addition, will increase the investment attractiveness of the country in the world stage [16].

Conclusion

Strong growth in sustainable bond market to continue in 2022 We forecast that sustainability-themed bonds will continue to grow strongly in 2022. Our Baseline Scenario assumes that new issuance of green, social, sustainability and sustainability-linked bonds will continue to increase at a rate of 35% YOY.

In our Green Growth Scenario new issuance in the sustainable bond market would grow even stronger – by 53% next year. While we don't expect another doubling of the market like in 2021, we are still very confident that sustainable bonds will continue to sharply increase and outperform conventional bonds next year.

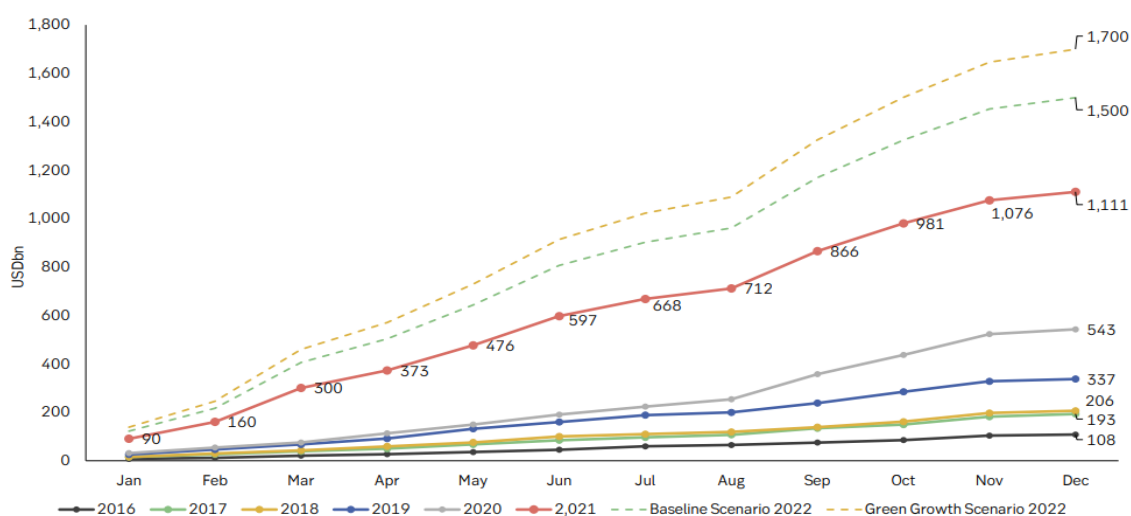


Fig. 8. Cumulative annual sustainable bond issuance

Growth drivers: Carbon and renewable energy prices, COP26, and corporate commitments Driven by a sudden increase in the price for gas, the carbon price under the EU's Emission Trading System has rocketed more than 50% since November 2021. With gas supply in jeopardy due to maintenance of major gas infrastructure and political tensions with Russia, the European benchmark carbon price could hit EUR 100 this winter. This, together with the ever-improving economics of renewables, could drive sustainable bonds next year as more and more corporates want to lower their energy costs and increase security of supply.

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Н. А. Гумар¹, Е.О. Телагусова², А.Ж. Өмір³

¹Каспий қоғамдық университеті, Алматы, Қазақстан

²Қазақ ұлттық педагогикалық университеті, Алматы, Қазақстан

³Еуразия технологиялық университеті, Алматы, Қазақстан

Тұрақты қаржыландыруды дамытудағы жасыл облигациялар

Аннотация. Қаржы нарықтарының даму деңгейін, олардың тиімділігі мен экономикалық өсу қарқынын ескере отырып, ұлттық экономикалардың және жалпы әлемдік экономиканың жай-күйі туралы қорытынды жасауға болады. Экономикалық даму үшін стратегиялық маңыздылығын ескере отырып, инвесторлар мен ғалымдар ұзақ уақыт бойы қор нарығы құралдарының векторын анықтау мақсатында көптеген модельдерді қарастырады, зерттейді және талдайды. Бүгінгі күнге дейін бұл қиын міндет болып қала береді. Қор нарығындағы бағалар одан да күтпеген болды. Бұған экономикалық факторлардан бастап нақты факторларға дейінгі көптеген факторлар әсер етеді. Нақты шындықтар, дағдарыстар және сәйкесінше қор нарықтарының құбылмалылығы инвестициялаудың икемді және тиімді құралдарын да, оларды болжау әдістерін де дереу іздеуді талап етеді. Бұл зерттеудің өзектілігі дәл осы.

ESG тренді тек инвесторлар үшін қызықты емес. Тұрақты даму жобаларын одан әрі қаржыландыру мақсатында жасыл облигацияларға баса назар аударып, ұсыныстарды кеңейтуге барлық мүмкіндіктер бар.

Түйін сөздер: Жасыл облигациялар, тұрақты қаржыландыру, ESG, қаржы құралдары.

Н.А. Гумар¹, Е.О. Телагусова², А.Ж. Омир³

¹Каспийский общественный университет, Алматы, Казахстан

²Казахский национальный педагогический университет, Алматы, Казахстан ³Евразийский технологический университет, Алматы, Казахстан

Зеленые облигации в развитии устойчивого финансирования

Аннотация. Рассматривая уровень развитости финансовых рынков, их эффективность и темпы экономического роста, можно делать выводы о состоянии национальных экономик и всей мировой экономики в целом. Учитывая их стратегическую важность для экономического развития, инвесторы и научные деятели на протяжении длительного периода времени рассматривают, изучают и анализируют многочисленные модели в целях определения вектора инструментов фондового рынка. До сегодняшнего дня это остается сложной задачей. Цены на фондовом рынке стали еще более непредсказуемыми. На это влияют многочисленные факторы, начиная от экономических и заканчивая специфическими. Настоящие реалии, кризисы и, соответственно, волатильность фондовых рынков требуют незамедлительного поиска как гибких и результативных инструментов инвестирования, так и самих методов их прогнозирования. Актуальность данного исследования заключается именно в этом.

Тренд ESG интересен не только инвесторам. Есть все возможности расширить предложения, делая упор на зеленые облигации в целях дальнейшего финансирования проектов устойчивого развития.

Ключевые слова: зеленые облигации, устойчивое финансирование, ESG, финансовые инструменты.

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Information about authors:

Гумар Н.А. – кандидат экономических наук, ассоциированный профессор Каспийского общественного университета, Алматы, Казахстан.

Теләгусова Э.О. – кандидат экономических наук, старший преподаватель Казахского национального педагогического университета им Абая, Алматы, Казахстан.

Өмір А.Ж. – магистр экономических наук, старший преподаватель Евразийского технологического университета, Алматы, Казахстан.

Gumar N.A. – Candidate of Economic Sciences, Associate Professor of the Caspian Public University, Almaty, Kazakhstan.

Telagussova E.O. – Candidate of Economic Sciences, Senior Lecturer of the Abai Kazakh National Pedagogical University, Almaty, Kazakhstan.

Omır A.Zh. – Master of Economics, Senior Lecturer at the Eurasian Technological University, Almaty, Kazakhstan.