Covid-19 Performance Social Bond

The instrument to mitigate the social and economic consequences of the Covid-19 pandemic

🎯 Investment Objective

The Covid-19 PERFORMANCE SOCIAL BOND (the "bond", "instrument", "social bond", "PS") aims to preserve employment to sustain families´ income and the economy as a whole, thus targeting the general population impacted by the Covid-19 pandemic in the EU and minimizing economic inequality within EU States. The bond is well aligned with the ICMA Social Bond Principles (ICMA SBP) and is categorized as a Social Bond within the ESG (environmental, social, governance) framework.

As a social bond debt instrument, the PERFORMANCE SOCIAL BOND allows the investor community to allocate their funds towards the EU Member States´ social needs hit by the pandemic crisis. To achieve and incentivize a fast and socially acceptable recovery that reduces economic inequality, the bond is structured as a secured social performance bond, thus protecting the investor in the case the core objectives are not met and incentivizing EU Member State to achieve the bond´s objectives which in turn reduces the overall financial burden of the bond and thus the recovery.

🎯 Challenges of Covid-19 and Solution

Covid-19 has taken a heavy toll on the European economy, particularly in southern countries like Italy and Spain, where GDP is expected to shrink by over 10% in 20201. A crucial concern is that the economic impact of the pandemic may disproportionately hit the most vulnerable segments of the population, leading to a surge in economic inequality with potential risks for social cohesion and political stability.[2,3]

Although the proposed EU Recovery plan is based on the largest long-term budget in the EU´s history - boosted by NextGenerationEU - it remains unclear how appropriate and effective these policies are, mainly due to a lack of high-frequency indicators allowing the reliable tracking of economic inequality. With the unique tracking methodology proposed in the paper of Aspach et al. (2020)[4], the PS Bond is able to implement high-frequency, high-quality microdata from bank records allowing for monthly adjustments of the bond´s payment structure as well as further adjustments in accordance with the Social Performance Component (SPS) of the PS Bond.

The main objective of the PS Bond is to incentivize policymakers´ selection and execution of socio-economic measures in response to the aftermath of Covid-19´s income inequality increase. This vehicle achieves this objective by providing a framework that allows investors to incentive governments to thrive for an optimized solution to mitigate inequality, thus allowing for an effective social investment approach that fosters an actual reduction in inequality. Financial investors meanwhile benefit from a guarantee offered by the EU, thus reducing overall risk and allowing for a satisfactory return while simultaneously creating measurable social impact and a contribution to a socially acceptable recovery.

📊 High Potential for Scaling / Target Group

Our instrument is based on previous positive experiences with similar instruments and has the potential to be scaled to other markets.

Previous Success

In November 2020, the European Commission launched an EUR 8.5 billion social bond under the EU´s SURE instrument to protect jobs and keep people in work. Investor interest in this highly rated instrument was very strong and the bond was more than 13 times oversubscribed. This translated into favorable pricing terms, meaning that member states received more in loans than they had to repay. This shows what a powerful instrument a European Covid-19 bond can be, and that there is already strong demand for such instruments. In addition, such instruments are also proving to be successful outside the EU, for example the Republic of Korea placed a bond in 2019, which was able to raise over USD 1.5 billion.

Scalability

It is highly plausible that an instrument similar to the European Covid-19 bond could be transferred to other markets such as the United States or countries in Asia. These countries are facing similar challenges in the aftermath of the Covid-19 pandemic and will also need to stabilize their battered economies.

International Financial Guarantors and Co-Investors	European Investment Bank International Finance Corporation European Bank for Reconstruction and Development
Investor Types	State pension funds Private pension funds Insurance companies Impact investors Sovereign funds Endowment funds Asset managers with an ESG focus

🗄 Key Details

Issuer	Member States of the EU Zone through the European Investment Bank (EIB)
Notes	EUR 200,000,000 aggregate principal amount of 2.000% notes due 2031.
Delivery of the Note	The EIB expects to make delivery of the Notes, against payment in same-day funds on or about February 1, 2021.
Maturity Date	The Notes will mature on February 1, 2031.
Interest	The Notes will bear a 2.000% base interest rate. Base interest on the Notes will be adjusted based on the performance of the issuing Member State.
Interest Payment Dates	Interest on the Notes will be paid once each year on February 1 of each year, beginning on February 1, 2022. Interest on the Notes will accrue from February 1, 2021.
Denominations	The Notes will be issued in denominations of EUR 200,000 principal amount and integral multiples of EUR 1,000 in excess thereof.
Social Performance Component (SPC)	Unemployment Rate, weight: 20% GINI Index, weight: 60% Poverty Rate, weight: 20%

👥 Social Performance Component (SPC)

To incentivize policymakers to reduce income inequality, the PS Bond´s coupon is computed based on three performance indicators. The first component factors in the employment market of the issuing Member State while the latter two track inequality-related metrics.

Unemployment Rate

The unemployment rate provides insights into the unused resources of an economy. Restrictions implemented by EU Zone governments to fight against Covid-19 have significantly impaired people´s access to the job market, thereby raising unemployment rates[5]. Economies that will recover quickly should witness a decrease in their unemployment rate. Since such economies can afford to pay higher coupons, the PS Bond is designed so that a reduction in the unemployment rate leads to an increase in the coupon rate. This mechanism, therefore, lowers the financial burden of struggling economies in which the unemployment rate increases over the holding period.

GINI Index

The GINI Index is a widely recognized measure of income inequality within an economy. It ranges from 0 to 1, where 0 implies perfect equality, whereas 1 signifies perfect inequality. Considering that the main objective of the bond is to reduce the inequalities that the Covid-19 has induced, this performance metric is key to the coupon calculations and thus receives the highest weight. In particular, the Member States that manage to reduce their country´s GINI index will enjoy lower coupon payments, thereby reducing their financial burden.

Poverty Rate

The poverty rate measures the ratio of the number of people whose income falls below the poverty line. While reducing inequalities at all income levels is crucial, a focus on the most vulnerable segment of the population is imperative to ensure that each human being enjoys a decent quality of life. Besides, eradication of poverty is the major SDG set by the UN. For this reason, the issuing Member States that successfully deploy their capital to alleviate poverty within their economy are rewarded with lower coupon payment obligations.

A New Model for Social Performance Bonds
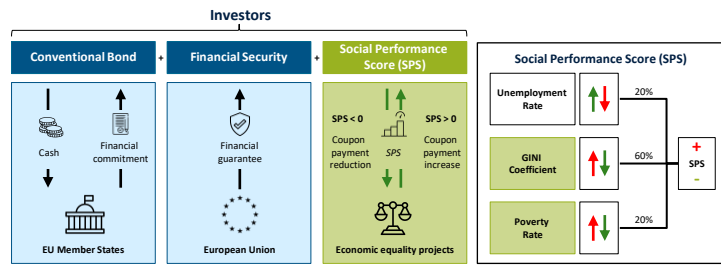
Data & Due Diligence

An important feature of the data we use is linked to its ease of access and its reliability. It is gathered by strongly established statistical offices and federal agencies. For instance, the unemployment rate of a given country is measured by its federal employment agency. Similarly, data regarding the GINI index and the poverty rate is made available by Eurostat or can be derived from national bank records. A sound due diligence is conducted by these organizations, such that the reliability of the data used to compute the PS Bond´s coupon payments is ensured.

Cash Flow Projections – Hypothetical Case for Germany

Best-Case Scenario

In a best-case scenario, Germany can improve each Social Performance Component (SPC) by 2031. More precisely, it is assumed in the model that the country will reach an unemployment rate of 4% (a 32% reduction), a GINI index of 0.25 (a 26% reduction) and a poverty rate of 8% (a 27% reduction) as of February 1, 2031. Initially, it is assumed in the model that the country possesses an unemployment rate of 5.9%[6], a GINI index of 0.34 and a poverty rate of 11% as of February 1, 2021*. The Social Performance Score (SPS) is measured on a year-over-year basis[†] and weights have been chosen to align the bond´s cash flows with its main aim, that is, incentivize policymakers to reduce inequalities. The 2.000% base coupon is then adjusted each period to reflect the country´s performance during the preceding year[‡]. In this best-case scenario, the coupon starts at 0.033% at t=1 and gradually increases to 1.884% at t=10 since year-over-year improvements progressively diminish. The total present value of coupon payments would then amount to EUR 240´734.08[§].

Worst Case

In a worst-case scenario, Germany´s socio-economic situation will deteriorate, such that each SPC is impaired. More precisely, it is assumed in the model that the country will reach an unemployment rate of 8%, a GINI index of 0.40 and a poverty rate of 13% as of February 1, 2031. This implies that the coupon starts at 3.253% at t=1 and gradually decreases to 2.074% at t=10 since year-over-year impairments progressively lessen. The total present value of coupon payments would amount to EUR 259´509.02.

Differential – SPS IMPACT

In comparative terms, Germany´s current savings in a best-case scenario versus a worst-case scenario would amount to EUR 18´774.94 on a EUR 200´000.00 face value PS Bond.

PERFORMANCE SOCIAL BOND: Best Case Scenario

SPC	2019A	2021-02-01	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Unemployment Rate	0,050	0,059	0,052	0,048	0,045	0,043	0,042	0,041	0,041	0,041	0,040	0,040
GINI Coefficient	0,297	0,340	0,309	0,288	0,275	0,266	0,260	0,257	0,254	0,253	0,252	0,250
Poverty Rate	0,090	0,110	0,100	0,093	0,088	0,085	0,083	0,082	0,081	0,081	0,081	0,080

Performance (YOY)	Weights											
Unemployment Rate	20%		-0,67%	-0,43%	-0,28%	-0,18%	-0,12%	-0,08%	-0,05%	-0,03%	-0,02%	-0,04%
GINI Coefficient	60%		-3,15%	-2,05%	-1,33%	-0,87%	-0,56%	-0,37%	-0,24%	-0,15%	-0,10%	-0,19%
Poverty Rate	20%		-1,05%	-0,68%	-0,44%	-0,29%	-0,19%	-0,12%	-0,08%	-0,05%	-0,03%	-0,06%
Best Case SPC			-1,97%	-1,28%	-0,83%	-0,54%	-0,35%	-0,23%	-0,15%	-0,10%	-0,06%	-0,12%

	Base											
Coupon	2,00%		0,03%	0,72%	1,17%	1,46%	1,65%	1,77%	1,85%	1,90%	1,94%	1,88%

in EUR	Face Value											
Cash Flows	200.000	(200.000)	66	1.443	2.338	2.920	3.298	3.544	3.703	3.807	3.875	203.767
Present Value	240.734	(200.000)	66	1.464	2.393	3.012	3.422	3.704	3.887	4.008	4.083	214.694

PERFORMANCE SOCIAL BOND: Worst Case Scenario

SPC	2019A	2021-02-01	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Unemployment Rate	0,050	0,059	0,066	0,071	0,074	0,076	0,078	0,078	0,079	0,079	0,080	0,080
GINI Coefficient	0,297	0,340	0,361	0,375	0,384	0,389	0,393	0,395	0,397	0,398	0,399	0,400
Poverty Rate	0,090	0,110	0,117	0,122	0,125	0,126	0,128	0,128	0,129	0,129	0,130	0,130

Performance (YOY)	Weights											
Unemployment Rate	20%		0,74%	0,48%	0,31%	0,20%	0,13%	0,09%	0,06%	0,04%	0,02%	0,04%
GINI Coefficient	60%		2,10%	1,37%	0,89%	0,58%	0,37%	0,24%	0,16%	0,10%	0,07%	0,12%
Poverty Rate	20%		0,70%	0,46%	0,30%	0,19%	0,12%	0,08%	0,05%	0,03%	0,02%	0,04%
Worst Case SPC			1,25%	0,81%	0,53%	0,34%	0,22%	0,15%	0,09%	0,06%	0,04%	0,07%

	Base											
Coupon	2,00%		3,25%	2,81%	2,53%	2,34%	2,22%	2,15%	2,09%	2,06%	2,04%	2,07%

in EUR	Face Value											
Cash Flows	200.000	(200.000)	6.506	5.629	5.059	4.688	4.447	4.291	4.189	4.123	4.080	204.148
Present Value	259.509	(200.000)	6.549	5.713	5.179	4.836	4.615	4.485	4.396	4.341	4.300	215.096

DIFFERENTIAL: SPS IMPACT

SPC	1	2	3	4	5	6	7	8	9	10
SPS Best Case	-1,97%	-1,28%	-0,83%	-0,54%	-0,35%	-0,23%	-0,15%	-0,10%	-0,06%	-0,12%
SPS Worst Case	1,25%	0,81%	0,53%	0,34%	0,22%	0,15%	0,09%	0,06%	0,04%	0,07%

Risk Factors

Within the SPS, the GINI-Coefficient and the unemployment rate contain various measurement problems. Firstly, the unemployment rate is not differentiating between the European countries´ labor policies, e.g. the short-time work compensation or the suspension of insolvency law in Germany, which lead to a much lower unemployment rate. Still, it is a decisive factor, since the base signaling of the unemployment rate works out despite regional differences and can be considered in the model. Furthermore, the GINI-Coefficient can be criticised[7] for its simple measuring of inequality by not clustering income groups such as the wide-spread middle class in Europe and measuring their economic development. Thus, the coefficient provides a good overall measurement of inequality and displays changes within the countries due to the Covid-19 pandemic.

Besides these factors, our model is built on the fact that the member states will become pandemic it-self within 2021. Current mutations, such as B.1.1.7 are not considered in this model. Furthermore, we assume that the out roll of vaccines is developing well until the end of 2021 and herd immunity will be reached by then. If this does not happen, the current figures would have to be adjusted, since it would harm the possibilities of an economic relief.

Notes

* It is assumed in the model that the Covid-19 has had an adverse effect on each Social Performance Component (SPC). While the unemployment rate assumed for 2021-02-01 is equal to the actual rate observed for 2020-12-31, the GINI index and the poverty rate for 2021-02-01 are assumed to have risen in comparison to their 2019 level. 2019 is the latest year for which Eurostat has published such data[8,9]. On the other hand, the levels considered for 2031-02-01 have been assumed to fit a best-case scenario. The levels assumed for 2022-02-01 until 2030-02-01 have been computed using the following formula : $Lvl_{t=i-1} - ((Lvl_{t=i-1} - Lvl_{t=T})*0.35)$, where $Lvl_{t=i-1}$ represents the SPC level observed in the previous period while $Lvl_{t=T}$ represents the SPC level in the final period (1≤i≤10, T=10). For example, the unemployment rate as of 2022-02-01 in a best-case scenario is given by the following computation : 0.059 − ((0.059 − 0.040)*0.35) = 0.052. This modeling method is used only for simplification purposes. In practice, the SPC levels would be computed using high-frequency, high-quality data provided by banks and federal agencies. In accordance with what Aspach et al. (2020) propose in their paper on wage inequality, the GINI index can be determined by analyzing wage levels in national bank records. This methodology enables the computation of monthly figures for the GINI index and would allow investors to reprice the bond each month since data on unemployment and poverty rates are generally available on a monthly basis too.

[†] The SPC level of the previous year is subtracted to the level of the current year in the Performance (YOY) section. For instance, the unemployment rate of 0.059 (2021-02-01) is subtracted to the one of 0.052 (2022-02-01), which gives -0.007 when rounded (or -0.665%). The Social Performance Score (SPS) is computed as : $-w_{UR}*P_{UR} + w_{GINI} * P_{GINI} + w_{PR} * P_{PR}$, where w_{UR}, w_{GINI}, and w_{PR} are the weights given to each SPC, while P_{UR}, P_{GINI} and P_{PR} is the yearly performance of Germany based on each component.

[‡] The coupon is computed as : $i_{base} + SPS$, where i_{base} is the base coupon rate of 2.000%. In numerical terms, the coupon to be paid on 2022-02-01 in a best-case scenario is equal to 2.000% + (-20% * -0.665% + 60% * -3.150% + 20% * -1.050%) = 0.033%. More complex models involving the normalization of SPCs and the addition of a decay parameter (common in time series analysis) have also been considered. However, for the sake of clarity, they were disregarded in this case.
The Present Value (PV) of cash flows was computed by discounting nominal coupon payments using the spot rates that apply to German government bonds (i.e. yield curve rates).

References

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