

Novartis SLB: twin bond divergence

Umang Vithlani (*), Josephine Richardson, Johan Jarnmo

Novartis AG, a Swiss-based manufacturer of pharmaceuticals and consumer healthcare products, has been a regular issuer in the corporate bond markets for many years. **In September 2020, it issued its first Sustainability-Linked Bond (SLB) into the Eurobond market.**

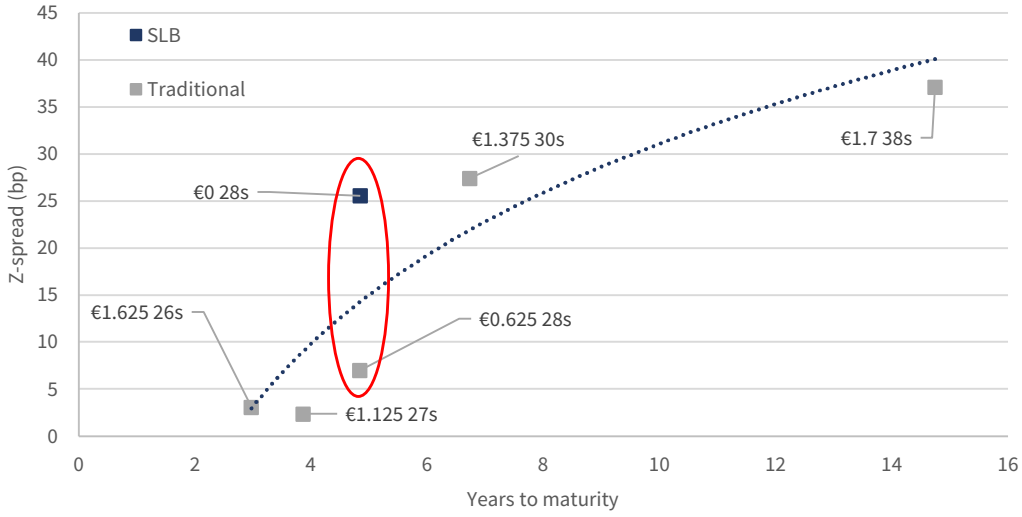
The bond specified two Key Performance Indicators (KPIs) linked to increasing its Patient Reach in low- and middle-income countries. The Sustainability Performance Targets (SPTs) have an observation date in 2025. Novartis' target is to increase the number of patients reached with 'Strategic Innovation Therapies' by 200% compared to 2019, and the number of patients reached with 'Flagship Programs' by 50% compared to 2019.[1]

In its 2022 Integrated Report, Novartis highlighted the good progress it had made and noted that it was on track for achieving its SPTs.[2] Historical KPI data, however, has been volatile, and given there are three years before the target observation, there remains uncertainty over whether the targets will be achieved. **Our analysis estimates the SLB could have an option value of 5bps.**

The Novartis SLB (ISIN XS2235996217) has a 'twin bond', NOVNVX 0.625 09/20/28 (ISIN XS1492825481). The bonds are nearly maturity matched and have close coupons. The presence of a 'twin bond' enables easy pricing comparison. **Whilst these two bonds have historically traded closely, they have diverged in recent months, and are currently at widest levels in the past year.**

The vanilla bond is ECB-eligible, whereas the SLB is not. **As the ECB reduces its holdings, we would expect that flows could further support a convergence between these bonds.**

Figure 1. Novartis EUR bond z-spreads. Source: Bloomberg, accessed 20 Nov 2023.



[1] For full details please see "Sustainability-Linked Bond Documents", Novartis, accessed 20 Nov 2023.
[2] "Novartis in Society Integrated Report 2022", Novartis, accessed 20 Nov 2023.

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(*) Anthropocene Fixed Income Institute (www.anthropocenefii.org), Author for contacts: uvt@anthropocenefii.org

Novartis SLB

Novartis (ticker NOVNVX) specialises in the research, development, manufacturing and marketing of a broad range of innovative pharmaceuticals and cost-saving generic medicines. It offers patent protected prescription medicine and generic pharmaceuticals and biosimilars, and sells its products in about 140 countries, generating most of its revenue from international customers.

Novartis has issued public debt in CHF, USD and EUR currencies. The total amount of debt outstanding as of September 2023 is $25.18bn[3] and it has a composite rating of A+.[4]

In 2020, it issued its inaugural, and to-date only, SLB with an eight-year maturity, NOVNVX 0 09/23/28 (ISIN XS2235996217). It has not issued debt since.

The bond references two specific KPIs for Novartis. These are:

1) Increasing the number of patients reached annually across low- and middle-income countries with Strategic Innovative Therapies; and
2) Increasing the number of patients reached annually across low- and middle-income countries through Novartis' Global Health Flagship Programs.

With regard to these KPIs, Novartis specified the following. Strategic innovative therapies were defined as non-generic therapies commercialised by Novartis' "Innovative Medicines" division and approved by a member of Novartis' Executive Committee. The definition of non-generic therapies was based on factors including, but not limited to: (i) patient impact, e.g. that the treatments address a significant global disease burden, (ii) commercial viability, e.g. that the treatments represent a sustainable commercial opportunity, and (iii) innovative standing, e.g. that the treatments are either comparable or exceed the existing standard of care.

For Novartis' Flagship Programs this includes treatments for leprosy, malaria, sickle cell disease, and a potential new treatment for Chagas disease.

For Patient Reach, this is calculated as annual product sales volume / volume per patient. The KPI would be calculated as the number of patients reached through the eligible medications in the eligible countries per year, added up for all brands under consideration.[5]

The KPIs have a 2025 observation date with the coupon stepping up by 0.25% should it fail to meet one or both of the SPTs, with the coupon stepping up from the first interest payment date after 31 December 2025.

The SPTs associated with these KPIs are:

KPI1 - Strategic Innovative Therapies Patient Reach (annually in millions) to increase by 200% by 2025, to 1.64 million patients from a 2019 baseline of 0.548 million patients.

KPI2 - Flagship Programs Patient Reach (annually in millions) to increase by 50% by 2025, to 22.6 million patients from a 2019 baseline of 15.069 million patients.

[3] "Novartis (NVS) - Total debt", companiesmarketcap.com, accessed 17 Nov 2023.
[4] Sourced from Bloomberg, accessed 17 Nov 2023.
[5] "Second Party Opinion", Sustainalytics, Sep 2020.

Recent sustainability performance

Table 1 shows historic values for the Novartis KPIs, including the latest figures from the Novartis 2022 Integrated Final Report.[2]

Table 1. Novartis historic KPI performance. Source, Sustainalytics, Novartis.

KPI (million of patients)	2017	2018	2019 (baseline)	2020	2021	2022	2025 target
KPI1 Strategic Innovative Therapies Patient Reach	0.24	0.38	0.55	0.70	0.95	1.20	1.64
KPI2 Flagship Programs Patient Reach	39.59	28.51	15.07	43.90	32.70	31.20	22.60

We observe that KPI2 is currently achieved. KPI1, however, is just under 60% of the way with 50% of the time having passed. This is ahead of track on a linear basis, but still has some degree of uncertainty as to whether it can be achieved.

SLB details

In terms of how this feeds into the SLB option pricing,[6] we need to assess the probabilities of each target being achieved. As Table 1 shows, KPI1 is still relatively far away from the target, and KPI2 exhibits a high degree of volatility.

KPI1

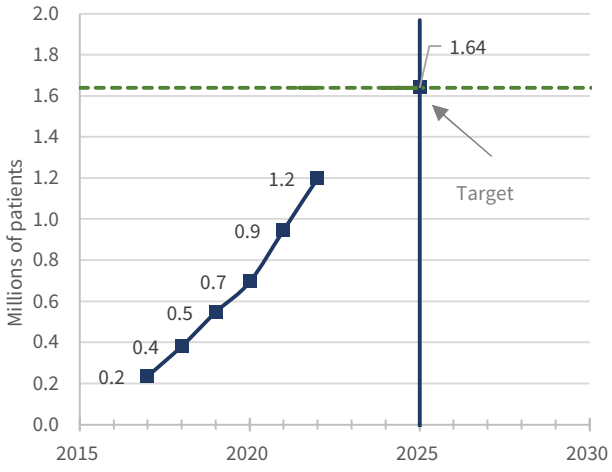
Historical data for KPI1 is shown in Figure 2.

The trend shows a relatively low degree of volatility, and the current extrapolation would suggest the target will be met.

From a modelling point of view, given there are still three years between the last KPI data point and when the target is observed, even a low level of volatility will still create a meaningful chance of a miss.

Extrapolating the trend to a forward price of 2.0, and using the historical volatility of 14%, gives a model implied probability of 19% that the target will be missed.

Figure 2. KPI1 historical data. Source, Novartis.

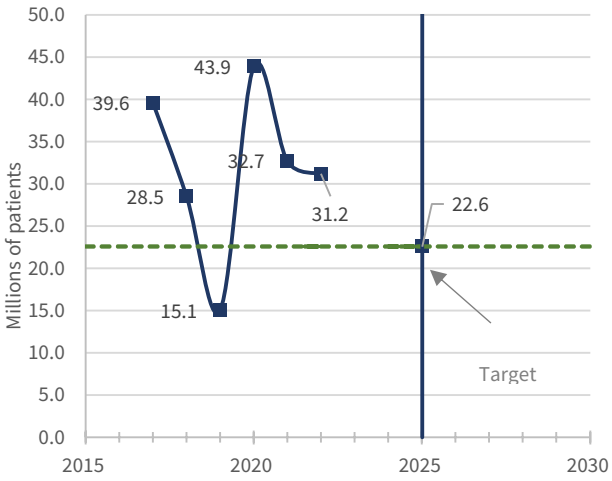


[6] For full details of our approach please see "An option pricing approach for sustainability-linked bonds", AFII, 8 Nov 2022.

KPI2

Historical data for KPI2 is shown in Figure 3.

Figure 3. KPI2 historic data. Source: Novartis.



The most recent three levels have been comfortably above the target, however there is a high degree of volatility.

Using 0% of drift, and 100% volatility (which is the historical figure), the model estimates a 75% probability that the target will be missed. This seems very conservative given how much of the historical period has been spent above the target.

Historically, only 1/6 of the data points (indeed the baseline) have been below the target, so this could provide a probability of 17% of being below the target, which seems more reasonable.[7]

SLB option pricing

The SLB's structure is such that it pays a 0.25% step-up coupon if one or both SPTs is not met.[1] This means that for accurate pricing we need to try and estimate the correlation between the two KPIs.

If SPT1 has a 19% chance of being missed, and SPT2 has a 17% chance of being missed, then the probability of one or more SPT being missed is between 19% (completely correlated) and 36% (completely independent).

We will use 25% to explore the SLB pricing. This gives a total upfront value of 0.223% and a running value of 5bps.

Novartis is a highly rated issuer, with a rating of A+. For context, the current Z-spread is 25bps, so a 5bp option value could be material for bond holders.

Novartis twin bond market pricing

Novartis has two public EUR currency corporate bonds with almost identical maturities, which makes for a nice 'twin bond' comparison.[8]

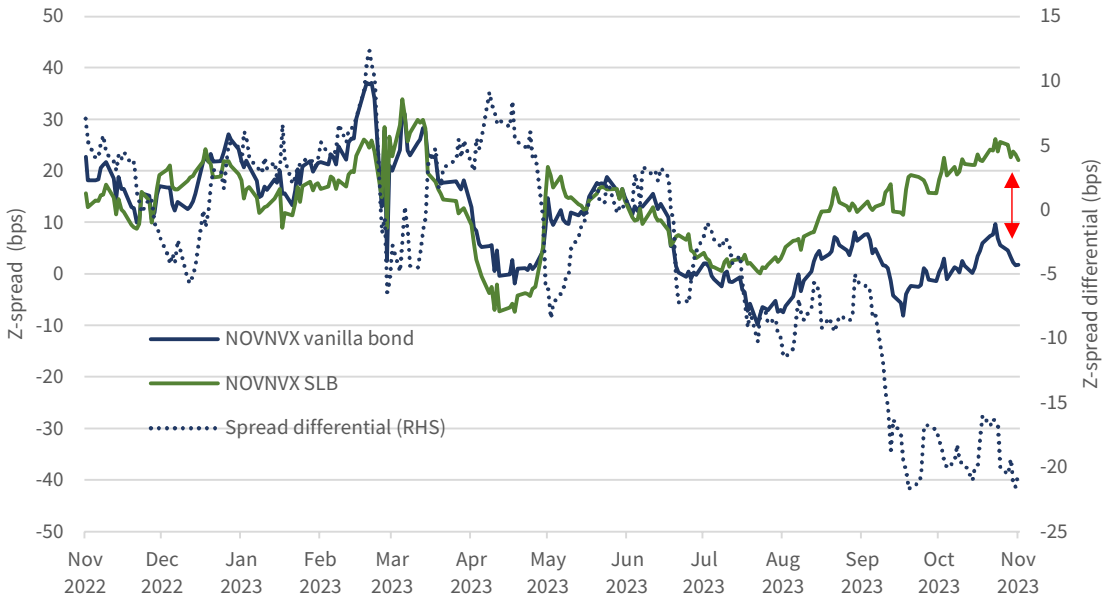
One of which is the SLB NOVNVX 0 09/23/28 (ISIN XS2235996217). It has an issuance size of EUR 1,850,000,000, which is larger than the average issue size for a European Corporate Benchmark Bond, which typically range in size from EUR 500m-1bn. The SLB currently implies a cash price of 85.5, a spread to benchmark of 80bps versus a DBR of 0.25 08/15/28, and a Z-spread of 23bps.[9]

[7] The aim is not to imply accurate probabilities from historical data points, but rather to use the language of probabilities to understand ranges and option valuations for SLBs.
[8] For details of how this works with green bonds please see "Green Bond Risk Premiums: A Twin-Bond ULFP Approach", AFII, 2 Jun 2020.
[9] Pricing from Bloomberg, as of 17 Nov 2023.

In comparison, the NOVNVX 0.625 09/20/28 (XS1492825481) is EUR 500,000,000 in size, and was issued in September 2016. This bond currently implies a cash price of 89.19, a spread to benchmark of 36bps versus a DBR of 0 08/15/26, and a Z-spread of 1.5bps.[9]

Figure 4 shows recent historical spreads for these two bonds, and the spread differential. After historically trading in line with each other, since September they began to diverge, and now have a 20bp differential in terms of z-spread.

Figure 4. Z-spread for Novartis twin bonds. Source: Bloomberg, accessed 17 Nov 2023.



Spread Differential

The spread differential does seem to be at the widest level in the last year. In z-spread terms, before July 2023, the two bonds spent a lot of time quoted in line with each other, with occasional volatility spikes causing the differential to move from a +10 to -10bp range between the two. Now, the differential sits at just north of 20bps and has been stable at this level since the start of October 2023.

If we look at the spread to benchmark, despite their almost exact maturity match, the two bonds have different benchmarks. However, they still traded in a +10bp to -10bp range versus each other until May 2023, with very little volatility. Since then, the differential has widened from this +/-10bp range to now +40bps for the SLB versus the equivalent vanilla bond. Some of this differential can be accounted for given the widening between the two DBR government bonds. Government yields have widened and expressed greater volatility this year but the 20+bp differential from a Z-spread

ECB eligibility

When considering the demand dynamics for corporate bonds, one important factor is whether the bond is eligible for the ECB's corporate sector purchase programmes, the CSPP and PEPP.[10] The

[10] In 2014, the ECB began to purchase corporate bonds as part of its Asset Purchase Programmes to support the market in the global financial crisis. For more details, please see "Asset Purchase Programmes", ECB.

vanilla bond in question, NOVNVX 0.625 09/20/28, is ECB eligible and has been part of the ECB's CSPP and PEPP programs. The SLB, NOVNVX 0 09/23/28 is not ECB eligible.

Interestingly, in the same month that this bond was issued, the ECB adapted its program to accept SLBs as collateral,[11] with potential eligibility for PEPP.

We observe that the bond was never purchased, which leads us to conclude that it did not meet the eligibility criteria as defined below:

"The coupons must be linked to a performance target referring to one or more of the environmental objectives set out in the EU Taxonomy Regulation and/or to one or more of the United Nations Sustainable Development Goals relating to climate change or environmental degradation. This further broadens the universe of Eurosystem-eligible marketable assets and signals the Eurosystem's support for innovation in the area of sustainable finance."[11]

The Novartis KPIs are not linked to an environmental objective and so may not have been considered eligible.

Given the ECB is now in the process of unwinding its asset purchases, we would expect such flows to be negative only for eligible bonds, in this case the vanilla security.[12]

Conclusions

Novartis is one of the few highly rated issuers of SLBs.[13] The SLB in question, issued in September 2020, has two KPIs linked to expanding the reach for Novartis of both its Strategic Innovative Therapies and Global Health Flagship programs. The SPTs were set at increases of 200% and 50% from a 2019 baseline.

According to the company's integrated 2022 Report, it is on track to achieve these targets with 119% and 107% targets achieved, respectively, as of 2022. However, analysis of the historical trends suggests there may still be some uncertainty as to whether the targets can be achieved by the observation date. **Combining this with the fact that the step-up coupon is paid if either target is missed, we estimate its value as 5bps running.**

The SLB has recently moved wide of its nearest vanilla 'twin bond'. This spread, having historically been flat, now shows the SLB trading 20bps wide.

Additionally, the fact that the vanilla bond is eligible for ECB purchases may have provided historical price support. **As the ECB unwinds its purchases,[14] this could cause additional pressure on the spread differential to reduce.**

[11] "ECB to accept sustainability-linked bonds as collateral", ECB, 22 Sep 2020.
[12] "End of an era as ECB winds down net asset purchases", IFR, 1 Jul 2022.
[13] We see SLBs used more by high-yield and less well-rated issuers, see "SLBs: complementary, my dear Investor", AFII, 13 Apr 2023.
[14] For an analysis of the climate impact of the ECB policy shift please see "ECB climate policy shift and EUR bond dynamics", AFII, 11 Jan 2023.

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