Case study

Structured products growth – where does it come from?

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SPi STRUCTURED PRODUCTS iNTELLIGENCE

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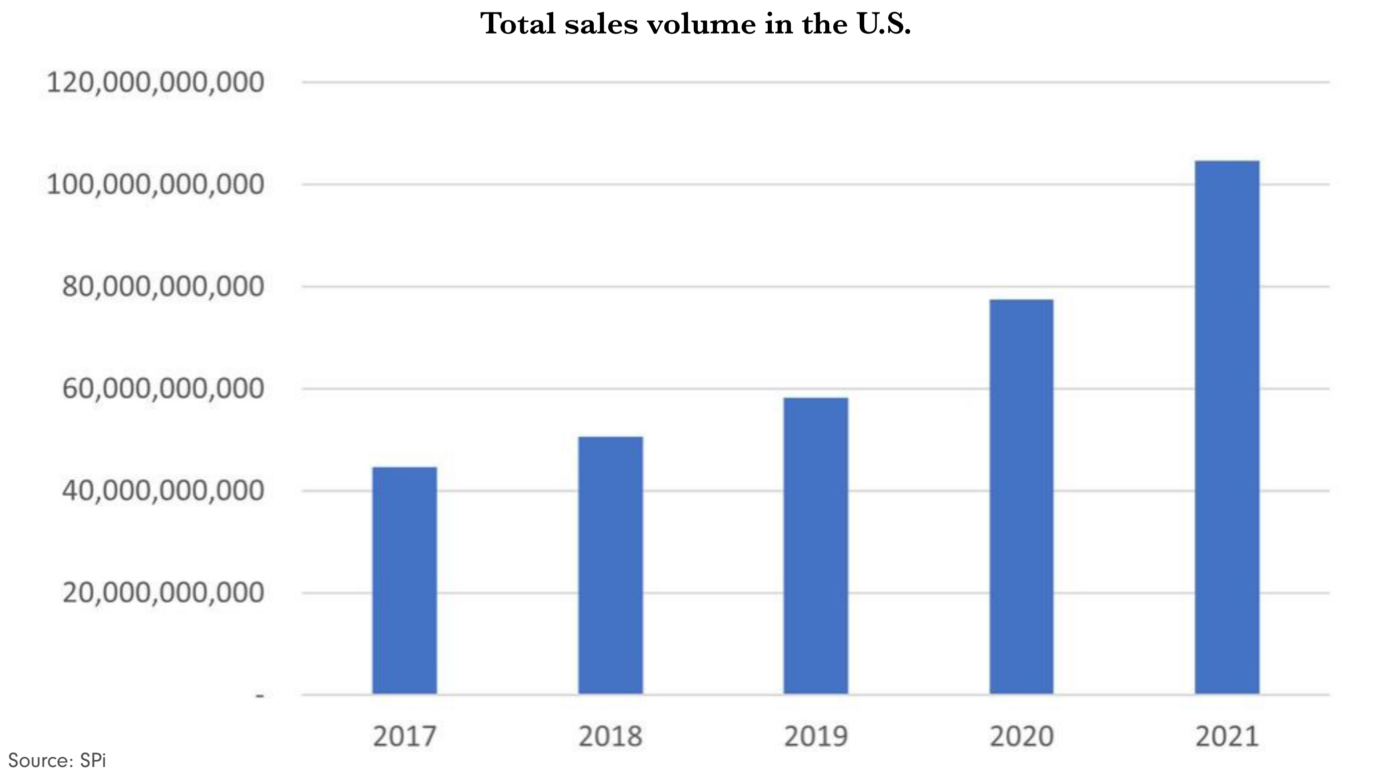
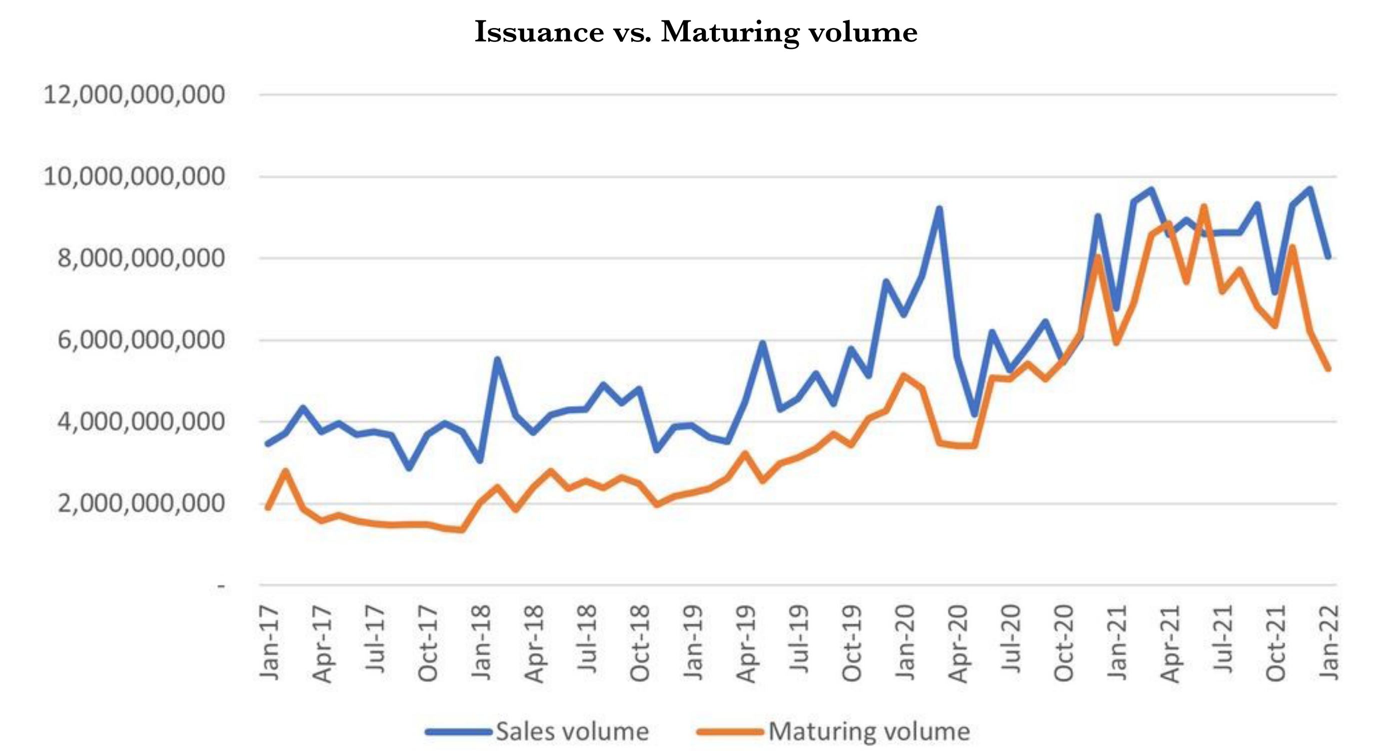
Many regulators around the world question structured products and why investors buy these products. Anecdotally, people often mention that structured products are created by banks to make more money, but, in practice, there is no proof of this. Where does the money actually come from and what are the factors that make the structured products industry shrink or grow?

One of the structured products markets that has experienced the most growth in recent years is the US market. The US market used to reliably sell roughly $50 billion worth of structured products per year. In 2021, however, it sold more than $105 billion worth of structured products, doubling its size in just four years.



Source: SPi

To understand where all this growth came from, we looked at the US monthly volume issued, taking into account registered and unregistered structured notes, as well as market-linked CDs (MLCDs). By comparing sales volume (new products) with maturing volume, we discovered that over the last five years, there has been an inflow of new money in the US structured products market, with two small exceptions.



Source: SPi

A regression analysis

Although maturing and sales volume are extremely positively correlated in the US structured products market, we wanted to dig a little deeper and try to find some other factors that might explain such growth. To aid ourselves in this process, we developed a linear regression model to identify potential explainers of structured products sales volume in the US. Using the period between January 2017 and December 2021, we collected monthly data on maturing volume, the performance of US structured products, the S&P 500's performance, the US unemployment rate and inflation.

After running many different interactions to examine different variable combinations, we ended up with two regressions that can explain, to a very high degree, structured products sales in the US.

The first model enabled us to achieve a coefficient of determination of 79% using only the total volume of maturing structured products in the US as an independent variable. In other words, 79% of the variation in structured products sales volume can be explained by the variation in the volume of maturing structured products. This means that when we conduct just a simple linear regression of structured products sales volume on maturing volume, our model already does a pretty good job of explaining the correlation between sales and maturing volume (and does so with a highly statistically significant coefficient on maturing volume). This result suggests that a major determinant of structured products sales volume is the re-investment and roll-over of previous investments in structured products.

We also find out that the equity performance, such as the S&P 500, or the unemployment rate, do not explain the sales of structured products.

Linear Regression Results		
Dependent variable	**US structured products sales volumne**	
	(1)	(2)
	Bivariate	Multivariate
Key independent variable		
Maturing volume	0.821***	1.087***
	(0.055)	(0.284)
Additional variables		
Return on maturing volume		-2.036 NS
		(2.611)
Performance p.a.		-6.887bn NS
		(9.895bn)
S&P 500 performance		-2.450bn NS
		(3.422bn)
Unemployment rate		-105.566m NS
		(70.911m)
Inflation rate		218.171m**
		(101.439m)
Constant	2.387bn ***	2.648bn**
	(249.296m)	(1.001bn)
R-Squared	0.791	0.839

Standard errors are given in parentheses under coefficients

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

The potential importance of inflation

In our second model, we added other control variables into our regression, including structured products performance, the S&P 500's performance, the unemployment rate and the inflation rate (as mentioned above). In doing so, we found that the positive correlation between maturing volume and structured products sales volume became even stronger and remained highly statistically significant. Looking at these results, we can conclude that for each $1 of maturing volume, there will be a 108.7% reinvestment in structured products, on average. As the 8.7% above 100 is close to the return on structured products, these results seem to indicate that investors roll over earned coupons from expiring products at maturity.

Additionally, the second model increased the coefficient of determination to 84%. We also found that structured products performance, the S&P 500's performance and the unemployment rate were not statistically significantly correlated with structured products sales volume. Inflation, however, did appear to have a statistically significant correlation with structured products sales volume.

Looking at the coefficient on inflation in the second model, we conclude that, over the past four years, for every 1% increase in the US inflation rate, an extra $218 million worth of structured products would be sold every month, on average. This suggests that when inflation increases rapidly, investors could be more attracted to structured products.

Although there are likely a few different factors that can explain the growth of the structured products market, the high positive correlation between inflation and structured products sales volume seems to align with a principle of behavioral finance known as the reference dependence principle (under prospect theory). This principle outlines that investors tend to evaluate outcomes relative to a certain reference point and then classify gains and losses. If inflation is an investor's main reference point, the investor might be much more keen to replace their fixed bonds with structured products when the real returns (bond yields discounted by inflation) are negative, as the potential upside offered by structured products can take them to a real positive yield.

The future of structured products and potential factors to keep an eye on

Looking ahead to the remainder of 2022, we see two forces at play. On the one hand, you have expiring products, which are highly dependent on underlying levels. On the other hand, you have high inflation, which seems to be able to attract new money to structured products.

At the end of the day, although the roll-over speed of investment products appears to be slowing down due to the negative performance of equity markets, structured products might continue to grow, as they seem to offer a path for investors to obtain real positive yields.

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