The "Benjamin Button" credit cycle

Credit Analysis

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Credit Strategy
Europe

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It's central banks…or bust

2019 showed that simple rate cuts are still a potent force for markets. The correlation between central bank easing and asset performance was even more positive this year. The message for 2020 therefore is simple: there can be no big bear market in corporate bonds, and no end to the credit cycle, unless there is a bear market in central banks.

Corporates do the NIRP dance…

It's tough to see the end of the credit cycle when the backdrop of financial repression in Europe is continually pushing money into credit. But we think 2020 may be the year of companies themselves buying large amounts of Euro-denominated credit. ECB data shows that deposit rates for non-financials have just turned negative in Europe. Thus, we see corporates being big buyers of front-end credit next year.

…and investors ride the wave of disintermediation

The flip side of financial repression is that loan market funding costs are not falling anywhere near as quickly as bond funding costs. We think corporates will naturally gravitate away from bank financing towards bond market issuance given this backdrop. 2020, therefore, should bring a revival in "debut" issuers, offering investors diversity, but potentially more risk. Where is the debut story likely to be most acute? Markets should be on the look-out for new Dutch, Spanish, French and UK issuers, we think.

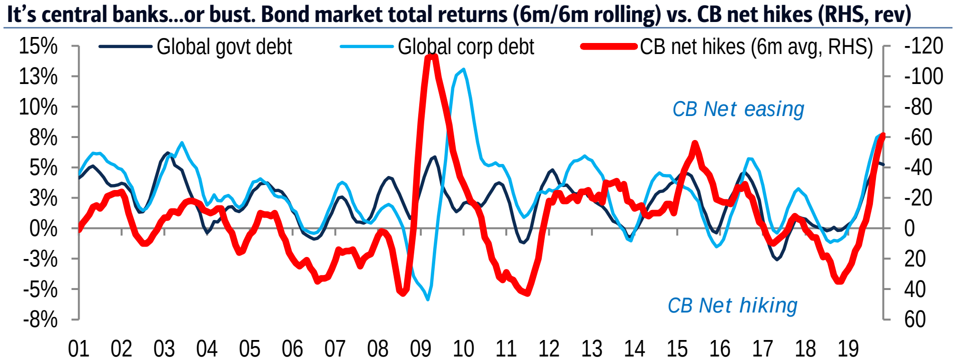
The "Benjamin Button" credit cycle

During the 2013-2018 era of ECB support, the Euro credit market actually "aged" backwards, as many new issuers emerged. Today, the average "age" of the Euro IG market is just 7yrs, and the average age of Spanish names is 5yrs. And the credit market could get younger still as the debut issuer trend reappears. The risk with such a young bond market, though, is that it is less "battle tested" should the economic data weaken.

The United States of Europe

The truly mesmerizing statistic of '19 was the €550bn of issuance. For the first time ever, Reverse Yankees were the top issuer in Euros, and we expect even more of this trend next year. We find that Reverse Yankees are still cheap for investors in the capital goods, media, healthcare, industrials and telecoms sectors.

It's central banks…or bust. Bond market total returns (6m/6m rolling) vs. CB net hikes (RHS, rev)



Source: BofA Merrill Lynch Global Research, Bloomberg. Bond rolling total returns (LHS). Red line points to net cuts by CBs YTD.

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The “Benjamin Button” credit cycle

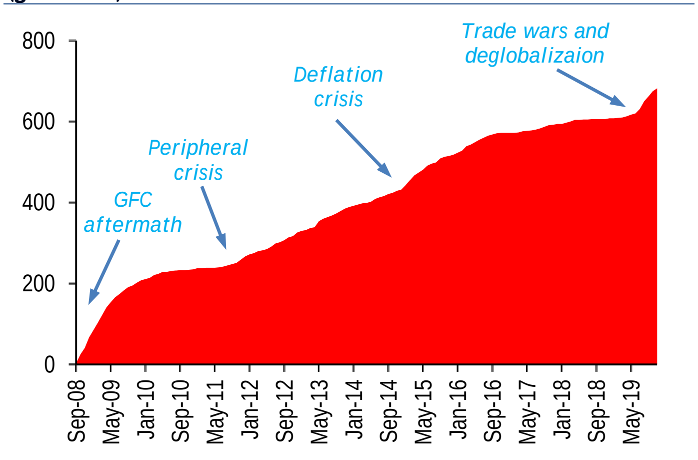
2019 will be remembered as the year in which financial markets achieved the impossible – mesmerizing returns a decade into a bull market. And November, by and large, added to the impressive run of performance. As global central bank balance sheets expand rapidly again, we think the path of least resistance is for asset prices to rise in the short-term: a rule of thumb that has worked well for markets during prior QE episodes.

It’s central banks…or bust

Year-to-date, 92% of assets across the globe have generated positive total returns – the best year for overall performance since 2009. Even cash has had a “healthy” 2019, returning investors 2.3%. For bond markets, some equally impressive numbers can be found. Consider, for instance, the 10% total returns posted in European high-yield, 12% returns made in US high-grade, 20% returns for long-end Italian government debt and the stunning 44% total returns in long-end Greek government bonds.

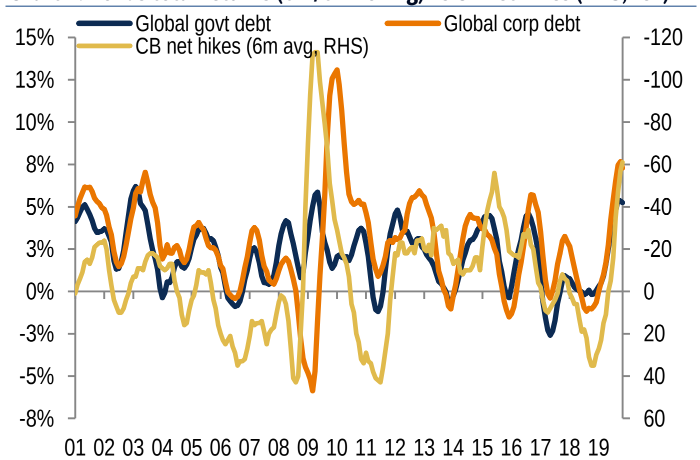
What has made 2019 such a knockout year? The combination of bullish valuations and bearish investors was a supportive cocktail to start the year. But in the end it was the old favourite – monetary policy largesse – that turbo-charged performance. Amazingly, 2019 has seen central banks across the globe cut rates a grand total of 79 times (69 net cuts), the highest yearly volume of central bank easing since 2009 (133 net cuts).

Chart 1: Cumulative number of rate cuts since the Global Financial Crisis (global cuts)



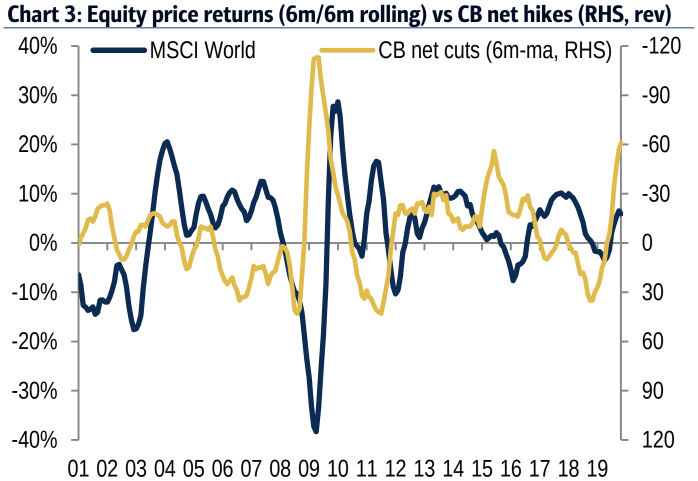
Source: BofA Merrill Lynch Global Research, Bloomberg.. Large sample of 100+ central banks.

Chart 2: Bonds total returns (6m/6m rolling) vs CB net hikes (RHS, rev)



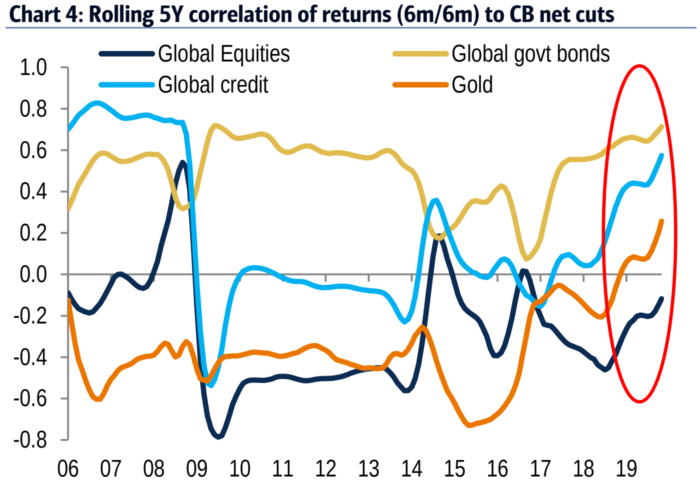
Source: BofA Merrill Lynch Global Research, Bloomberg. Bond rolling total returns (LHS).

Chart 3: Equity price returns (6m/6m rolling) vs CB net hikes (RHS, rev)



Source: BofA Merrill Lynch Global Research, Bloomberg.

Chart 4: Rolling 5Y correlation of returns (6m/6m) to CB net cuts



Source: BofA Merrill Lynch Global Research, Bloomberg. Positive correlation means CB cuts result in higher asset prices.

In fact, monetary policy has been the only leadership that asset prices have needed lately. Chart 4 shows the rolling correlation of asset price performance to central bank policy easing. Note that the correlation has risen over the last year – and especially so for corporate debt.

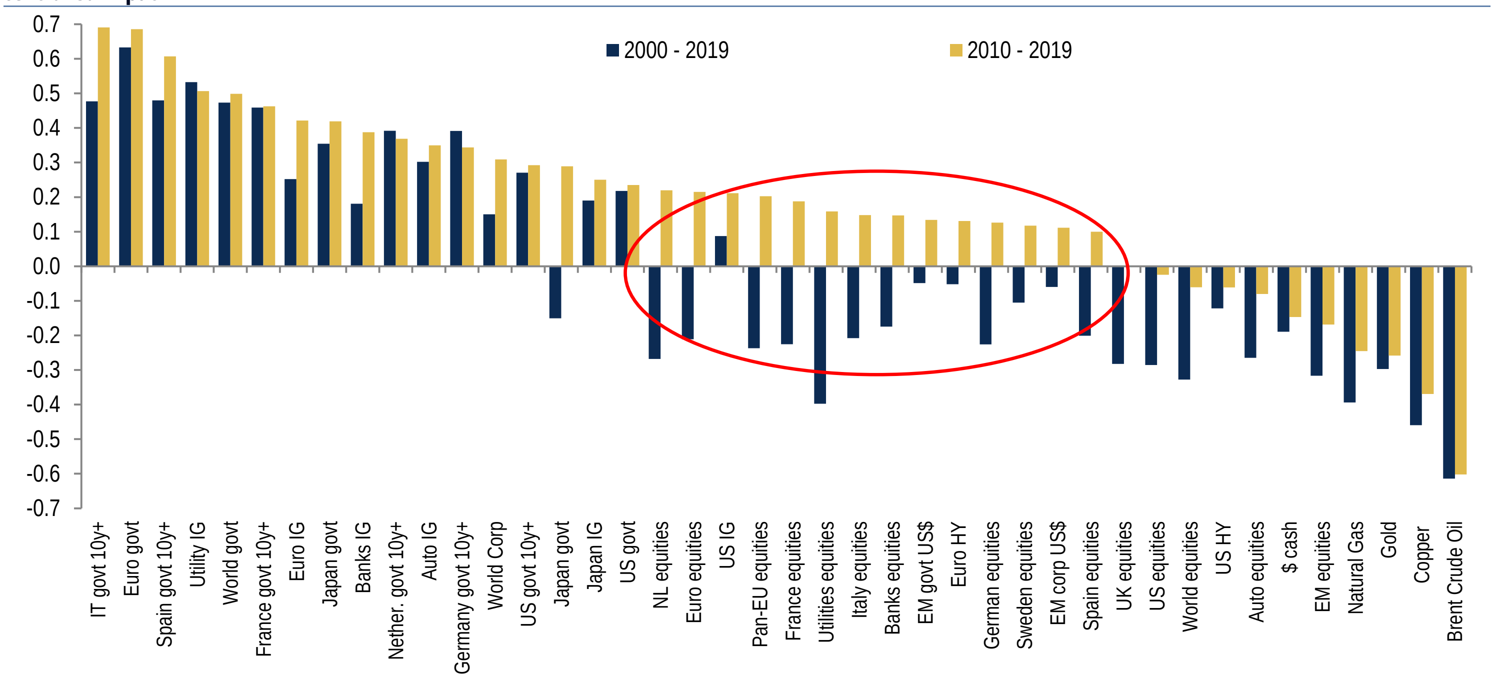
Despite growing concerns about the efficacy of monetary policy and negative rates, financial markets seem to be reacting more enthusiastically to monetary policy now than in the past.

A helping hand for all

Moreover, Chart 5 shows how the correlations between asset price returns and central bank rate easing have changed between the pre-Global Financial Crisis (GFC) and post-crisis periods.

- For almost all assets, the correlation between performance and central bank rate cuts has been more positive (less negative) in the decade after the GFC.
- In addition, for some parts of the financial universe, the central bank/performance correlation flipped from negative to positive in the decade after the GFC. Euro HY spreads, for instance, now tend to tighten upon rate cuts, as monetary easing drives reach for yield behaviour. Yet, pre-GFC, rate cuts would often be commensurate with wider high-yield spreads, as central bank action would be reflective of a weaker global economy.

Chart 5: Historical correlations of asset price returns (6m/6m MA) to CB net cuts in policy rates: correlations higher today reflecting greater "faith" in the central bank put



Source: BofA Merrill Lynch Global Research, Bloomberg.

It's central banks....or bust

Thus 2019 has shown how inextricably linked financial market performance has become to the leadership of central banks. The message for 2020 is therefore simple, in our view: there can be no big bear market in corporate bonds, and there can be no clear end to the credit cycle, unless there is a bear market in central banks...

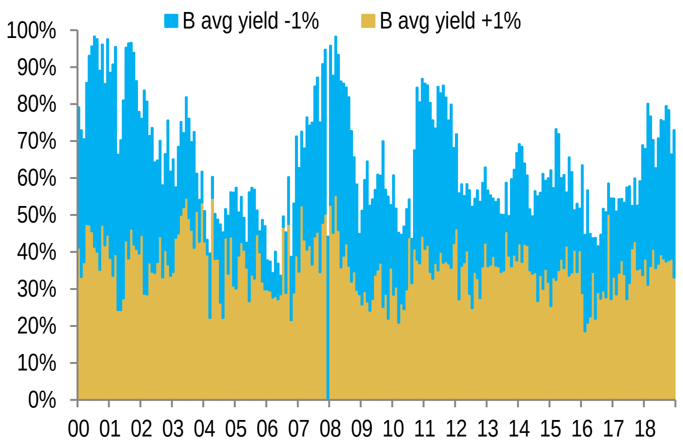
And as the Fed showed in the final quarter of last year...it has become very difficult to normalise rates in today's environment.

Thus, we look for spreads to tighten into the early part of 2020 given the ECB's supportive influence. And such an environment is ripe for spread compression, we think, especially as the breadth of lead indicators – such as the OECD – starts to improve. Note that European single-Bs returned almost 5x that of BBs last month, the best relative outperformance since January 2013.

And as the charts below show, spread dispersion across the single-B market is now showing signs of falling. This, we think, will act as an important confidence booster for investors in the space. It means that the worst of the "plunging bonds" phenomena in European high-yield is likely behind us.

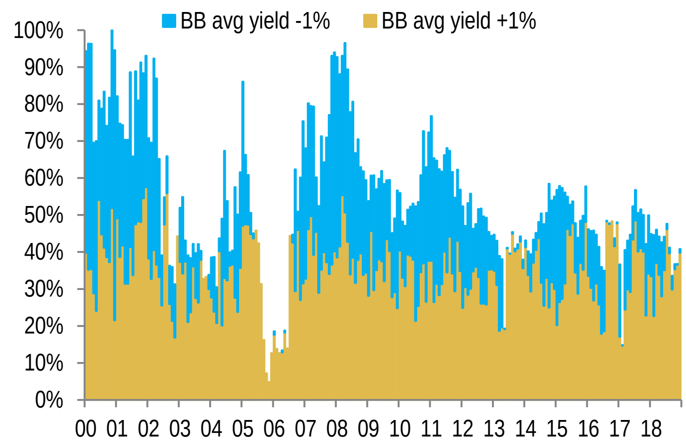
We think all of this should encourage the return of long-term capital to the sector, and we **remain bullish single-Bs**.

Chart 6: HY dispersion metric: % of single-B market trading more than 1% above and below the overall single-B market yield.



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. % of Euro single-B market trading +/- 1% away from index yield.

Chart 7: HY dispersion metric: % of BB market trading more than 1% above and below the overall BB market yield



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. % of Euro BB market trading +/- 1% away from index yield.

But what are the risks to credit markets after a strong start to the year in '20? Ironically, we think the emergence of a more "confusing" central bank narrative could cause the market to wobble down the line.

With the ECB undergoing a thorough strategy review soon, Lagarde quizzed during Monday's European Parliament appearance on the "green" credentials of CSPP (Corporate Sector Purchase Programme), and newsflow about the financial stability effects from low rates emerging again, we think the ECB's message is prone to becoming more mixed at some point next year, injecting some volatility back into credit markets.

Corporates do the NIRP dance...

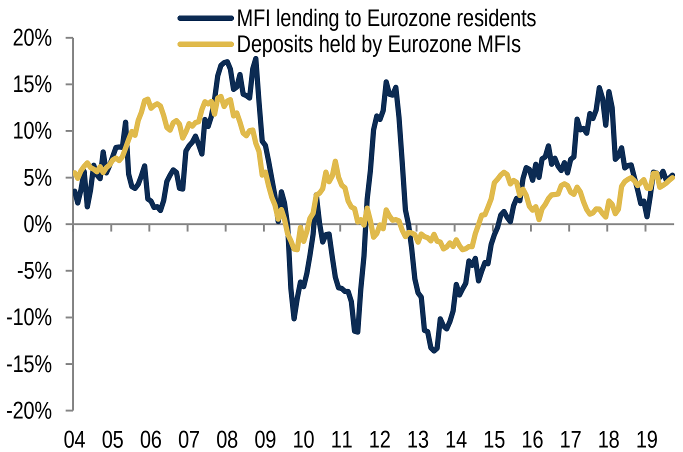
As we argued in our year-ahead, today's era of financial repression is rapidly transforming European credit markets. What is a given, in such an environment, is good technicals, and we doubt they fade materially in 2020. Negative rates generate a huge search for yield in credit, eliciting big inflows.

But in 2020, we think it may be **non-financial corporates that emerge as the big buyers of credit, and we think this will be bullish for front-end bonds**. As deposit growth has risen in Europe, banks have had no choice but to start charging non-financial corporates for their deposits.

- Note in Chart 10, the average interest rate paid by European banks on corporate deposits of less than 1yr has just dipped below zero (household deposit rates generally remain above zero, however).

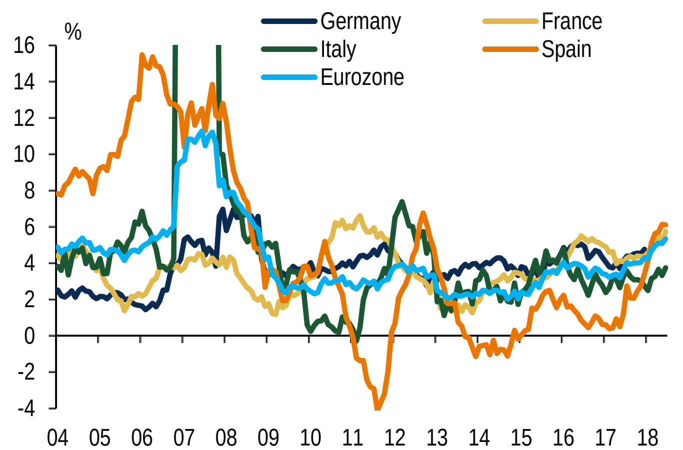
- By country, one can see that German and Spanish banks are now charging for corporate deposits (Chart 11), with French banks not far behind.

Chart 8: Euro Area bank deposit and loan growth



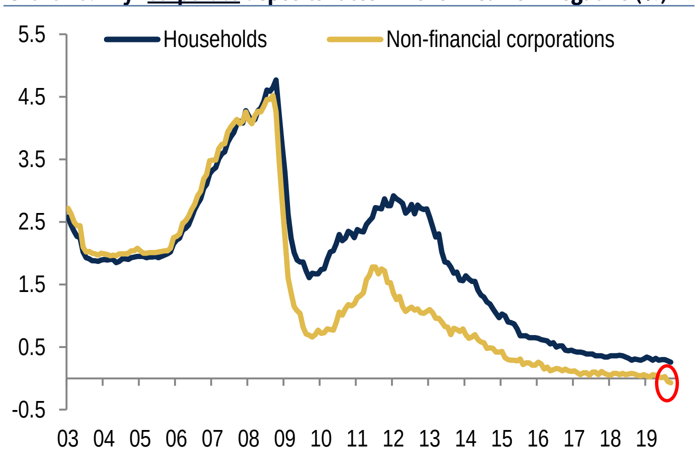
Source: BofA Merrill Lynch Global Research, ECB. YoY change in outstanding levels.

Chart 9: Euro Area bank deposit growth, by country



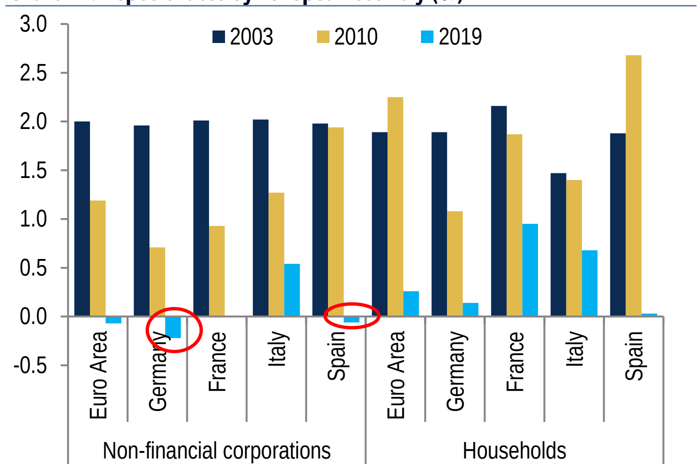
Source: BofA Merrill Lynch Global Research, ECB. YoY change in deposits at Eurozone MFIs.

Chart 10: <1yr corporate deposits rates in Euro Area now negative (%)



Source: BofA Merrill Lynch Global Research, ECB. %.

Chart 11: Deposit rates by European country (%)



Source: BofA Merrill Lynch Global Research, ECB.

...and investors ride the wave of disintermediation

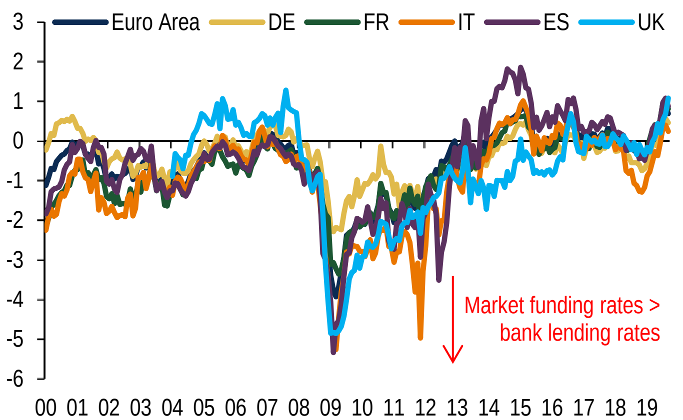
The flip side is that in a world of financial repression, primary markets are likely to be in overdrive, bringing plenty of new – but potentially riskier – names to the market. We look for IG supply of €485-500bn next year, and HY supply of around €100bn.

European banks simply can't make corporate loans as cheap and compelling for issuers as the bond market now can. Given the profitability drag from retail deposits, corporate lending remains an important revenue generator. The upshot is that bond market funding costs are now significantly lower for corporates than loan market funding costs across most Euro Area counties (as Chart 12 highlights).

And Chart 13 suggests that the cost of funding difference between the two markets is currently most acute (i.e., bond funding costs lower than loan funding costs) in the UK, Netherlands, Spain, Belgium and France.

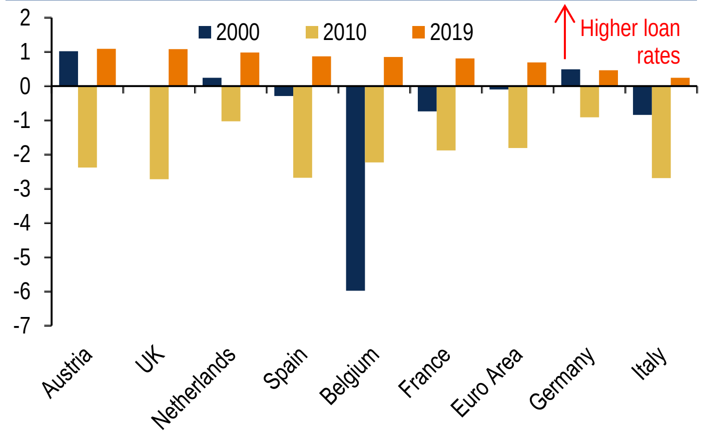
Other things being equal, therefore, credit investors should expect lots of "debut" issuance next year from non-financial corporates in these countries.

Chart 12: Bond market financing vs loan market financing: for companies across the Eurozone, it is now cheaper to repay bank debt and fund in the bond market



Source: BofA Merrill Lynch Global Research, ECB, Bloomberg.

Chart 13: Bond market financing vs loan market financing: credit investors should expect more "debut" issuance from UK, Dutch, Spanish, Belgium and French names in 2020



Source: BofA Merrill Lynch Global Research, ECB, Bloomberg.

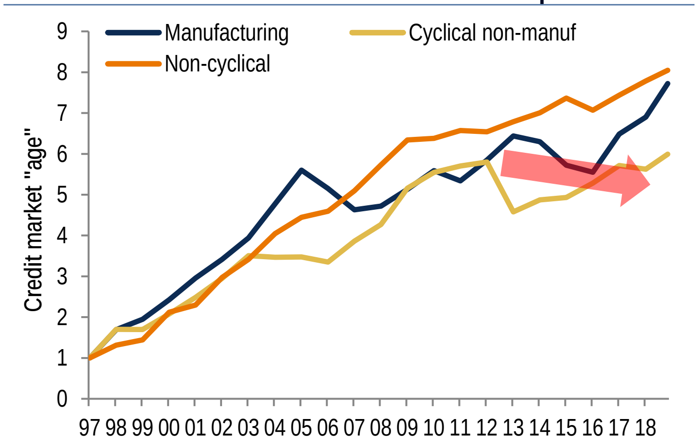
The "Benjamin Button" credit cycle

In F. Scott Fitzgerald's short story, "The Curious Case of Benjamin Button", the story's subject ages backwards. We think there is an interesting parallel here to developments in the credit market – especially as we anticipate more debut corporate bond issuers to emerge given the relative expensiveness of loan funding.

The charts below show the "age" of the Euro high-grade credit market over time. We define "age" as simply the number of years that an issuer has been continuously present in the Euro IG market (using ICE BofAML's Euro IG bond index). Each year, we calculate the simple average "age" of each company in the bond index.

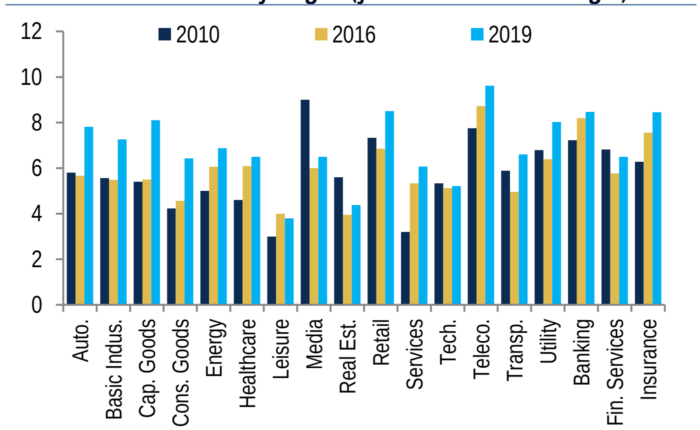
- For example, EDF has an age of 23yrs, having been in the ER00 index since 1997.
- Conversely, Dassault Systemes has an age of just 2 months.

Chart 14: Credit market "age" went backwards for cyclical non-manufacturers between '13 and '18 as "debut" issuance proliferated



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC.

Chart 15: Telecoms and retail are the "oldest" credit sectors in Europe, leisure and real estate the youngest (y axis is credit market "age")



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC.

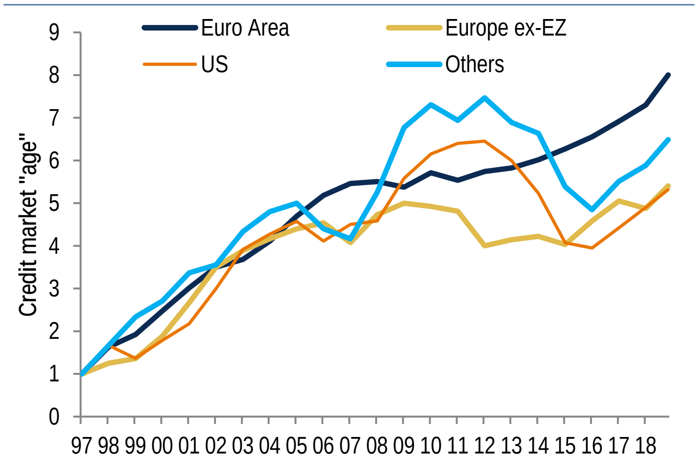
What stands out to us is that during recent years of ECB support and QE, parts of the Euro high-grade bond market have indeed been getting younger, or "ageing" backwards.

- Chart 14, for instance, shows that the average "age" of cyclical non-manufacturers in the Euro high-grade bond market went backwards between 2013 and 2018, reflecting the era of low rates and the advent of QE. This instigated a big rise in "debut" bond market issuers (likewise for German credit).

Bank of America Merrill Lynch

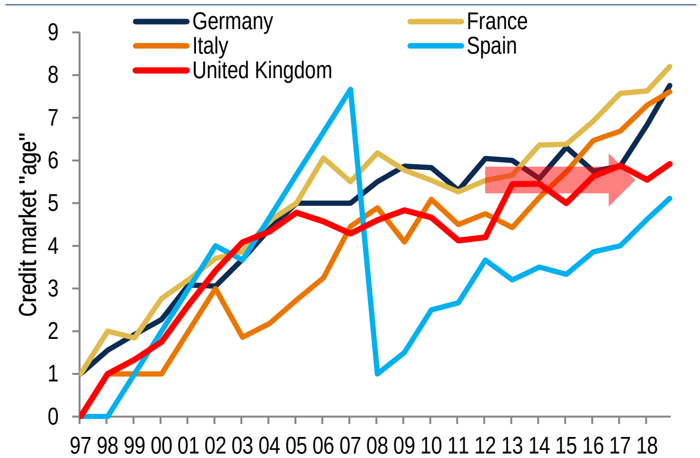
- Conversely the credit market has "aged" quite quickly over the last year as ECB QE was (temporarily) ended and the debut issuers trend slowed down.
- The average "age" of cyclical non-manufacturers in the Euro IG market is just 6yrs now. The average "age" of Spanish names in the Euro IG market is just 5yrs.
- Telecoms and retail are the "oldest" credit sectors in Europe, leisure and real estate the youngest.

Chart 16: Average "age" of Euro high-grade credit (ER00 index) by issuer domicile



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC

Chart 17: Average "age" of Euro high-grade credit (ER00 index) by issuer domicile



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC

Should credit investors be worried about Europe having a relatively young credit market? On the one hand, the rush of debut issuers shows that companies have plentiful access to funding if bank lending becomes more challenging. Other things being equal, corporate default rates should therefore be lower…a good thing.

Yet, with an average age of 7yrs, many Euro issuers will not have seen their bonds trade through a recessionary cycle. The Euro credit market, in this respect, is less "battle tested".

The risk is that this imparts greater bond market volatility in Europe should the economic data become more challenged down the line.

The United States of Europe

If there's one mammoth statistic for 2019, it is the volume of issuance that markets have absorbed. High-grade supply is likely to end the year at €550bn, 50% up on last year's volume. And high-yield supply is likely to end 30% higher (at €98bn).

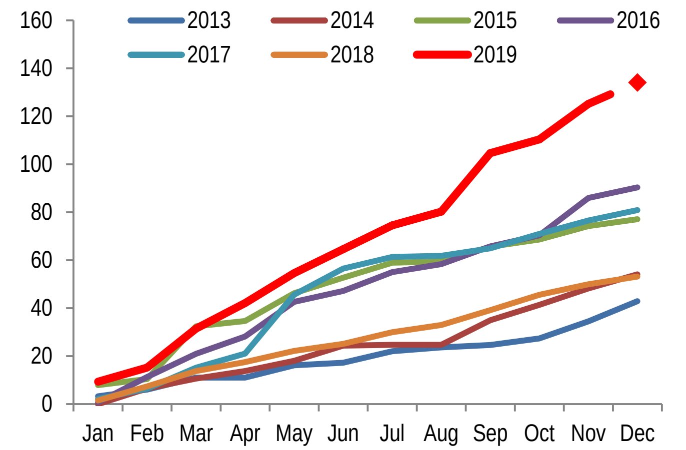
As the table in the appendix shows many names were able to grow their presence in the Euro IG market materially. Abertis and Siemens doubled their € debt outstanding, for instance.

But the stars of the show were US issuers (Reverse Yankees). As Chart 18 shows, US names are likely to have issued €135bn of debt by year-end, the highest year for Reverse Yankee supply on record. **Moreover, 2019 would be the first year ever in which US names were responsible for the largest share of Euro IG issuance**.

Next year, we expect even greater volumes of Reverse Yankee supply, spurred-on by high volumes of maturing debt, €25bn, in 2020 (Chart 20).

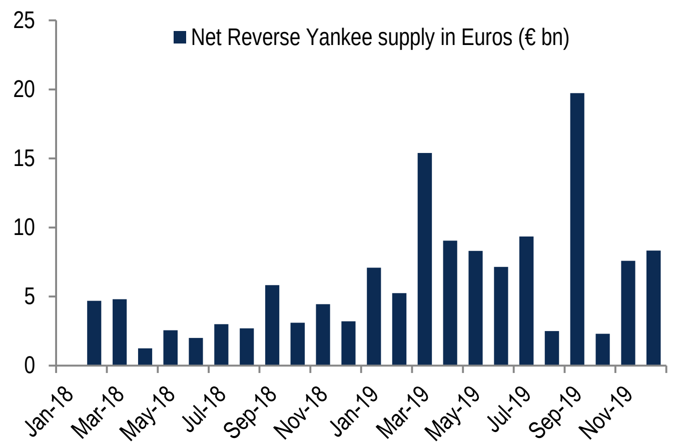
Superior fundamentals for many Reverse Yankee issuers has meant that spreads for US names are now quite tight in Euros. But Charts 26 and 27 highlight that **Reverse Yankees are still cheap for investors in the cap goods, media, healthcare, industrials and telecoms sectors**.

Chart 18: This year has already seen record issuance from Reverse Yankees, possibly topping €135bn by year-end



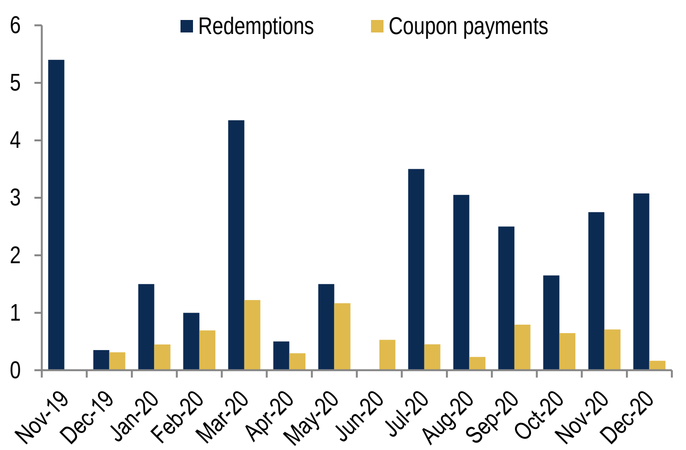
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Cumulative gross supply IG + HY (€ bn).

Chart 19: Net supply from US companies has surged in recent months, reaching a record-high of €20bn in September '19



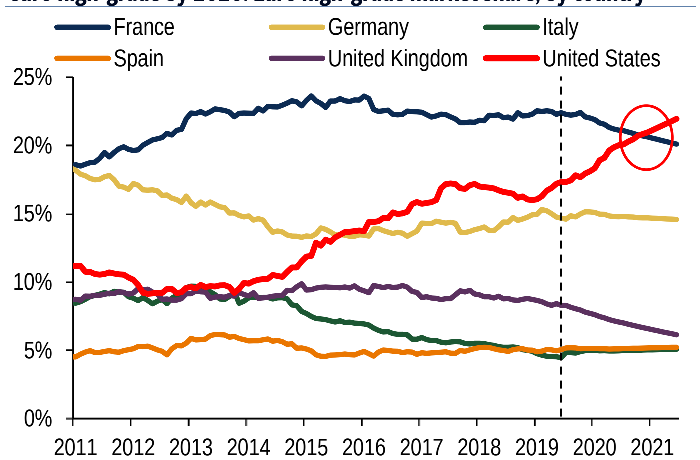
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Gross supply minus redemptions.

Chart 20: Next year could see even stronger supply from Reverse Yankees as €25.4bn of outstanding debt is expected to mature



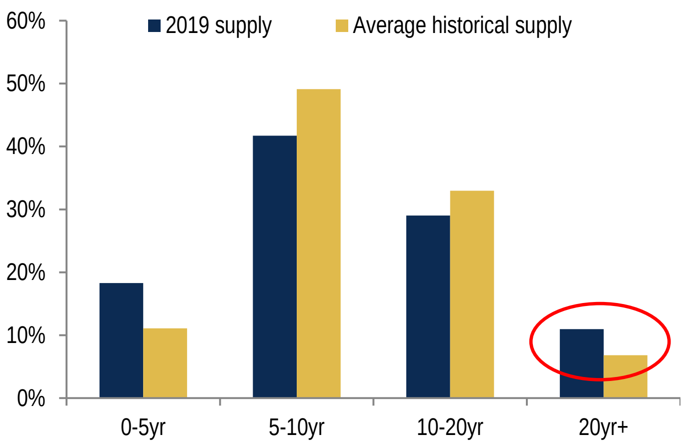
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC, Bloomberg.

Chart 21: RYs could overtake French issuers as the largest market in euro high-grade by 2020. Euro high-grade market share, by country



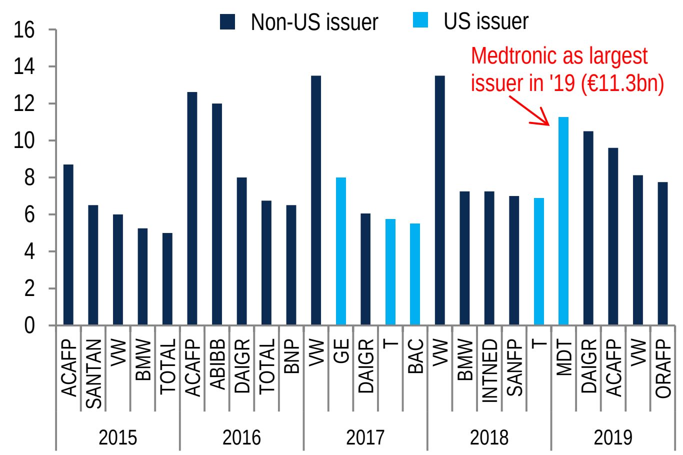
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Projections based on the compound monthly growth rate of supply observed YTD in 2019.

Chart 22: This year's new RY issues have focused on the wings of the curve, with €13bn worth of bonds issued at an initial maturity > 20yrs+



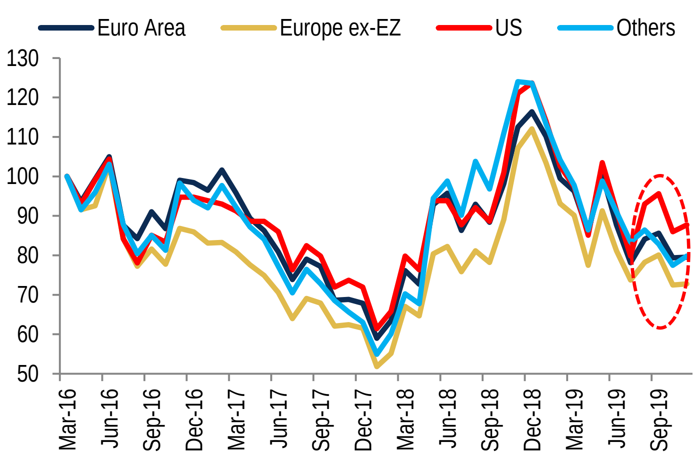
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. New bonds issuance from US corporations in €.

Chart 23: Top 5 issuers in ER00 since '15. US companies are becoming the largest issuers of Euro-denominated corporate bonds.



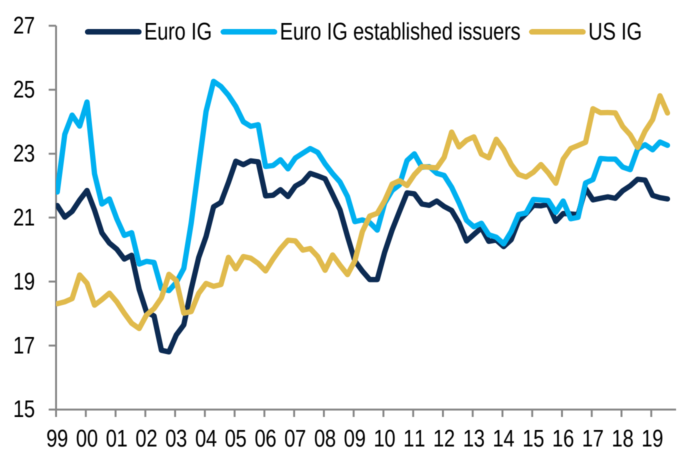
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Top 5 issuers captured by ER00 index, gross supply (€ bn). YTD supply figures as of 30/11/19 for 2019.

Chart 24: RY IG bonds have traded wider than their peers since July (Euro IG spreads by issuer domicile)



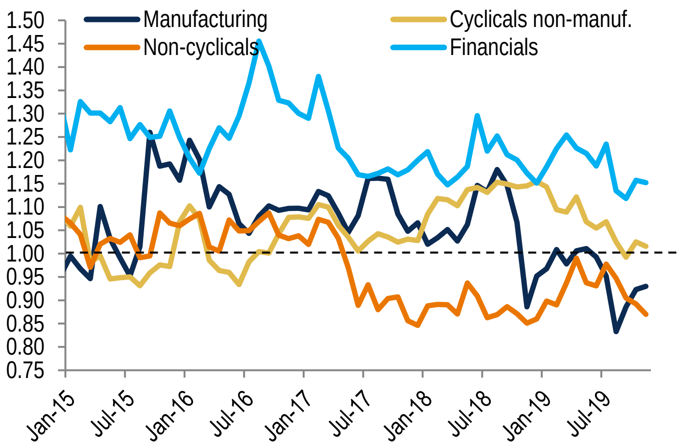
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Weighted average of option-adjusted spreads (OAS) by region. OAS rebased to 100 as of Mar '16 (month of CSPP1 announcement).

Chart 25: Despite relatively better fundamentals for IG-rated US issuers have supported tighter spreads in Euros (EBITDA margins).



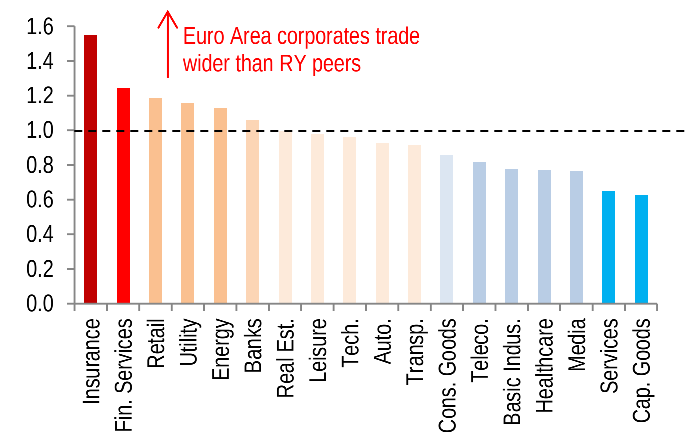
Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC, Bloomberg. EBITDA as % of revenue.

Chart 26: By sector, Euro-denominated debt of US corporates trade wider than Eurozone peers in financials and non-manufacturing cyclicals



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Spread (OAS) ratio of Euro Area corporations over US peers as given by ER00.

Chart 27: Reverse Yankees still cheap vs Eurozone peers in cap goods, media, healthcare, industrials and telecoms



Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC. Spread (OAS) ratio of Euro Area corporations over US peers as given by ER00.

Appendix

Table 1 shows the top 30 names in Euro IG that have seen their debt outstanding grow the most this year (in % terms, minimum €6bn outstanding).

Table 1: Top 30 names to have grown the most (% terms) in Euro IG this year (minimum €6bn debt outstanding)

	Ticker	Name	Total debt now	Total debt end '18	% Chg	Abs. Chg
1	DHR	DH Europe Finance S.A	8,450	2,200	384%	6,250
2	UCGIM	UniCredit S.p.A.	13,228	5,600	236%	7,628
3	ABESM	Abertis SA	8,600	3,811	226%	4,789
4	SIEGR	Siemens	11,500	6,000	192%	5,500
5	BBVASM	Banco Bilbao Vizcaya Argentaria S.A.	10,250	5,500	186%	4,750
6	TMO	Thermo Fisher Scientific Inc	9,740	5,765	169%	3,975
7	DANBNK	Danske Bank A/S	8,750	5,250	167%	3,500
8	CABKSM	Caixabank S.A.	11,500	7,250	159%	4,250
9	KBCBB	KBC Groupe SA	6,750	4,500	150%	2,250
10	LBBW	Landesbank Baden-Wurttemberg	6,000	4,050	148%	1,950
11	F	FCE Bank plc	7,500	5,150	146%	2,350
13	IBM	International Business Machines Corporation	11,250	7,750	145%	3,500
14	VZ	Verizon Communications Inc.	13,874	10,074	138%	3,800
15	SEB	Skandinaviska Enskilda AB	7,350	5,350	137%	2,000
16	C	Citigroup Inc.	14,200	10,350	137%	3,850
17	KO	The Coca-Cola Company	10,750	8,000	134%	2,750
18	DAIGR	Daimler AG	29,800	22,800	131%	7,000
19	ORAFP	Orange S.A.	22,650	17,400	130%	5,250
20	RDSALN	Shell International Finance B.V.	13,500	10,500	129%	3,000
21	AAPL	Apple Inc.	9,300	7,300	127%	2,000
22	RENAUL	RCI Banque S.A.	15,300	12,050	127%	3,250
23	DNBNO	DnB Bank ASA	8,500	6,750	126%	1,750
24	ENELIM	ENEL Finance International N.V.	16,304	13,136	124%	3,168
25	SOCGEN	Societe Generale S.A.	22,400	18,150	123%	4,250
26	CMZB	Commerzbank	12,049	9,799	123%	2,250
27	TRNIM	Terna Spa	6,800	5,550	123%	1,250
28	T	AT&T Inc	21,627	17,927	121%	3,700
29	ENGIFP	Engie	19,358	16,069	120%	3,290
30	JPM	JPMorgan Chase & Co.	22,550	18,800	120%	3,750

Source: BofA Merrill Lynch Global Research. Debt now, and absolute change, in Euro bn.

Table 2 on the next page shows cross-asset returns since 1998. We colour shade the cells (green is better) to show how impressive a year 2019 was.

Table 2: Asset price return (%) since 1998.

	Compound annual return (%)																								
Asset class	1990s	2000s	2010s	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	19 YTD
Equities																									
Euro Area	16.4%	-4.9%	2.7%	39.9%	38.4%	-4.1%	-20.1%	-36.1%	15.1%	6.9%	22.5%	15.7%	5.2%	-44.4%	21.1%	-5.8%	-14.4%	10.3%	17.9%	1.2%	3.8%	1.5%	5.3%	-14.0%	23.4%
Germany	*14.3%*	*-1.4%*	*8.7%*	*21.7%*	*32.5%*	*-9.6%*	*-17.8%*	*-39.9%*	*29.4%*	*6.8%*	*27.3%*	*22.3%*	*19.0%*	*-37.4%*	*21.6%*	*15.3%*	*-11.6%*	*26.1%*	*20.8%*	*3.9%*	*5.3%*	*12.6%*	*11.1%*	*-17.8%*	*24.8%*
France	*12.2%*	*-4.1%*	*4.5%*	*38.3%*	*43.7%*	*-2.7%*	*-21.0%*	*-33.1%*	*16.1%*	*7.4%*	*25.0%*	*17.6%*	*-0.1%*	*-42.7%*	*22.3%*	*-3.3%*	*-14.7%*	*12.2%*	*18.0%*	*-0.5%*	*8.5%*	*5.7%*	*7.9%*	*-10.5%*	*25.3%*
Italy	*20.9%*	*-5.5%*	*0.5%*	*40.8%*	*15.4%*	*3.9%*	*-25.1%*	*-23.7%*	*12.0%*	*13.5%*	*16.1%*	*16.4%*	*-9.5%*	*-47.5%*	*18.0%*	*-12.7%*	*-23.9%*	*8.0%*	*12.1%*	*1.1%*	*8.4%*	*-5.6%*	*11.6%*	*-16.1%*	*28.0%*
Spain	*15.1%*	*0.4%*	*-1.8%*	*44.0%*	*11.4%*	*-22.0%*	*-7.7%*	*-25.0%*	*25.4%*	*15.7%*	*18.6%*	*32.8%*	*4.4%*	*-36.8%*	*28.0%*	*-18.6%*	*-11.7%*	*-6.5%*	*21.4%*	*3.7%*	*-7.2%*	*-0.5%*	*6.2%*	*-15.3%*	*8.4%*
Netherlands	*18.1%*	*-6.7%*	*6.0%*	*32.9%*	*20.1%*	*-5.5%*	*-21.5%*	*-35.1%*	*4.6%*	*3.1%*	*27.0%*	*13.4%*	*2.9%*	*-52.3%*	*36.3%*	*5.7%*	*-10.3%*	*7.8%*	*17.2%*	*5.6%*	*4.1%*	*10.4%*	*11.6%*	*-10.4%*	*22.6%*
United Kingdom	11.5%	-2.4%	3.3%	14.5%	17.9%	-10.9%	-15.5%	-24.5%	13.6%	7.5%	18.0%	11.1%	2.3%	-31.3%	22.1%	9.0%	-3.4%	3.5%	14.4%	-2.7%	-4.9%	15.0%	6.6%	-12.0%	8.6%
Sweden	19.1%	-2.2%	6.0%	20.2%	64.9%	-13.1%	-20.1%	-38.2%	25.2%	16.9%	28.4%	20.3%	-9.1%	-34.4%	38.9%	21.0%	-12.6%	10.9%	17.2%	10.5%	-4.7%	10.1%	2.9%	-11.0%	24.1%
US	16.1%	-2.7%	11.0%	26.7%	19.5%	-12.7%	-10.5%	-23.4%	26.4%	9.0%	4.7%	11.9%	3.4%	-38.5%	23.5%	12.8%	1.5%	11.7%	29.6%	11.4%	-0.7%	10.5%	19.4%	-7.0%	25.0%
Japan	-4.6%	-6.1%	6.4%	-16.5%	61.3%	-22.5%	-24.1%	-15.3%	20.7%	11.6%	40.8%	2.4%	-13.4%	-45.8%	17.3%	-0.4%	-18.6%	16.0%	44.2%	13.6%	7.1%	-0.9%	21.6%	-21.3%	19.0%
Emerging Markets	8.3%	7.3%	1.1%	-27.5%	63.7%	-31.9%	-4.8%	-8.0%	51.6%	22.4%	33.0%	28.4%	34.5%	-54.5%	74.5%	16.4%	-18.4%	12.3%	-5.0%	-4.6%	-17.0%	9.4%	35.6%	-18.0%	9.1%
World	10.2%	-1.9%	7.2%	22.8%	23.6%	-15.4%	-16.5%	-21.1%	30.8%	12.8%	9.6%	16.6%	6.3%	-42.1%	27.0%	9.6%	-5.8%	11.0%	24.1%	2.9%	-2.7%	5.7%	20.4%	-11.0%	21.6%
European Banks	9.7%	-3.3%	-7.6%	24.9%	9.4%	6.8%	-17.5%	-23.0%	24.3%	10.9%	27.6%	23.9%	-10.7%	-63.7%	48.9%	-26.9%	-36.0%	9.1%	25.9%	-4.9%	-4.9%	-4.7%	7.2%	-33.3%	7.1%
European Utility	11.3%	2.3%	0.4%	36.4%	-11.4%	10.1%	-11.7%	-22.7%	6.7%	25.1%	26.2%	36.0%	16.8%	-38.1%	1.0%	-8.8%	-14.3%	-3.3%	7.5%	13.3%	-3.7%	-8.9%	5.0%	-1.7%	20.1%
European Auto.	8.1%	-2.6%	8.7%	28.7%	13.1%	-29.8%	0.6%	-23.9%	15.1%	0.9%	22.5%	24.4%	23.0%	-44.5%	18.1%	44.5%	-19.1%	27.2%	37.3%	4.0%	12.7%	-1.5%	10.3%	-28.0%	17.9%
Fixed Income																									
Government																									
Euro Govt	9.1%	5.4%	4.4%	11.9%	-2.5%	7.2%	5.9%	9.8%	4.0%	7.7%	5.4%	-0.5%	1.9%	9.1%	4.4%	1.1%	3.3%	11.2%	2.3%	13.2%	1.6%	3.3%	0.1%	1.0%	8.8%
Germany 10y+	*9.5%*	*7.1%*	*8.1%*	*22.9%*	*-9.9%*	*13.7%*	*4.7%*	*13.5%*	*3.8%*	*14.7%*	*13.6%*	*-3.4%*	*-2.7%*	*18.2%*	*-1.9%*	*13.2%*	*19.4%*	*8.6%*	*-6.3%*	*26.8%*	*-0.1%*	*9.6%*	*-2.6%*	*6.5%*	*13.6%*
France 10y+	*11.3%*	*6.9%*	*8.1%*	*20.6%*	*-8.9%*	*11.6%*	*5.1%*	*13.5%*	*4.5%*	*13.5%*	*12.1%*	*-3.2%*	*-2.0%*	*16.2%*	*-0.2%*	*8.8%*	*6.4%*	*16.4%*	*-2.3%*	*28.1%*	*0.0%*	*8.5%*	*0.9%*	*2.9%*	*17.0%*
Italy 10y+	*14.1%*	*7.1%*	*8.1%*	*22.5%*	*-10.2%*	*11.2%*	*8.3%*	*14.5%*	*4.0%*	*14.5%*	*10.9%*	*-3.2%*	*-1.2%*	*3.7%*	*10.0%*	*-2.2%*	*-11.1%*	*32.1%*	*9.5%*	*28.6%*	*8.8%*	*0.6%*	*-0.5%*	*-2.2%*	*26.6%*
Spain 10y+	*11.1%*	*6.3%*	*9.4%*	*20.8%*	*-8.9%*	*11.0%*	*6.4%*	*13.5%*	*4.9%*	*13.1%*	*12.5%*	*-3.4%*	*-2.6%*	*11.6%*	*-1.6%*	*-9.4%*	*7.0%*	*7.8%*	*17.5%*	*35.5%*	*2.4%*	*8.8%*	*-0.1%*	*5.6%*	*24.9%*
Netherlands 10y+	*9.8%*	*7.0%*	*8.1%*	*19.2%*	*-8.8%*	*12.4%*	*4.9%*	*13.5%*	*4.7%*	*13.5%*	*12.7%*	*-3.1%*	*-2.3%*	*15.6%*	*-0.1%*	*11.8%*	*18.0%*	*8.7%*	*-6.6%*	*29.5%*	*-0.6%*	*10.6%*	*-2.1%*	*5.9%*	*13.3%*
United States	7.6%	6.1%	3.1%	10.0%	-2.4%	13.4%	6.7%	11.6%	2.3%	3.5%	2.8%	3.1%	9.1%	14.0%	-3.7%	5.9%	9.8%	2.2%	-3.3%	6.0%	0.8%	1.1%	2.4%	0.8%	8.0%
T-bill	*5.1%*	*3.3%*	*0.7%*	*5.7%*	*4.7%*	*6.5%*	*5.3%*	*2.2%*	*1.3%*	*1.2%*	*2.8%*	*4.7%*	*5.4%*	*3.3%*	*0.5%*	*0.4%*	*0.3%*	*0.2%*	*0.2%*	*0.1%*	*0.2%*	*0.6%*	*0.8%*	*1.9%*	*2.3%*
Treasury 10y+	*9.0%*	*7.6%*	*6.9%*	*13.5%*	*-8.6%*	*20.2%*	*4.2%*	*16.8%*	*2.5%*	*7.7%*	*6.5%*	*1.9%*	*9.9%*	*24.4%*	*-13.0%*	*9.3%*	*29.1%*	*3.7%*	*-12.4%*	*24.4%*	*-1.0%*	*1.2%*	*8.2%*	*-1.6%*	*18.1%*
Japan	6.9%	1.9%	2.1%	0.5%	5.1%	2.3%	3.7%	3.9%	-1.0%	1.3%	0.8%	0.3%	2.7%	3.7%	0.9%	2.4%	2.2%	1.8%	2.1%	4.5%	1.2%	3.3%	0.1%	1.0%	2.4%
Emerging Markets	-	11.0%	6.3%	-16.2%	25.0%	14.7%	4.5%	13.1%	26.6%	11.3%	11.2%	10.0%	6.5%	-8.9%	25.3%	11.8%	8.2%	17.1%	-6.0%	7.2%	0.7%	9.1%	9.3%	-3.7%	12.4%
World	8.4%	4.7%	3.4%	9.5%	-0.8%	8.1%	5.4%	8.6%	2.2%	4.8%	3.6%	0.9%	3.9%	8.9%	0.9%	3.6%	6.1%	4.4%	-0.4%	8.4%	1.2%	3.0%	1.2%	1.0%	6.7%
Credit																									
Euro IG credit	6.0%	5.1%	4.0%	10.8%	-1.9%	5.9%	6.8%	8.5%	6.5%	7.6%	4.0%	0.6%	0.2%	-3.3%	14.9%	4.8%	2.0%	13.0%	2.4%	8.3%	-0.4%	4.8%	2.4%	-1.1%	6.5%
Euro HY credit	8.4%	3.0%	7.0%	2.7%	14.5%	-15.9%	-14.0%	-5.0%	28.6%	14.6%	6.0%	11.1%	-2.3%	-34.2%	74.9%	14.3%	-2.5%	27.2%	10.1%	5.5%	0.8%	9.1%	6.7%	-3.6%	9.1%
Euro Banks	5.0%	5.0%	3.7%	10.7%	-1.6%	6.5%	7.2%	9.4%	5.5%	7.5%	4.5%	0.4%	0.1%	-3.3%	12.8%	4.1%	0.3%	14.8%	2.9%	7.1%	0.5%	3.4%	2.3%	-0.8%	5.0%
Euro Utility	5.8%	6.3%	4.5%	11.4%	-2.7%	6.3%	6.6%	10.1%	6.8%	9.0%	5.3%	0.1%	0.6%	5.2%	13.4%	4.7%	3.7%	12.0%	3.0%	10.1%	-0.4%	4.8%	2.4%	-0.7%	7.3%
Euro Auto.	4.9%	4.8%	3.3%	9.3%	-0.7%	4.8%	6.1%	6.6%	8.0%	5.8%	0.3%	1.0%	2.1%	-0.4%	14.8%	5.4%	3.4%	7.2%	1.6%	7.0%	-2.0%	4.5%	2.4%	-2.1%	6.5%
US IG	8.5%	6.6%	5.3%	8.7%	-1.9%	9.1%	10.7%	10.2%	8.3%	5.4%	2.0%	4.4%	4.6%	-6.8%	19.8%	9.5%	7.5%	10.4%	-1.5%	7.5%	-0.6%	6.0%	6.5%	-2.2%	13.6%
US HY	11.5%	6.5%	7.1%	3.0%	2.5%	-5.1%	4.5%	-1.9%	28.1%	10.9%	2.7%	11.8%	2.2%	-26.4%	57.5%	15.2%	4.4%	15.6%	7.4%	2.5%	-4.6%	17.5%	7.5%	-2.3%	11.8%
Japan IG	3.5%	1.6%	0.9%	0.0%	5.8%	1.8%	2.9%	2.8%	-0.1%	1.5%	0.5%	0.1%	2.2%	0.3%	4.0%	2.5%	-1.4%	1.3%	1.6%	1.8%	0.3%	0.8%	0.6%	0.5%	0.9%
EM corp US$	-	6.4%	6.0%	-	15.2%	6.7%	-1.6%	6.2%	17.8%	7.1%	6.5%	6.7%	4.0%	-14.2%	30.0%	11.6%	5.3%	15.7%	-3.0%	4.8%	1.1%	9.5%	8.0%	-2.2%	11.9%
World	-	5.5%	4.9%	7.6%	0.1%	7.2%	8.3%	8.6%	6.6%	5.8%	3.2%	2.6%	2.6%	-4.7%	16.3%	7.4%	5.2%	10.8%	0.1%	7.8%	-0.2%	5.7%	5.2%	-1.7%	11.2%
Commodities																									
Brent Crude Oil	2.0%	12.3%	-2.3%	-36.3%	131.6%	-0.4%	-18.1%	44.0%	5.3%	34.1%	51.6%	-1.5%	55.3%	-51.4%	70.9%	21.6%	18.3%	-0.9%	-0.3%	-48.3%	-35.0%	48.8%	20.0%	-19.2%	12.0%
Natural Gas	3.0%	9.9%	-7.0%	-14.1%	11.9%	284.4%	-69.3%	86.3%	29.2%	-4.6%	80.0%	-40.7%	18.8%	-24.9%	-0.9%	-20.9%	-32.1%	12.0%	26.2%	-31.7%	-19.1%	42.4%	-8.1%	-3.8%	-10.4%
Gold	-3.6%	14.3%	3.1%	-0.3%	-0.1%	-6.5%	3.6%	24.8%	19.4%	5.5%	21.8%	19.9%	30.2%	5.8%	24.4%	29.6%	12.8%	4.5%	-28.3%	-1.4%	-10.4%	9.2%	13.7%	-2.7%	18.0%
Copper	-1.5%	14.7%	-1.6%	-14.0%	26.2%	-4.3%	-18.8%	6.6%	48.8%	28.5%	52.5%	40.2%	5.9%	-53.6%	137.3%	32.9%	-20.7%	3.5%	-7.0%	-16.8%	-24.4%	16.6%	31.7%	-19.7%	0.3%

Source: BofA Merrill Lynch Global Research, ICE Data Indices, LLC, Bloomberg. Annual returns are YoY change as of Dec 31st, returns for each decade is calculated as compound annual growth rate for each asset class.

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