The New Landscape

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Board of Governors

Estimates of US Dollar LIBOR Exposures, Market Participants Group Report (2014)

Derivatives make up roughly 90 percent of all USD LIBOR exposures

But cash products (corporate loans, mortgages and consumer loans, floating rate notes, and securitizations) each have material exposures to LIBOR

USD LIBOR Market Footprint by Asset Class[1]

		Volume	% LIBOR	% roll-off after x years							
		($BN)	Related	1	2	3	5	7	10	20	30
Loans	Syndicated loans[2]	~3,400	97%	19%	36%	62%	90%	96%	97%	98%	99%
	Corporate business loans[2]	1,650	30–50%								
	Noncorporate business loans	1,252	30–50%								
	CRE/Commercial mortgages	3,583	30–50%								
	Retail mortgages	9,608	15%								
	Credit cards	846	Low								
	Auto loans	810	Low								
	Consumer loans	139	Low								
	Student loans	1,131	7%								
Bonds	Floating/Variable Rate Notes	1,470	84%	29%	47%	62%	73%	74%	76%	80%	81%
Securitization	Residential mortgage-backed securi ies	~7,500	24%	0%	1%	2%	3%	5%	6%	18%	86%
	Commercial mortgage-backed securi ies	~636	4%	1%	6%	8%	12%	23%	65%	80%	89%
	Asset-backed securities	~1,400	37%	3%	6%	9%	15%	20%	25%	39%	88%
	Collateralized loan obliga ions	~300	71%								
Over-the-Counter Derivatives	Interest rate swaps	106,681	65%	18%	31%	42%	65%	75%	83%	96%	99%
	Forward rate agreements	29,044	65%	94%	99%	100%	100%	100%	100%	100%	100%
	Interest rate options	12,950	65%	45%	59%	66%	74%	77%	79%	81%	81%
	Cross currency swaps	22,471	65%	29%	46%	60%	76%	83%	88%	95%	99%
Exchange Traded Derivatives	Interest rate options	20,600	98%	77%	94%	100%	100%	100%	100%	100%	100%
	Interest rate futures	12,297	82%	33%	67%	88%	99%	100%	100%	100%	100%

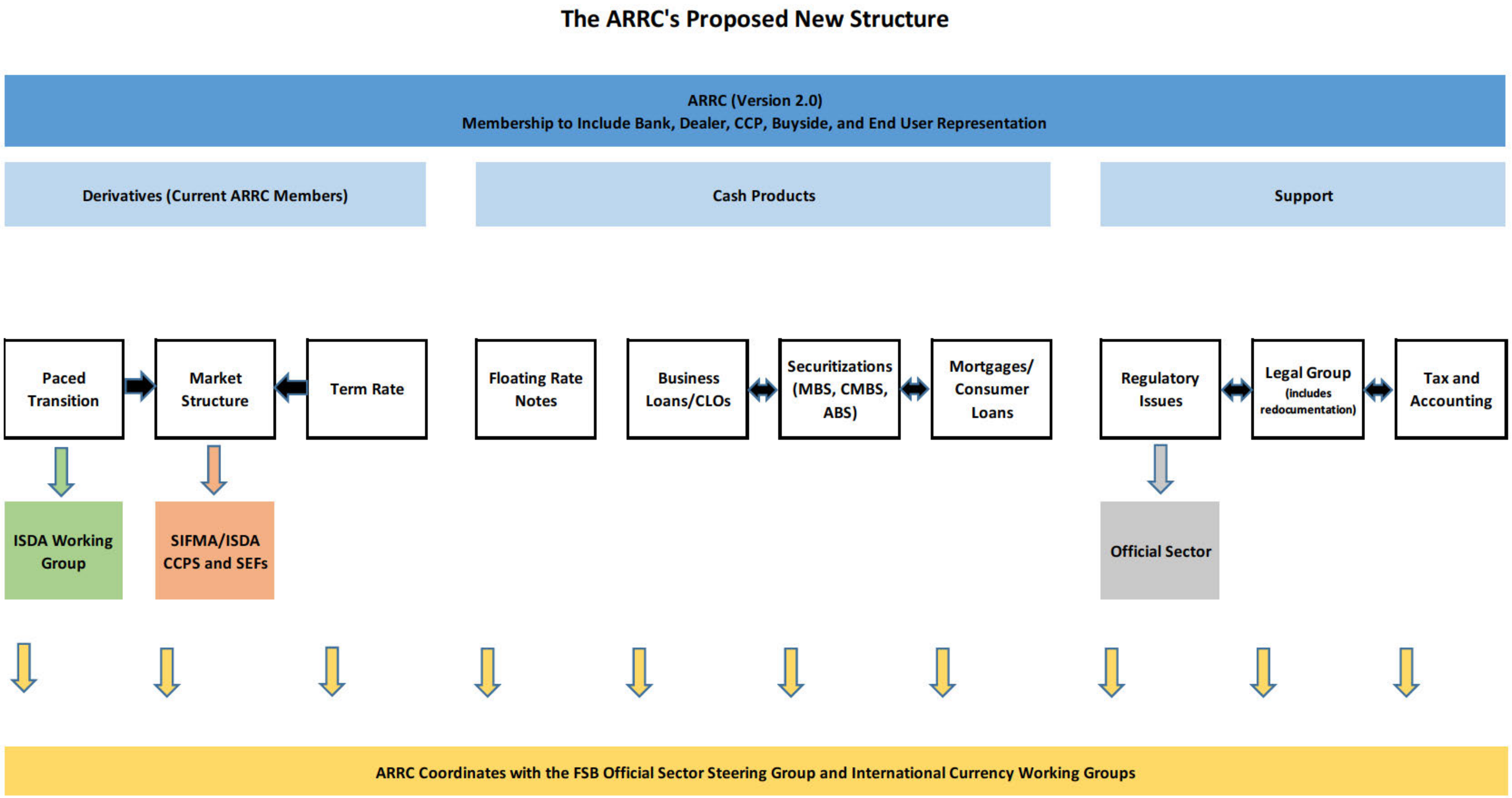
[1] Source: Market Participants Group (2014). Data as of year-end 2012. [2] Some overlap exists between estimates of syndicated and corporate business loans.

> $5 Trillion Estimated USD L BOR Exposure

$1-$5 Trillion Estimated USD L BOR Exposure

< $1 Trillion Estimated USD L BOR Exposure

The ARRC is Expanding to More Directly Address Cash Products



Fallback Language in Legacy Contracts

Preliminary Analysis:

- Mortgages and Other Consumer Products – Typical contract language in mortgages gives the noteholder the ultimate authority to name a successor rate if LIBOR was permanently discontinued. Other consumer loans may be more varied but thus far seem to have similar flexibility.

- Floating Rate Notes – Typical contract language would direct the calculation agent to first poll a sample of banks (similar to the ISDA fallback language) and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.

- Securitizations – Agency MBS allow Fannie Mae and Freddie Mac to name a successor rate if LIBOR was permanently discontinued, but typical contract language in other securitizations would require a poll of banks and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.

- Corporate Loans – Typical contract language appears to name the Prime Rate or the Effective Fed Funds Rate + a spread as the fallback if LIBOR was discontinued.

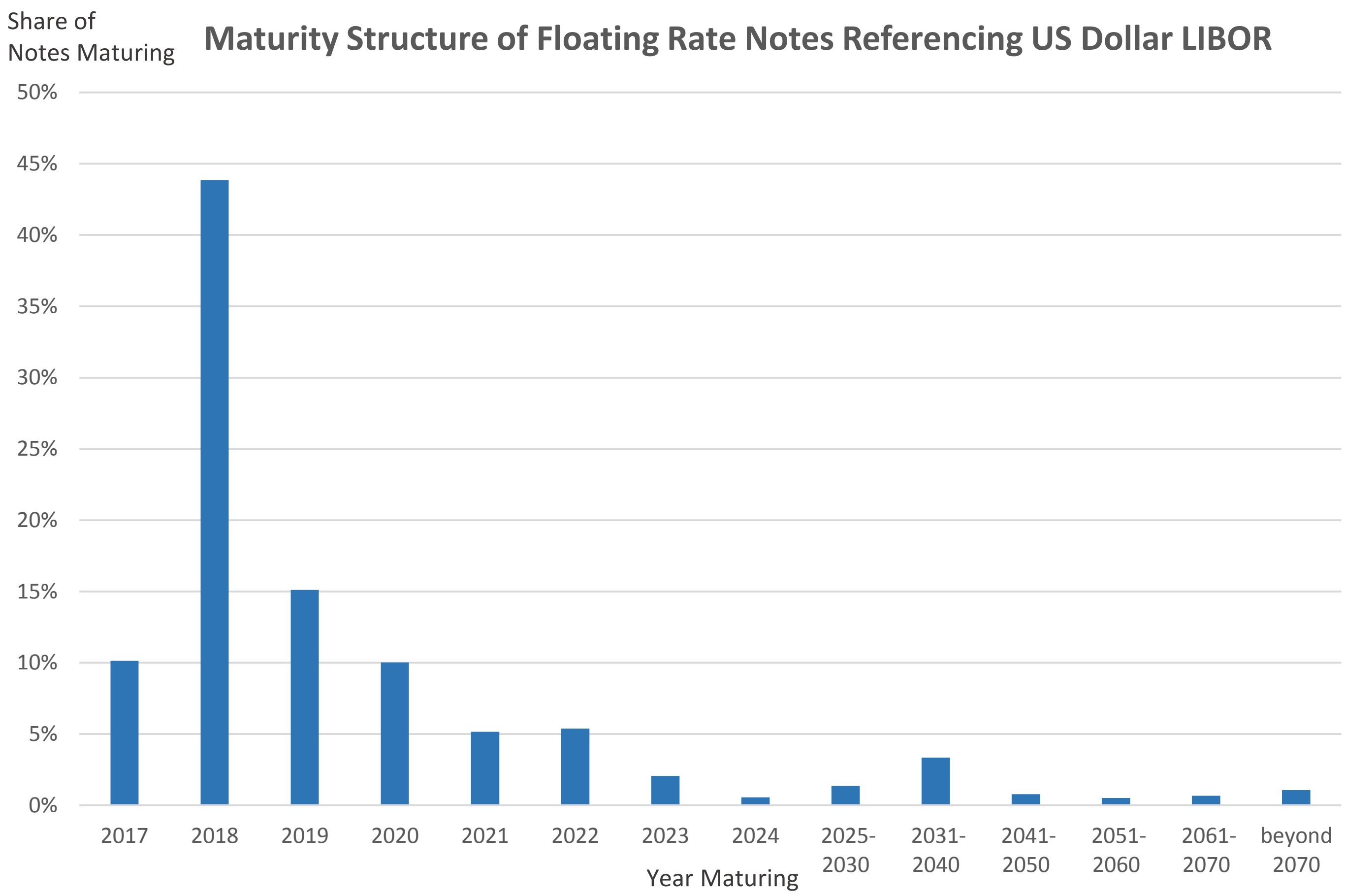
Floating Rate Notes

- Typical contract language might direct holders to first poll a sample of banks (similar to the ISDA fallback language) and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.

- It would typically require unanimous consent of the noteholders to adjust these terms

- There are an estimated $1.8 trillion in outstanding Floating Rate Notes referencing US dollar Libor.

- However, 84 percent of these FRNs will mature by the end of 2021, and 92 percent by the end of 2023.



Corporate Loans

Flow of Funds data estimate the level of nonfinancial corporate loans at $2.7 trillion (does not include committed but undrawn lines)

- A large share, $2.1 trillion, are syndicated loans (according to SNC data).
- Roughly 85 percent are floating rate
- A large share of those floating rate loans appear to reference LIBOR

Typical contract language appears to name the Prime Rate or the Effective Fed Funds Rate plus a spread as the fallback if LIBOR was discontinued

- Bilateral loans can be renegotiated by the borrower and lender to amend this.
- Syndicated loans currently tend to require unanimous lender consent to amend these terms

However, syndicated loans are amended fairly frequently, so it is very likely that most or all of the outstanding stock of loans would be amended before the end of 2021

Securitizations

Approximately $1.8 trillion in outstanding securitizations referencing US dollar LIBOR.

Typical contract language in other securitizations would require a poll of banks and then convert to fixed-rate at the last published value of LIBOR if quotes are not received.

- However, agency MBS allow the issuer to name a successor rate
- CLOs are typically called after an initial 1-2 year period, and which point fallback language could be amended.
- Will need further research into other securitization structures

Estimated Volumes Outstanding (Millions USD)

	RMBS	CLOs	CMOs	ABS	CDOs	CMBS	Total
Total	8,295,020	503,141	1,514,220	724,905	181,542	488,990	11,707,818
of which:							
FIXED	7,593,879	22,331	1,198,500	443,542	24,098	425,085	9,707,435
LIBOR	596,048	424,692	315,037	243,434	151,791	55,643	1,786,644
Other	105,093	56,117	683	37,930	5,653	8,263	213,739

Source: SIFMA