

Level 3 inputs^(a)

December 31, 2019

Product/Instrument	Fair value (in millions)	Principal valuation technique	Unobservable inputs ^(g)	Range of input values			Weighted average
Residential mortgage-backed securities and loans ^(b)	\$ 976	Discounted cash flows	Yield	2%	-	18%	6%
			Prepayment speed	0%	-	26%	13%
			Conditional default rate	0%	-	5%	0%
			Loss severity	0%	-	100%	5%
Commercial mortgage-backed securities and loans ^(c)	99	Market comparables	Price	\$0	-	\$100	\$79
Obligations of U.S. states and municipalities	10	Market comparables	Price	\$71	-	\$100	\$95
Corporate debt securities	558	Market comparables	Price	\$4	-	\$112	\$72
Loans ^(d)	193	Discounted cash flows	Yield	5%	-	28%	8%
	939	Market comparables	Price	\$2	-	\$116	\$70
Asset-backed securities	37	Market comparables	Price	\$1	-	\$102	\$71
Net interest rate derivatives	(395)	Option pricing	Interest rate volatility	6%	-	44%	
			Interest rate spread volatility	20bps	-	30bps	
			Interest rate correlation	(65)%	-	94%	
			IR-FX correlation	(58)%	-	40%	
	63	Discounted cash flows	Prepayment speed	4%	-	30%	
Net credit derivatives	(174)	Discounted cash flows	Credit correlation	31%	-	59%	
			Credit spread	3bps	-	1,308bps	
			Recovery rate	15%	-	70%	
			Conditional default rate	2%	-	18%	
	35	Market comparables	Loss severity		100%		
			Price	\$1	-	\$115	
Net foreign exchange derivatives	(469)	Option pricing	IR-FX correlation	(58)%	-	65%	
	(138)	Discounted cash flows	Prepayment speed		9%		
Net equity derivatives	(3,395)	Option pricing	Forward equity price ^(h)	92%	-	105%	
			Equity volatility	9%	-	93%	
			Equity correlation	10%	-	97%	
			Equity-FX correlation	(81)%	-	60%	
			Equity-IR correlation	25%	-	35%	
Net commodity derivatives	(16)	Option pricing	Forward commodity price	\$39	-	\$ 76 per barrel	
			Commodity volatility	5%	-	105%	
			Commodity correlation	(48)%	-	95%	
MSRs	4,699	Discounted cash flows	Refer to Note 15				
Other assets	222	Discounted cash flows	Credit spread		45bps		45bps
			Yield		12%		12%
	734	Market comparables	Price	\$17	-	\$117	\$37
Long-term debt, short-term borrowings, and deposits ^(e)	28,373	Option pricing	Interest rate volatility	6%	-	44%	
			Interest rate correlation	(65)%	-	94%	
			IR-FX correlation	(58)%	-	40%	
			Equity correlation	10%	-	97%	
			Equity-FX correlation	(81)%	-	60%	
			Equity-IR correlation	25%	-	35%	
Other level 3 assets and liabilities, net ^(f)	265						

(a) The categories presented in the table have been aggregated based upon the product type, which may differ from their classification on the Consolidated balance sheets. Furthermore, the inputs presented for each valuation technique in the table are, in some cases, not applicable to every instrument valued using the technique as the characteristics of the instruments can differ.

(b) Comprises U.S. GSEs and government agency securities of \$797 million, nonagency securities of \$24 million and trading loans of \$155 million.

(c) Comprises nonagency securities of \$4 million and trading loans of \$95 million.

(d) Comprises trading loans.

(e) Long-term debt, short-term borrowings and deposits include structured notes issued by the Firm that are financial instruments that typically contain embedded derivatives. The estimation of the fair value of structured notes includes the derivative features embedded within the instrument. The significant unobservable inputs are broadly consistent with those presented for derivative receivables.

(f) Includes level 3 assets and liabilities that are insignificant both individually and in aggregate.

(g) Price is a significant unobservable input for certain instruments. When quoted market prices are not readily available, reliance is generally placed on price-based internal valuation techniques. The price input is expressed assuming a par value of \$100.

(h) Forward equity price is expressed as a percentage of the current equity price.