

LTD - Margin Collateral Haircut Schedule			16-Aug-19	
Government Securities (Description & Bloomberg Code)		Term	Haircut (Conventional Bonds)	Haircut (Inflation Linked Bonds)
Australia	Australian Treasury Bill (ACTB) Australian Government Bond (ACGB) Australian Government I/L (ACGB)	11 business days <= 1yr	0.63%	0.63%
		> 1yr <= 3yrs	1.00%	1.00%
		> 3yrs <= 7 yrs	2.25%	2.25%
		> 7yrs <= 11yrs	2.75%	2.75%
		> 11yrs <= 30yrs	6.88%	6.88%
		> 30yrs <= 50yrs	NA	NA
Austria	Austrian Treasury Bill (RATB) Austrian Government Bond (RAGB)	4 business days <= 1yr	0.25%	NA
		> 1yr <= 3yrs	1.00%	NA
		> 3yrs <= 7 yrs	2.75%	NA
		> 7yrs <= 11yrs	3.00%	NA
		> 11yrs <= 30yrs	6.25%	NA
		> 30yrs <= 50yrs	8.38%	NA
Belgium	Belgian Treasury Bill (BGTB) Belgian Government Bond (BGB)	4 business days <= 1yr	0.88%	NA
		> 1yr <= 3yrs	1.75%	NA
		> 3yrs <= 7 yrs	3.50%	NA
		> 7yrs <= 11yrs	4.13%	NA
		> 11yrs <= 30yrs	8.00%	NA
		> 30yrs <= 50yrs	10.88%	NA
Canada	Canadian Treasury Bill (CTB) Canadian Government Bond (CAN) Canada Government Real Return Bond (CAN)	10 calendar days <= 1yr	0.25%	0.25%
		> 1yr <= 3yrs	0.88%	0.88%
		> 3yrs <= 7 yrs	1.63%	1.63%
		> 7yrs <= 11yrs	2.25%	2.50%
		> 11yrs <= 30yrs	5.00%	6.38%
		> 30yrs <= 50yrs	5.62%	NA
Denmark	Danish Treasury Bill (DGTB) Danish Government Bond (DGB) Danish Government I/L (DGBI)	6 business days <= 1yr	0.38%	0.38%
		> 1yr <= 3yrs	1.00%	1.00%
		> 3yrs <= 7 yrs	2.00%	2.00%
		> 7yrs <= 11yrs	2.63%	2.63%
		> 11yrs <= 30yrs	6.75%	NA
		> 30yrs <= 50yrs	NA	NA
Finland	Finnish Treasury Bill (RFTB) Finnish Government Bonds (RFGB)	4 business days <= 1yr	0.25%	NA
		> 1yr <= 3yrs	1.00%	NA
		> 3yrs <= 7 yrs	2.00%	NA
		> 7yrs <= 11yrs	2.75%	NA
		> 11yrs <= 30yrs	6.25%	NA
		> 30yrs <= 50yrs	NA	NA
France	Bons du Trésor à Taux Fixe et Intérêt Précompté (BTF) Bons du Trésor à Taux Fixe et Intérêt Annuel (BTNS) Bons du Trésor à Taux Fixe et Intérêt Annuel I/L (BTNS) Obligations Assimilables du Trésor (FRTR) Obligations Assimilables du Trésor I/L (FRTR)	4 business days <= 1yr	0.50%	0.50%
		> 1yr <= 3yrs	1.00%	1.00%
		> 3yrs <= 7 yrs	2.00%	3.00%
		> 7yrs <= 11yrs	2.88%	4.87%
		> 11yrs <= 30yrs	6.50%	8.38%
		> 30yrs <= 50yrs	9.25%	NA
Germany	German Treasury Bill (BUBILL) Bundesschatzanweisungen (BKO) Bundesobligationen (OBL) Bundesobligationen I/L (OBLI) Deutsche Bundesrepublik (DBR) Deutschland I/L (DBRI)	3 business days <= 1yr	0.25%	0.25%
		> 1yr <= 3yrs	0.88%	0.88%
		> 3yrs <= 7 yrs	2.00%	2.75%
		> 7yrs <= 11yrs	2.75%	3.25%
		> 11yrs <= 30yrs	7.00%	7.00%
		> 30yrs <= 50yrs	8.38%	NA
Italy	Buoni Ordinari del Tesoro (BOTS) Buoni del Tesoro Poliennali (BTPS) Buoni del Tesoro Poliennali I/L (BTPS) Certificati di Credito del Tesoro (CCTS)	3 business days <= 1yr	2.75%	3.25%
		> 1yr <= 3yrs	5.25%	6.00%
		> 3yrs <= 7 yrs	8.88%	9.25%
		> 7yrs <= 11yrs	10.63%	15.25%
		> 11yrs <= 30yrs	14.50%	18.00%
		> 30yrs <= 50yrs	16.38%	NA
Japan	Japanese Treasury Bill (JGTB) Japanese Treasury Discount Bill (JTDB) Japanese Government Bond (JGB)	6 business days <= 1yr	1.63%	NA
		> 1yr <= 3yrs	2.25%	NA
		> 3yrs <= 7 yrs	3.13%	NA
		> 7yrs <= 11yrs	3.13%	NA
		> 11yrs <= 30yrs	6.38%	NA
		> 30yrs <= 50yrs	8.38%	NA

Government Securities (Description & Bloomberg Code)		Term	Haircut (Conventional Bonds)	Haircut (Inflation Linked Bonds)
Luxembourg	Luxembougois Government Bonds (LGB)	5 business days <= 1yr	0.63%	NA
		> 1yr <= 3yrs	1.25%	NA
		> 3yrs <= 7 yrs	2.13%	NA
		> 7yrs <= 11yrs	2.88%	NA
		> 11yrs <= 30yrs	6.13%	NA
		> 30yrs <= 50yrs	8.38%	NA
Netherlands	Dutch Treasury Certificate (DTB) Dutch Government Bond (NETHER)	10 business days <= 1yr	0.62%	NA
		> 1yr <= 3yrs	0.88%	NA
		> 3yrs <= 7 yrs	2.00%	NA
		> 7yrs <= 11yrs	2.25%	NA
		> 11yrs <= 30yrs	6.38%	NA
		> 30yrs <= 50yrs	7.13%	NA
Norway	Norwegian Treasury Bill (NGTB) Norwegian Government Bond (NGB)	9 business days <= 1yr	0.25%	NA
		> 1yr <= 3yrs	1.25%	NA
		> 3yrs <= 7 yrs	2.25%	NA
		> 7yrs <= 11yrs	3.63%	NA
		> 11yrs <= 30yrs	NA	NA
		> 30yrs <= 50yrs	NA	NA
Spain	Spanish Letras del Tesoro (SGLT) Spanish Government Bond (SPGB)	3 business days <= 1yr	2.63%	NA
		> 1yr <= 3yrs	5.38%	NA
		> 3yrs <= 7 yrs	9.13%	NA
		> 7yrs <= 11yrs	11.38%	NA
		> 11yrs <= 30yrs	17.13%	NA
		> 30yrs <= 50yrs	18.63%	NA
Sweden	Swedish Treasury Bill (SWTB) Swedish Government Bond (SGB) Swedish Government IL (SGBI)	4 business days <= 1yr	0.13%	0.75%
		> 1yr <= 3yrs	1.00%	1.25%
		> 3yrs <= 7 yrs	2.25%	2.25%
		> 7yrs <= 11yrs	2.88%	2.88%
		> 11yrs <= 30yrs	6.63%	6.63%
		> 30yrs <= 50yrs	NA	NA
Switzerland	Swiss Treasury Bill (SWISTB) Swiss Government Bond (SWISS)	3 business days <= 1yr	0.63%	NA
		> 1yr <= 3yrs	0.88%	NA
		> 3yrs <= 7 yrs	1.75%	NA
		> 7yrs <= 11yrs	2.50%	NA
		> 11yrs <= 30yrs	8.50%	NA
		> 30yrs <= 50yrs	9.38%	NA
United Kingdom	United Kingdom Treasury Bill (UKTB) United Kingdom Gilt (UKT) United Kingdom Index Linked Gilt (UKTI)	9 business days <= 1yr	0.25%	0.25%
		> 1yr <= 3yrs	1.00%	1.00%
		> 3yrs <= 7 yrs	2.25%	3.25%
		> 7yrs <= 11yrs	3.00%	4.75%
		> 11yrs <= 30yrs	6.00%	7.88%
		> 30yrs	8.25%	11.88%
United States	United States Treasury Bill (B) United States Treasury Bond (T) United States Treasury Inflation Indexed Bond (TII)	3 business days <= 1yr	0.25%	0.63%
		> 1yr <= 3yrs	1.38%	2.38%
		> 3yrs <= 7 yrs	2.75%	3.00%
		> 7yrs <= 11yrs	3.50%	4.75%
		> 11yrs <= 30yrs	7.25%	10.75%
		> 30yrs <= 50yrs	NA	NA

Mortgage Backed Securities (Description & Bloomberg Code)		Term Since Issue	Haircut
US MBS	General National Mortgage Association (GNMA)	New (0 - 30 months)	12.00%
		Medium (30- 60 months)	14.50%
		Seasoned (> 60 months)	NA

Government & Regional Agencies (Description & Bloomberg Code)		Term	Haircut
EUR Agencies	Kreditanstalt für Wiederaufbau (KfW) FMS Wertmanagement (FMSWER)	<b>3 business days &lt;= 1yr</b>	0.63%
		> 1yr <= 3yrs	0.88%
		> 3yrs <= 7 yrs	1.75%
		> 7yrs <= 11yrs	2.63%
		> 11yrs <= 30yrs	9.38%
		> 30yrs <= 50yrs	NA
EUR Agencies	Rentenbank (RENTEN)	<b>2 business days &lt;= 1yr</b>	0.63%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	3.50%
		> 7yrs <= 11yrs	6.50%
		> 11yrs <= 30yrs	9.38%
		> 30yrs <= 50yrs	NA
US Agencies	Federal National Mortgage Association (FNMA) Federal Home Loan Mortgage Corporation (FHLMC) Federal Home Loan Banks (FHLB)	<b>3 business days &lt;= 1yr</b>	0.75%
		> 1yr <= 3yrs	1.50%
		> 3yrs <= 7 yrs	3.13%
		> 7yrs <= 11yrs	4.00%
		> 11yrs <= 30yrs	7.25%
		> 30yrs <= 50yrs	NA
REG Agencies	Kommuninvest I Sverige (KOMINS)	<b>6 business days &lt;= 1yr</b>	10.00%
		> 1yr <= 3yrs	10.00%
		> 3yrs <= 7 yrs	10.00%
		> 7yrs <= 11yrs	10.00%
		> 11yrs <= 30yrs	10.00%
		> 30yrs <= 50yrs	NA

Supranationals (Description & Bloomberg Code)		Term	Haircut
Supranationals	International Bank for Reconstruction & Development (IBRD)	<b>12 business days &lt;= 1yr</b>	0.63%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	3.50%
		> 7yrs <= 11yrs	6.50%
		> 11yrs <= 30yrs	8.50%
		> 30yrs <= 50yrs	NA
Supranationals	European Investment Bank (EIB)	<b>9 business days &lt;= 1yr</b>	0.50%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	4.75%
		> 7yrs <= 11yrs	6.50%
		> 11yrs <= 30yrs	8.50%
		> 30yrs <= 50yrs	NA
Supranationals	European Stability Facility Mechanism (EFSF) European Stability Mechanism (ESM) European Stability Mechanism T Bills (ESMTB)	<b>4 business days &lt;= 1yr</b>	0.50%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	3.50%
		> 7yrs <= 11yrs	6.50%
		> 11yrs <= 30yrs	8.50%
		> 30yrs <= 50yrs	NA
Supranationals	European Bank for Reconstruction & Development (EBRD)	<b>2 business days &lt;= 1yr</b>	0.50%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	3.50%
		> 7yrs <= 11yrs	NA
		> 11yrs <= 30yrs	NA
		> 30yrs <= 50yrs	NA
Supranationals	European Union (EU)	<b>12 business days &lt;= 1yr</b>	0.50%
		> 1yr <= 3yrs	2.00%
		> 3yrs <= 7 yrs	3.50%
		> 7yrs <= 11yrs	6.50%
		> 11yrs <= 30yrs	8.50%
		> 30yrs <= 50yrs	NA

<b>Market of Issue</b>	<p>Government securities must be issued in the home country of the Issuer and denominated in the domestic currency to be acceptable.</p> <p>Government &amp; Regional agencies must both be issued in the home country of the issuer and denominated in the domestic currency (with the exception of RentenBank which can be denominated in both EUR and USD) to be acceptable.</p> <p>Supranationals must be denominated in the currency specified below:  International Bank for Reconstruction &amp; Development: USD  European Bank for Reconstruction &amp; Development: USD  European Financial Stability Facility/European Stability Mechanism: EUR  European Investment Bank: EUR &amp; USD  European Union: EUR</p>
<b>Maximum Term Maturity</b>	<p>Haircuts have been set appropriately to reflect the maximum term maturity for each issuer at the time of review, however there may be additional constraints based on currency (please refer below). Any new issuances of maturity greater than those at review will need to be assessed before being accepted as margin collateral. Where a haircut has not been defined the maturity bucket is not considered eligible.</p> <p>Conventional Bonds maximum eligible term:</p> <p>Australia: 30 yrs  Denmark: 30 yrs  Finland: 30 yrs  Germany: 32 yrs  Norway: 11 yrs  Sweden: 30 yrs  United States: 30 yrs  Kreditanstalt für Wiederaufba: 30 yrs  FMS Wertmanagement: 30 yrs  Kommuninvest 1 Sverige: 30 yrs  Landwirtsch.Rentenbank (EUR denominated bonds) : 30yrs  Landwirtsch.Rentenbank (USD denominated bonds) : 11yrs  International Bank for Reconstruction &amp; Development: 30 yrs  European Bank for Reconstruction &amp; Development: 7 yrs  European Financial Stability Facility/European Stability Mechanism: 30yrs  European Investment Bank: 30 yrs  European Union: 30 yrs</p> <p>Inflation Linked Bonds maximum eligible term:</p> <p>Australia ILB: 25 yrs  Denmark ILB: 11 yrs  France ILB: 30 yrs  Italy ILB: 30 yrs  Sweden ILB: 30 yrs  United States ILB: 30 yrs  Canada ILB: 30 yrs  Germany ILB: 30 yrs</p>
<b>Excluded Instruments</b>	<p>Zero coupon bonds, stripped bonds and perpetual bonds.  Japanese Govt FRNs and Japanese Govt ILBs</p>
<b>Concentration Controls</b>	<p>In addition to the concentration limits in place upon particular asset types as noted above, LCH reserves the right to manage specific concentrations in margin collateral in all circumstances. Where positions are considered to be excessively concentrated, members will be contacted directly with a view to re-alignment of their portfolio.</p>
<b>Swiss Bonds</b>	<p>Swiss Bonds can currently only be accepted via the tri-party service offered at EuroClear and Clearstream.</p>
<b>Bilateral Only</b>	<p>The following Issuers can currently only be accepted Bilaterally with LCH: RENTEN, KOMINS, IBRD, EIB, EFSF,ESM, ESMTB, EBRD and EU</p>

## LTD - Margin Collateral FX Haircut Schedule

16-Aug-19

## FX Haircuts

Haircuts	FX (Cash & Non-Cash)	Using the grid below, LCH will apply a FX haircut in any instances where there is a mismatch between the currency of risk on the cleared positions and currency of collateral (cash and non-cash)					
			Currency of Risk				
			USD	EUR	GBP	NOK *	CHF *
		USD	0.0%	4.0%	4.8%	4.8%	5.3%
		EUR	4.1%	0.0%	3.7%	4.0%	4.3%
		GBP	5.0%	3.8%	0.0%	4.7%	6.0%
		AUD	6.5%	5.5%	5.5%	4.1%	7.7%
		CHF	5.2%	4.2%	5.9%	5.6%	0.0%
		JPY	4.4%	5.9%	8.0%	7.0%	6.0%
		SEK	5.0%	3.3%	5.4%	3.2%	5.5%
		DKK	4.1%	0.1%	3.7%	3.9%	4.3%
		NOK	5.0%	3.9%	4.6%	0.0%	5.7%
	CAD	4.1%	4.3%	4.2%	3.8%	6.1%	
	USD, EUR and GBP are the primary currencies of risk * CHF and NOK are exceptional currencies of risk available in some clearing services						
	Additional	Certain collateral can at times be subject to additional haircuts above those stated. Members lodging this collateral will be contacted directly as appropriate, and further detail can be obtained by contacting LCH.					