UBS AG
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FINAL TERMS SUPPLEMENT

(To Prospectus dated October 31, 2018, Product Supplement dated October 31, 2018 and Prospectus Supplement dated November 1, 2018)

Final Terms Supplement

UBS AG Trigger Phoenix Autocallable Optimization Securities

UBS AG $250,000.00 Securities Linked to the common stock of Caterpillar Inc. due on November 13, 2020

Final Terms

Issuer	UBS AG, London Branch
Principal Amount	$10.00 per security. The Securities are offered at a minimum investment of 100 Securities at $10.00 per Security (representing a $1,000 investment) and integral multiples of $10.00 in excess thereof.
Term	Approximately 24 months, unless called earlier.
Underlying Asset	The common stock of Caterpillar Inc.
Contingent Coupon	If the closing price of the underlying asset is equal to or greater than the coupon barrier on any observation date, UBS will pay you the contingent coupon applicable to such observation date. If the closing price of the underlying asset is less than the coupon barrier on any observation date, the contingent coupon applicable to such observation date will not be payable and UBS will not make any payment to you on the relevant coupon payment date. The contingent coupon will be a fixed amount based upon equal quarterly installments at the per annum contingent coupon rate. Contingent coupons are not guaranteed and UBS will not pay you the contingent coupon for any observation date on which the closing price of the underlying asset is less than the coupon barrier. The table below reflects the contingent coupon rate of 9.98% per annum. Amounts in the table below may have been rounded for ease of analysis.

Observation Date*	Contingent Coupon (per security)
07-Feb-2019	$0.2495

07-May-2019	$0.2495
07-Aug-2019	$0.2495
07-Nov-2019	$0.2495
07-Feb-2020	$0.2495
07-May-2020	$0.2495
07-Aug-2020	$0.2495
09-Nov-2020	$0.2495

	*Observation dates are subject to the market disruption event provisions set forth in the accompanying product supplement.
Contingent Coupon Rate	9.98% per annum (or approximately 2.495% per outstanding quarter).
Automatic Call Feature	The Securities will be called automatically if the closing price of the underlying asset on any observation date is equal to or greater than the initial price. If the Securities are called on any observation date, UBS will pay you on the corresponding coupon payment date a cash payment per Security equal to your principal amount plus the contingent coupon otherwise due on such date pursuant to the contingent coupon feature. No further amounts will be owed to you under the Securities.
Payment at Maturity (per Security)	If the Securities are not called and the final price is equal to or greater than the trigger price and coupon barrier, UBS will pay you a cash payment per Security on the maturity date equal to your principal plus the contingent coupon otherwise due on the maturity date. If the Securities are not called and the final price is less than the trigger price, UBS will pay you a cash payment on the maturity date of significantly less than the principal amount, if anything, resulting in a loss of principal that is proportionate to the decline of the underlying asset, for an amount equal to $10 + ($10 x underlying return).
Underlying Return	$$\frac{\text{Final Price} - \text{Initial Price}}{\text{Initial Price}}$$
Closing Price	On any trading day, the last reported sale price (or, in the case of NASDAQ, the official closing price) of the underlying asset during the principal trading session on the principal national securities exchange on which it is listed for trading, as determined by the calculation agent.
Initial Price	$135.10, which is the closing price of the underlying asset on the trade date, as determined by the calculation agent and as may be adjusted in the case of certain corporate events, as described in the accompanying product supplement.

Trigger Price/Coupon Barrier	$94.57, which is 70.00% of the initial price of the underlying asset, as determined by the calculation agent and as may be adjusted in the case of certain corporate events, as described in the accompanying product supplement.
Final Price	The closing price of the underlying asset on the final valuation date, as determined by the calculation agent and subject to adjustments in the case of certain corporate events, as described in the accompanying product supplement.
Trade Date	November 7, 2018
Settlement Date	November 9, 2018
Final Valuation Date	November 9, 2020 (subject to postponement in the event of a market disruption event, as described in the accompanying product supplement)
Maturity Date	November 13, 2020 (subject to postponement in the event of a market disruption event, as described in the accompanying product supplement)
Coupon Payment Dates	Three business days following each observation date, except the coupon payment date for the final valuation date will be the maturity date.
CUSIP	90286K341
ISIN	US90286K3418
Valoren	44511230

The estimated initial value of the Securities as of the trade date is $9.65 for Securities linked to the underlying asset. The estimated initial value of the Securities was determined as of the close of the relevant markets on the date of this final terms supplement by reference to UBS' internal pricing models, inclusive of the internal funding rate. For more information about secondary market offers and the estimated initial value of the Securities, see "Key Risks - Fair value considerations" and "Key Risks - Limited or no secondary market and secondary market price considerations" in this final terms supplement.

Notice to investors: the Securities are significantly riskier than conventional debt instruments. The issuer is not necessarily obligated to repay the full principal amount of the Securities at maturity, and the Securities may have the same downside market risk as the underlying asset. This market risk is in addition to the credit risk inherent in purchasing a debt obligation of UBS. You should not purchase the Securities if you do not understand or are not comfortable with the significant risks involved in investing in the Securities.

You should carefully consider the risks described under "Key Risks" in this final terms supplement, under "Key Risks" beginning on page 3 of the prospectus supplement and under ''Risk Factors'' beginning on page PS-9 of the accompanying product supplement before purchasing any Securities. Events relating to any of those risks, or other risks and uncertainties, could adversely affect the market value of, and the return on, your Securities. You may lose a significant portion or all of your initial investment in the Securities. The Securities will not be listed or displayed on any securities exchange or any electronic communications network.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these Securities or passed upon the adequacy or accuracy of this final terms supplement, the previously delivered prospectus supplement, the accompanying product supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

The Securities are not bank deposits and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency.

See "Additional Information about UBS and the Securities" in this final terms supplement. The Securities we are offering will have the terms set forth in the Prospectus Supplement dated November 1, 2018 relating to the Securities, the accompanying product supplement, the accompanying prospectus and this final terms supplement.

Offering of Securities	Issue Price to Public		Underwriting Discount		Proceeds to UBS AG	
	Total	Per Security	Total	Per Security	Total	Per Security
Securities linked to the common stock of Caterpillar Inc.	$250,000.00	$10.00	$3,750.00	$0.15	$246,250.00	$9.85

UBS Financial Services Inc. **UBS Investment Bank**

Final Terms Supplement dated November 7, 2018

Additional Information About UBS and the Securities

UBS has filed a registration statement (including a prospectus, as supplemented by a product supplement and a prospectus supplement for the Securities) with the Securities and Exchange Commission, or SEC, for the offering for which this final terms supplement relates. Before you invest, you should read these documents and any other documents relating to the Securities that UBS has filed with the SEC for more complete information about UBS and this offering. You may obtain these documents for free from the SEC website at www.sec.gov. Our Central Index Key, or CIK, on the SEC website is 0001114446.

You may access these documents on the SEC website at www.sec.gov as follows:

- Prospectus supplement dated November 1, 2018: http://www.sec.gov/Archives/edgar/data/1114446/000091412118002132/ub46175276-424b2.htm
- Market-Linked Securities product supplement dated October 31, 2018: http://www.sec.gov/Archives/edgar/data/1114446/000091412118002085/ub47016353-424b2.htm
- Prospectus dated October 31, 2018: http://www.sec.gov/Archives/edgar/data/1114446/000119312518314003/d612032d424b3.htm

References to "UBS," "we," "our" and "us" refer only to UBS AG and not to its consolidated subsidiaries. In this document, "Trigger Phoenix Autocallable Optimization Securities" or the "Securities" refer to the Securities that are offered hereby. Also, references to the "prospectus supplement" mean the UBS prospectus supplement, dated November 1, 2018, references to "Market-Linked Securities product supplement" mean the UBS product supplement, dated October 31, 2018, relating to the Securities generally, and references to the "accompanying prospectus" mean the UBS prospectus titled "Debt Securities and Warrants", dated October 31, 2018.

This final terms supplement, together with the documents listed above, contains the terms of the Securities and supersedes all other prior or contemporaneous oral statements as well as any other written materials including pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in "Key Risks" and in "Risk Factors" in the accompanying product supplement, as the Securities involve risks not associated with conventional debt

securities. We urge you to consult your investment, legal, tax, accounting and other advisors before deciding to invest in the Securities.

UBS reserves the right to change the terms of, or reject any offer to purchase, the Securities prior to their issuance. In the event of any changes to the terms of the Securities, UBS will notify you and you will be asked to accept such changes in connection with your purchase. You may also choose to reject such changes in which case UBS may reject your offer to purchase.

Key Risks

An investment in the Securities involves significant risks. Some of the risks that apply to the Securities are summarized here and are comparable to the corresponding risks discussed in the "Key Risks" section of the prospectus supplement, but we urge you to read the more detailed explanation of risks relating to the Securities generally in ‘‘Risk Factors’’ section of the accompanying product supplement. We also urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the Securities.

- **Risk of loss at maturity -** The Securities differ from ordinary debt securities in that UBS will not necessarily pay the full principal amount of the Securities at maturity. If the Securities are not called, UBS will repay you the principal amount of your Securities in cash only if the final price of the underlying asset is equal to or greater than the trigger price and will only make such payment at maturity. If the Securities are not called and the final price is less than the trigger price, you will be fully exposed to the negative underlying return and lose a significant portion or all of your initial investment in an amount proportionate to the decline in the price of the underlying asset.
- **The contingent repayment of your principal applies only at maturity -** You should be willing to hold your Securities to maturity. If you are able to sell your Securities prior to maturity in the secondary market, you may have to sell them at a loss relative to your initial investment even if the then-current underlying asset price is equal to or greater than the trigger price at that time.
- **You may not receive any contingent coupons -** UBS will not necessarily pay periodic contingent coupons on the Securities. If the closing price of the underlying asset on an observation date is less than the coupon barrier, UBS will not pay you the contingent coupon applicable to such observation date. If the closing price of the underlying asset is less than the coupon barrier on each of the observation dates, UBS will not pay you any contingent coupons during the term of, and you will not receive a positive return on, your Securities. Generally, this non-payment of the contingent coupon coincides with a period of greater risk of principal loss on your Securities.
- **Your potential return on the Securities is limited and you will not participate in any appreciation of the underlying asset** - The return potential of the Securities is limited to the contingent coupon rate, regardless of the appreciation of the underlying asset. In addition, the total return on the

Securities will vary based on the number of observation dates on which the requirements of the contingent coupon have been met prior to maturity or an automatic call. Further, if the Securities are called due to the automatic call feature, you will not receive any contingent coupons or any other payment in respect of any observation dates after the applicable call settlement date. Since the Securities could be called as early as the first observation date, the total return on the Securities could be minimal. If the Securities are not called, you will not participate in any appreciation in the price of the underlying asset even though you will be subject to the underlying asset's risk of decline. As a result, the return on an investment in the Securities could be less than the return on a direct investment in the underlying asset.

- **Higher contingent coupon rates are generally associated with a greater risk of loss -** Greater expected volatility with respect to the underlying asset reflects a higher expectation as of the trade date that the price of such underlying asset could close below its trigger price on the final valuation date of the Securities. This greater expected risk will generally be reflected in a higher contingent coupon rate for that Security. However, an underlying asset's volatility can change significantly over the term of the Securities and the price of the underlying asset for your Securities could fall sharply, which could result in a significant loss of principal.
- **Reinvestment risk -** The Securities will be called automatically if the closing price of the underlying asset is equal to or greater than the initial price on any observation date. In the event that the Securities are called prior to maturity, there is no guarantee that you will be able to reinvest the proceeds from an investment in the Securities at a comparable rate of return for a similar level of risk. To the extent you are able to reinvest such proceeds in an investment comparable to the Securities, you will incur transaction costs and the original issue price for such an investment is likely to include certain built-in costs such as dealer discounts and hedging costs.
- **Greater expected volatility generally indicates an increased risk of loss at maturity -** "Volatility" refers to the frequency and magnitude of changes in the price of the underlying asset. The greater the expected volatility of the underlying asset as of the trade date, the greater the expectation is as of the trade date that the closing price of the underlying asset could be less than the coupon barrier on any observation date and that the final price of the underlying asset could be less than the trigger price on the final valuation date and, as a consequence, indicates an increased risk of loss. However, the underlying asset's volatility can change significantly over the term of the Securities, and a relatively lower coupon barrier and/or trigger price may not necessarily indicate that the Securities have a greater likelihood of a return of principal at maturity. You should be willing to accept the downside market risk of the underlying asset and the potential to lose a significant portion or all of your initial investment.
- **Credit risk of UBS -** The Securities are unsubordinated, unsecured debt obligations of the issuer, UBS, and are not, either directly or indirectly, an obligation of any third party. Any payment to be made on the Securities, including any repayment of principal, depends on the ability of UBS to satisfy its obligations as they come due. As a result, the actual and perceived creditworthiness of UBS may affect the market value of the Securities and, in the event UBS were to default on its obligations, you may not receive any amounts owed to you under the terms of the Securities and you could lose your

entire investment.

- **Market risk** - The price of the underlying asset can rise or fall sharply due to factors specific to that underlying asset and (i) in the case of common stock or American depositary receipts, its issuer (the "underlying asset issuer") or (ii) in the case of an exchange traded fund, the securities, futures contracts or physical commodities constituting the assets of that underlying asset. These factors include price volatility, earnings, financial conditions, corporate, industry and regulatory developments, management changes and decisions and other events, as well as general market factors, such as general market volatility and levels, interest rates and economic and political conditions. You, as an investor in the Securities, should make your own investigation into the underlying asset issuer and the underlying asset for your Securities. **We urge you to review financial and other information filed periodically by the underlying asset issuer with the SEC.**

- **Fair value considerations.**

The issue price you pay for the Securities exceeds their estimated initial value - The issue price you pay for the Securities exceeds their estimated initial value as of the trade date due to the inclusion in the issue price of the underwriting discount, hedging costs, issuance costs and projected profits. As of the close of the relevant markets on the trade date, we determined the estimated initial value of the Securities by reference to our internal pricing models and it is set forth in this final terms supplement. The pricing models used to determine the estimated initial value of the Securities incorporate certain variables, including the price, volatility and expected dividends on the underlying asset, prevailing interest rates, the term of the Securities and our internal funding rate. Our internal funding rate is typically lower than the rate we would pay to issue conventional fixed or floating rate debt securities of a similar term. The underwriting discount, hedging costs, issuance costs, projected profits and the difference in rates will reduce the economic value of the Securities to you. Due to these factors, the estimated initial value of the Securities as of the trade date is less than the issue price you pay for the Securities.

- **The estimated initial value is a theoretical price; the actual price that you may be able to sell your Securities in any secondary market (if any) at any time after the trade date may differ from the estimated initial value** - The value of your Securities at any time will vary based on many factors, including the factors described above and in “- Market risk” above and is impossible to predict. Furthermore, the pricing models that we use are proprietary and rely in part on certain assumptions about future events, which may prove to be incorrect. As a result, after the trade date, if you attempt to sell the Securities in the secondary market, the actual value you would receive may differ, perhaps materially, from the estimated initial value of the Securities determined by reference to our internal pricing models. The estimated initial value of the Securities does not represent a minimum or maximum price at which we or any of our affiliates would be willing to purchase your Securities in any secondary market at any time.

- **Our actual profits may be greater or less than the differential between the estimated initial value and the issue price of the Securities as of the trade date** - We may determine the economic terms of the Securities, as well as hedge our obligations, at least in part, prior to pricing the Securities on the trade date. In addition, there may be ongoing costs to us to maintain and/or adjust any hedges and such hedges are often imperfect. Therefore, our actual profits (or potentially, losses) in issuing the Securities cannot be determined as of the trade date and any such differential between the estimated initial value and the issue price of the Securities as of the trade date does not reflect our actual

profits. Ultimately, our actual profits will be known only at the maturity of the Securities.

- **Limited or no secondary market and secondary market price considerations.**

  - **There may be little or no secondary market for the Securities** - The Securities will not be listed or displayed on any securities exchange or any electronic communications network. There can be no assurance that a secondary market for the Securities will develop. UBS Securities LLC and its affiliates may make a market in each offering of the Securities, although they are not required to do so and may stop making a market at any time. If you are able to sell your Securities prior to maturity, you may have to sell them at a substantial loss. The estimated initial value of the Securities does not represent a minimum or maximum price at which we or any of our affiliates would be willing to purchase your Securities in any secondary market at any time.
  - **The price at which UBS Securities LLC and its affiliates may offer to buy the Securities in the secondary market (if any) may be greater than UBS' valuation of the Securities at that time, greater than any other secondary market prices provided by unaffiliated dealers (if any) and, depending on your broker, greater than the valuation provided on your customer account statements** - For a limited period of time following the issuance of the Securities, UBS Securities LLC or its affiliates may offer to buy or sell such Securities at a price that exceeds (i) our valuation of the Securities at that time based on our internal pricing models, (ii) any secondary market prices provided by unaffiliated dealers (if any) and (iii) depending on your broker, the valuation provided on customer account statements. The price that UBS Securities LLC may initially offer to buy such Securities following issuance will exceed the valuations indicated by our internal pricing models due to the inclusion for a limited period of time of the aggregate value of the underwriting discount, hedging costs, issuance costs and theoretical projected trading profit. The portion of such amounts included in our price will decline to zero on a straight line basis over a period ending no later than the date specified under "Supplemental Plan of Distribution (Conflicts of Interest); Secondary Markets (if any)." Thereafter, if UBS Securities LLC or an affiliate makes secondary markets for the Securities, it will do so at prices that reflect our estimated value determined by reference to our internal pricing models at that time. The temporary positive differential relative to our internal pricing models arises from requests from and arrangements made by UBS Securities LLC with the selling agents of structured debt securities such as the Securities. As described above, UBS Securities LLC and its affiliates are not required to make a market for the Securities and may stop making a market at any time. The price at which UBS Securities LLC or an affiliate may make secondary markets at any time (if at all) will also reflect its then current bid-ask spread for similar sized trades of structured debt securities. UBS Financial Services Inc. and UBS Securities LLC reflect this temporary positive differential on their customer statements. Investors should inquire as to the valuation provided on customer account statements provided by unaffiliated dealers.
  - **Price of Securities prior to maturity** - The market price of the Securities will be influenced by many unpredictable and interrelated factors, including the price of the underlying asset; the volatility of the underlying asset; the dividend rate paid on the underlying asset; the time remaining to the maturity of the Securities; interest rates in the markets; geopolitical conditions and economic, financial, political, force majeure and regulatory or judicial events; the

creditworthiness of UBS and the then current bid-ask spread for the Securities.

- **Impact of fees and the use of internal funding rates rather than secondary market credit spreads on secondary market prices** - All other things being equal, the use of the internal funding rates described above under "- Fair value considerations" as well as the inclusion in the issue price of the underwriting discount, hedging costs, issuance costs and any projected profits are, subject to the temporary mitigating effect of UBS Securities LLC's and its affiliates' market making premium, expected to reduce the price at which you may be able to sell the Securities in any secondary market.

- **Owning the Securities is not the same as owning the underlying asset -** The return on your Securities may not reflect the return you would realize if you actually owned the underlying asset. For instance, you will not receive or be entitled to receive any dividend payments or other distributions on the underlying asset over the term of your Securities. Furthermore, the underlying asset may appreciate substantially during the term of your Securities and you will not participate in such appreciation.
- **No assurance that the investment view implicit in the Securities will be successful -** It is impossible to predict whether and the extent to which the price of the underlying asset will rise or fall. The price of the underlying asset will be influenced by complex and interrelated political, economic, financial and other factors that affect the underlying asset issuer. You should be willing to accept the risks of owning equities in general and the underlying asset in particular, and the risk of losing a significant portion or all of your initial investment.
- **There is no affiliation between the underlying asset issuer, or for Securities linked to exchange traded funds, the issuers of the constituent stocks comprising the underlying asset (the "underlying asset constituent stock issuers"), and UBS, and UBS is not responsible for any disclosure by such issuer(s)** - We and our affiliates may currently, or from time to time in the future engage in business with the underlying asset issuer or, if applicable, any underlying asset constituent stock issuers. However, we are not affiliated with the underlying asset issuer or any underlying asset constituent stock issuers and are not responsible for such issuer's public disclosure of information, whether contained in SEC filings or otherwise. You, as an investor in the Securities, should make your own investigation into the underlying asset issuer or, if applicable, each underlying asset constituent stock issuer. Neither the underlying asset issuer nor any underlying asset constituent stock issuer is involved in the Securities offered hereby in any way and has no obligation of any sort with respect to your Securities. Such issuer(s) have no obligation to take your interests into consideration for any reason, including when taking any corporate actions that might affect the value of, and any amounts payable on, your Securities.
- **The calculation agent can make adjustments that affect the payment to you at maturity-** For certain corporate events affecting the underlying asset, the calculation agent may make adjustments to the initial price, the coupon barrier, the trigger price and/or the final price of the underlying asset. However, the calculation agent will not make an adjustment in response to all events that could affect the underlying asset. If an event occurs that does not require the calculation agent to make an adjustment, the value of the Securities may be materially and adversely affected. In addition, all determinations and calculations concerning any such adjustments will be made by the calculation agent. You should be aware that the calculation agent may make any such adjustment, determination or calculation in a manner that differs from that discussed in the accompanying product supplement as necessary to achieve an equitable result. In the case of common stock or American depositary receipts, following certain corporate events relating to the issuer of the underlying asset where the issuer is not the surviving entity, the amount of cash you receive at maturity may be based on the common stock or American depositary receipts of a successor to the underlying asset issuer in combination with any cash or any other assets distributed to holders of the underlying asset in such corporate event. Additionally, if the issuer of the underlying asset becomes subject to (i) a reorganization event whereby the underlying asset is exchanged solely for cash, (ii) a merger or consolidation with UBS or any of its affiliates or (iii) an underlying asset is delisted or otherwise suspended from trading, the amount you receive at maturity may be based on the common stock or American depositary receipts issued by another company. In the case of an exchange traded fund, following a suspension from trading or if an exchange traded fund is discontinued, the amount you receive at maturity may be based on a share of another exchange traded fund. The

occurrence of these corporate events and the consequent adjustments may materially and adversely affect the value of the Securities. For more information, see the sections "General Terms of the Securities -- Antidilution Adjustments for Securities Linked to an Underlying Asset or Equity Basket Asset" and " --Reorganization Events for Securities Linked to an Underlying Asset or Equity Basket Asset" in the accompanying product supplement. Regardless of the occurrence of one or more dilution or reorganization events, you should note that at maturity UBS will pay you an amount in cash equal to your principal amount, unless the final price of the underlying asset is below the trigger price (as such trigger price may be adjusted by the calculation agent upon occurrence of one or more such events). Regardless of any of the events discussed above, any payment on the Securities is subject to the creditworthiness of UBS.

- **Potential UBS impact on the market price of the underlying asset** - Trading or transactions by UBS or its affiliates in the underlying asset and/or over-the-counter options, futures or other instruments with returns linked to the performance of the underlying asset may adversely affect the market price of the underlying asset and, therefore, the market value of, and any amounts payable on, your Securities.
- **Potential conflict of interest -** UBS and its affiliates may engage in business with the issuer of the underlying asset, which may present a conflict between the obligations of UBS and you, as a holder of the Securities. There are also potential conflicts of interest between you and the calculation agent, which will be an affiliate of UBS. The calculation agent will determine whether the final price is below the trigger price and accordingly the payment at maturity on your Securities. The calculation agent may also postpone the determination of the final price and the maturity date if a market disruption event occurs and is continuing on the final valuation date and may make adjustments to the initial price, the trigger price, the coupon barrier, the final price and/or the underlying asset itself for certain corporate events affecting the underlying asset. For more information, see the sections "General Terms of the Securities -- Antidilution Adjustments for Securities Linked to an Underlying Asset or Equity Basket Asset" and " --Reorganization Events for Securities Linked to an Underlying Asset or Equity Basket Asset" in the accompanying product supplement. As UBS determines the economic terms of the Securities, including the contingent coupon rate, trigger price and coupon barrier, and such terms include the underwriting discount, hedging costs, issuance costs and projected profits, the Securities represent a package of economic terms. There are other potential conflicts of interest insofar as an investor could potentially get better economic terms if that investor entered into exchange-traded and/or OTC derivatives or other instruments with third parties, assuming that such instruments were available and the investor had the ability to assemble and enter into such instruments.
- **Potentially inconsistent research, opinions or recommendations by UBS -** UBS and its affiliates publish research from time to time on financial markets and other matters that may influence the value of the Securities, or express opinions or provide recommendations that are inconsistent with purchasing or holding the Securities. Any research, opinions or recommendations expressed by UBS or its affiliates may not be consistent with each other and may be modified from time to time without notice. Investors should make their own independent investigation of the merits of investing in the Securities and the underlying asset to which the Securities are linked.
- **The Securities are not bank deposits -** An investment in the Securities carries risks which are very different from the risk profile of a bank deposit placed with UBS or its affiliates. The Securities have different yield and/or return, liquidity and risk profiles and would not benefit from any protection provided to deposits.
- **If UBS experiences financial difficulties, FINMA has the power to open restructuring or liquidation proceedings in respect of, and/or impose protective measures in relation to, UBS, which proceedings or measures may have a material adverse effect on the terms and market value of the Securities and/or the ability of UBS to make payments thereunder -** The Swiss Financial Market Supervisory Authority ("FINMA") has broad statutory powers to take measures and actions in relation to UBS if (i) it concludes that there is justified concern that UBS is over-indebted or has serious liquidity problems or (ii) UBS fails to fulfil the applicable capital adequacy requirements (whether on a standalone or consolidated basis) after expiry of a deadline set by FINMA. If one of these pre-requisites is met, FINMA is authorized to open restructuring proceedings or liquidation (bankruptcy) proceedings in respect of, and/or impose protective measures in relation to, UBS. The Swiss Banking Act grants significant discretion to FINMA in connection with the aforementioned proceedings and measures. In particular, a broad variety of protective measures may be imposed by FINMA, including a bank moratorium or a maturity postponement, which measures may be ordered by FINMA either on a stand-alone basis or in connection with restructuring or liquidation proceedings. The resolution regime of the Swiss Banking Act is further detailed in

the FINMA Banking Insolvency Ordinance ("BIO-FINMA"). In a restructuring proceeding, FINMA, as resolution authority, is competent to approve the resolution plan. The resolution plan may, among other things, provide for (a) the transfer of all or a portion of UBS's assets, debts, other liabilities and contracts (which may or may not include the contractual relationship between UBS and the holders of Securities) to another entity, (b) a stay (for a maximum of two business days) on the termination of contracts to which UBS is a party, and/or the exercise of (w) rights to terminate, (x) netting rights, (y) rights to enforce or dispose of collateral or (z) rights to transfer claims, liabilities or collateral under contracts to which UBS is a party, (c) the conversion of UBS's debt and/or other obligations, including its obligations under the Securities, into equity (a "debt-to-equity" swap), and/or (d) the partial or full write-off of obligations owed by UBS (a "write-off"), including its obligations under the Securities. The BIO-FINMA provides that a debt-to-equity swap and/or a write-off of debt and other obligations (including the Securities) may only take place after (i) all debt instruments issued by UBS qualifying as additional tier 1 capital or tier 2 capital have been converted into equity or written-off, as applicable, and (ii) the existing equity of UBS has been fully cancelled. While the BIO-FINMA does not expressly address the order in which a write-off of debt instruments other than debt instruments qualifying as additional tier 1 capital or tier 2 capital should occur, it states that debt-to-equity swaps should occur in the following order: first, all subordinated claims not qualifying as regulatory capital; second, all other claims not excluded by law from a debt-to-equity swap (other than deposits); and third, deposits (in excess of the amount privileged by law). However, given the broad discretion granted to FINMA as the resolution authority, any restructuring plan in respect of UBS could provide that the claims under or in connection with the Securities will be partially or fully converted into equity or written-off, while preserving other obligations of UBS that rank pari passu with, or even junior to, UBS's obligations under the Securities. Consequently, holders of Securities may lose all of some of their investment in the Securities. In the case of restructuring proceedings with respect to a systemically important Swiss bank (such as UBS), the creditors whose claims are affected by the restructuring plan will not have a right to vote on, reject, or seek the suspension of the restructuring plan. In addition, if a restructuring plan has been approved by FINMA, the rights of a creditor to seek judicial review of the restructuring plan (e.g., on the grounds that the plan would unduly prejudice the rights of holders of Securities or otherwise be in violation of the Swiss Banking Act) are very limited. In particular, a court may not suspend the implementation of the restructuring plan. Furthermore, even if a creditor successfully challenges the restructuring plan, the court can only require the relevant creditor to be compensated ex post and there is currently no guidance as to on what basis such compensation would be calculated or how it would be funded.

- **Dealer incentives -** UBS and its affiliates act in various capacities with respect to the Securities. We and our affiliates may act as a principal, agent or dealer in connection with the sale of the Securities. Such affiliates, including the sales representatives, will derive compensation from the distribution of the Securities and such compensation may serve as an incentive to sell these Securities instead of other investments. We will pay total underwriting compensation of 1.50% per Security to any of our affiliates acting as agents or dealers in connection with the distribution of the Securities. Given that UBS Securities LLC and its affiliates temporarily maintain a market making premium, it may have the effect of discouraging UBS Securities LLC and its affiliates from recommending sale of your Securities in the secondary market.
- **Uncertain tax treatment -** Significant aspects of the tax treatment of the Securities are uncertain. You should read carefully the sections entitled "What are the Tax Consequences of the Securities" herein and in the prospectus supplement and "Material U.S. Federal Income Tax Consequences" in the accompanying product supplement, and consult your tax advisor about your tax situation.

Information about the Underlying Asset

All disclosures regarding the underlying asset are derived from publicly available information. UBS has not conducted any independent review or due diligence of any publicly available information with respect to the underlying asset. **You should make your own investigation into the underlying asset.**

The underlying asset will be registered under the Securities Act of 1933, the Securities Exchange Act of 1934 (as amended, the "Exchange Act") and/or the Investment Company Act of 1940, each as amended. Companies with

securities registered with the SEC are required to file financial and other information specified by the SEC periodically. Information filed by the underlying asset issuer with the SEC can be reviewed electronically through a website maintained by the SEC. The address of the SEC's website is http://www.sec.gov. Information filed with the SEC by the underlying asset issuer can be located by reference to its SEC file number provided below. In addition, information filed with the SEC can be inspected and copied at the Public Reference Section of the SEC, 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Copies of this material can also be obtained from the Public Reference Section, at prescribed rates.

Caterpillar Inc.

According to publicly available information, Caterpillar Inc. ("Caterpillar") is engaged in the manufacturing of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. Caterpillar operates through six operating segments, of which four are reportable segments: Construction Industries, Resource Industries, Energy & Transportation and Financial Products. Caterpillar's Construction Industries segment is primarily responsible for supporting customers using machinery in infrastructure and building construction applications. The Resource Industries segment is primarily responsible for supporting customers using machinery in mining, quarry, waste and material handling applications. The Energy & Transportation segment supports customers in oil and gas, power generation, marine, rail and industrial applications, including Cat® machines. Caterpillar's Financial Products business segment provides retail and wholesale financing alternatives for Caterpillar products to customers and dealers. Information filed by Caterpillar with the SEC can be located by reference to its SEC file number: 001-00768, or its CIK Code: 0000018230. Caterpillar's website is caterpillar.com. Caterpillar's common stock is listed on the New York Stock Exchange under the ticker symbol "CAT."

Information from outside sources is not incorporated by reference in, and should not be considered part of, this final terms supplement or any accompanying prospectus. UBS has not conducted any independent review or due diligence of any publicly available information with respect to the underlying asset.

Historical Information

The following table sets forth the quarterly high and low closing prices for Caterpillar's common stock, based on daily closing prices on the primary exchange for Caterpillar. We obtained the closing prices below from Bloomberg Professional service ("Bloomberg"), without independent verification. The closing prices may be adjusted by Bloomberg for corporate actions such as stock splits, public offerings, mergers and acquisitions, spin-offs, extraordinary dividends, delistings and bankruptcy. UBS has not undertaken an independent review or due diligence of any publicly available information obtained from Bloomberg. Caterpillar's closing price on November 7, 2018 was $135.10. **Past performance of the underlying asset is not indicative of the future performance of the underlying asset.**

Quarter Begin	Quarter End	Quarterly High	Quarterly Low	Quarterly Close
01/02/2014	03/31/2014	$99.39	$86.17	$99.37
04/01/2014	06/30/2014	$109.38	$99.81	$108.67

07/01/2014	09/30/2014	$111.40	$99.03	$99.03
10/01/2014	12/31/2014	$106.45	$89.34	$91.53
01/02/2015	03/31/2015	$91.88	$78.45	$80.03
04/01/2015	06/30/2015	$89.33	$79.64	$84.82
07/01/2015	09/30/2015	$84.46	$63.79	$65.36
10/01/2015	12/31/2015	$74.75	$64.39	$67.96
01/04/2016	03/31/2016	$76.54	$57.91	$76.54
04/01/2016	06/30/2016	$80.39	$69.43	$75.81
07/01/2016	09/30/2016	$88.77	$74.38	$88.77
10/03/2016	12/30/2016	$97.33	$81.11	$92.74
01/03/2017	03/31/2017	$99.02	$91.39	$92.76
04/03/2017	06/30/2017	$107.60	$92.27	$107.46
07/03/2017	09/29/2017	$125.23	$106.51	$124.71
10/02/2017	12/29/2017	$158.42	$124.72	$157.58
01/02/2018	03/29/2018	$170.89	$144.29	$147.38
04/02/2018	06/29/2018	$158.92	$134.61	$135.67
07/02/2018	09/28/2018	$156.38	$132.02	$152.49

10/01/2018*	11/06/2018*	$158.22	$112.34	$129.33

* As of the date of this final terms supplement available information for the fourth calendar quarter of 2018 includes data for the period from October 1, 2018 through November 6, 2018. Accordingly, the "Quarterly High," "Quarterly Low" and "Quarterly Close" data indicated are for this shortened period only and do not reflect complete data for the fourth calendar quarter of 2018.

The graph below illustrates the performance of Caterpillar's common stock for the period indicated, based on information from Bloomberg. The solid line represents the trigger price and coupon barrier of $94.57, which is equal to 70.00% of the closing price on November 7, 2018. **Past performance of the underlying asset is not indicative of the future performance of the underlying asset.**

What are the Tax Consequences of the Securities?

The U.S. federal income tax consequences of your investment in the Securities are uncertain. There are no statutory provisions, regulations, published rulings or judicial decisions addressing the characterization for U.S. federal income tax purposes of securities with terms that are substantially the same as the Securities. Some of these tax consequences are summarized below, but we urge you to read the more detailed discussion in the prospectus supplement under "What are the Tax Consequences of the Securities?" and the accompanying product supplement under "Material U.S. Federal Income Tax Consequences — Securities Treated as Prepaid Derivatives or Prepaid Forwards" and to discuss the tax consequences of your particular situation with your tax advisor. This discussion is based upon the Internal Revenue Code of 1986, as amended (the "Code"), final, temporary and proposed U.S. Treasury Department (the "Treasury") regulations, rulings and decisions, in each case, as available and in effect as of the date hereof, all of which are subject to change, possibly with retroactive effect. Tax consequences under state, local and non-U.S. laws are not addressed herein. No ruling from the U.S. Internal Revenue Service (the "IRS") has been sought as to the U.S. federal income tax consequences of your investment in the Securities, and the following discussion is not binding on the IRS.

U.S. Tax Treatment. Pursuant to the terms of the Securities, UBS and you agree, in the absence of a statutory or regulatory change or an administrative determination or judicial ruling to the contrary, to characterize the Securities as pre-paid derivative contracts with respect to the underlying asset. If your Securities are so treated, any contingent coupon that is paid by UBS (including on the maturity date or call settlement date) should be included in your income as ordinary income in accordance with your regular method of accounting for U.S. federal income tax purposes.

In addition, excluding amounts attributable to any contingent coupon, you should generally recognize capital gain or loss upon the taxable disposition of your Securities in an amount equal to the difference between the amount you receive at such time (other than amounts or proceeds attributable to a contingent coupon or any amount attributable to any accrued but unpaid contingent coupon) and the amount you paid for your Securities. Such gain or loss should generally be long-term capital gain or loss if you have held your Securities for more than one year (otherwise such gain or loss would be short-term capital gain or loss if held for one year or less). The deductibility of capital losses is

subject to limitations. Although uncertain, it is possible that proceeds received from the taxable disposition of your Securities prior to a coupon payment date that are attributable to an expected contingent coupon could be treated as ordinary income. You should consult your tax advisor regarding this risk.

We will not attempt to ascertain whether the underlying asset issuer would be treated as a "passive foreign investment company" (a "PFIC") within the meaning of Section 1297 of the Code or as a "United States real property holding corporation" (a "USRPHC") within the meaning of Section 897 of the Code. If the underlying asset issuer were so treated, certain adverse U.S. federal income tax consequences might apply, to a U.S. holder in the case of a PFIC and to a non-U.S. holder in the case of a USRPHC, upon the taxable disposition of a Security. You should refer to information filed with the SEC or the equivalent governmental authority by the underlying asset issuer and consult your tax advisor regarding the possible consequences to you in the event that such entity is or becomes a PFIC or USRPHC.

In the opinion of our counsel, Cadwalader, Wickersham & Taft LLP, based on certain factual representations received from us, it would be reasonable to treat your Securities in the manner described above. However, because there is no authority that specifically addresses the tax treatment of the Securities, it is possible that your Securities could alternatively be treated for tax purposes as a single contingent payment debt instrument, or pursuant to some other characterization, such that the timing and character of your income from the Securities could differ materially and adversely from the treatment described above, as described further under "Material U.S. Federal Income Tax Consequences — Alternative Treatments for Securities Treated as Any Type of Prepaid Derivative or Prepaid Forward" in the accompanying product supplement. Because of this uncertainty, we urge you to consult your tax advisor as to the tax consequences of your investment in the Notes.
Notice 2008-2. In 2007, the IRS released a notice that may affect the taxation of holders of the Securities. According to Notice 2008-2, the IRS and the Treasury are actively considering whether the holder of an instrument such as the Securities should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the Securities will ultimately be required to accrue income currently in excess of any receipt of contingent coupons and this could be applied on a retroactive basis. The IRS and the Treasury are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital, whether non-U.S. holders of such instruments should be subject to withholding tax on any deemed income accruals, and whether the special "constructive ownership rules" of Section 1260 of the Code should be applied to such instruments. Both U.S. and non-U.S. holders are urged to consult their tax advisor concerning the significance and potential impact of the above considerations.

Except to the extent otherwise required by law, UBS intends to treat your Securities for U.S. federal income tax purposes in accordance with the treatment described above and under "Material U.S. Federal Income Tax Consequences — Securities Treated as Prepaid Derivatives or Prepaid Forwards with Associated Contingent Coupons" in the accompanying product supplement unless and until such time as the IRS and the Treasury determine that some other treatment is more appropriate.

Medicare Tax on Net Investment Income. U.S. holders that are individuals, estates, and certain trusts are subject to an additional 3.8% tax on all or a portion of their "net investment income", which may include any income or gain realized with respect to the Securities, to the extent of their net investment income that when added to their other modified adjusted gross income, exceeds $200,000 for an unmarried individual, $250,000 for a married taxpayer filing a joint return (or a surviving spouse), or $125,000 for a married individual filing a separate return. The 3.8% Medicare tax is determined in a different manner than the income tax. U.S. holders should consult their tax advisors as to the consequences of the 3.8% Medicare tax to an investment in the Securities.

Specified Foreign Financial Assets. U.S. holders may be subject to reporting obligations with respect to their Securities if they do not hold their Securities in an account maintained by a financial institution and the aggregate value of their Securities and certain other "specified foreign financial assets" (applying certain attribution rules) exceeds

an applicable threshold. Significant penalties can apply if a U.S. holder is required to disclose its Securities and fails to do so.

Non-U.S. Holders. The U.S. federal income tax treatment of the contingent coupons is unclear. Subject to the discussions below with respect to Section 871(m) of the Code and FATCA (as defined below), our counsel is of the opinion that contingent coupons paid to a non-U.S. holder that provides us (and/or the applicable withholding agent) with a fully completed and validly executed applicable IRS Form W-8 should not be subject to U.S. withholding tax and we do not intend to withhold any tax on contingent coupons. However, it is possible that the IRS could assert that such payments are subject to U.S. withholding tax, or that another withholding agent may otherwise determine that withholding is required, in which case such other withholding agent may withhold up to 30% on such payments (subject to reduction or elimination of such withholding tax pursuant to an applicable income tax treaty). We will not pay any additional amounts in respect of such withholding. Subject to Section 871(m) of the Code, discussed below, gain from the taxable disposition of the Securities generally should not be subject to U.S. tax unless (i) such gain is effectively connected with a trade or business conducted by the non-U.S. holder in the U.S., (ii) the non-U.S. holder is a non-resident alien individual and is present in the U.S. for 183 days or more during the taxable year of such taxable disposition and certain other conditions are satisfied or (iii) the non-U.S. holder has certain other present or former connections with the U.S.

Section 871(m). A 30% withholding tax (which may be reduced by an applicable income tax treaty) is imposed under Section 871(m) of the Code on certain "dividend equivalents" paid or deemed paid to a non-U.S. holder with respect to a "specified equity-linked instrument" that references one or more dividend-paying U.S. equity securities. The withholding tax can apply even if the instrument does not provide for payments that reference dividends. Treasury regulations provide that the withholding tax applies to all dividend equivalents paid or deemed paid on specified equity-linked instruments that have a delta of one ("delta one specified equity-linked instruments") issued after 2016 and to all dividend equivalents paid or deemed paid on all other specified equity-linked instruments issued after 2018. However, the IRS has issued guidance that states that the Treasury and the IRS intend to amend the effective dates of the Treasury regulations to provide that withholding on dividend equivalents paid or deemed paid will not apply to specified equity-linked instruments that are not delta one specified equity-linked instruments and are issued before January 1, 2021.

Based on our determination that the Securities are not "delta-one" with respect to the underlying asset, our counsel is of the opinion that the Securities should not be delta one specified equity-linked instruments and thus should not be subject to withholding on dividend equivalents. Our determination is not binding on the IRS, and the IRS may disagree with this determination. Furthermore, the application of Section 871(m) of the Code will depend on our determinations made upon issuance of the Securities. If withholding is required, we will not make payments of any additional amounts.

Nevertheless, after issuance, it is possible that your Securities could be deemed to be reissued for tax purposes upon the occurrence of certain events affecting the underlying asset or your Securities, and following such occurrence your Securities could be treated as delta one specified equity-linked instruments that are subject to withholding on dividend equivalents. It is also possible that withholding tax or other tax under Section 871(m) of the Code could apply to the Securities under these rules if you enter, or have entered, into certain other transactions in respect of the underlying asset or the Securities. If you enter, or have entered, into other transactions in respect of the underlying asset or the Securities, you should consult your tax advisor regarding the application of Section 871(m) of the Code to your Securities in the context of your other transactions.

Because of the uncertainty regarding the application of the 30% withholding tax on dividend equivalents to the Securities, you are urged to consult your tax advisor regarding the potential application of Section 871(m) of the Code and the 30% withholding tax to an investment in the Securities.

Foreign Account Tax Compliance Act. The Foreign Account Tax Compliance Act ("FATCA") was enacted on March 18, 2010, and imposes a 30% U.S. withholding tax on "withholdable payments" (i.e., certain U.S.-source payments, including interest (and original issue discount), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S.-source interest or dividends) and "passthru payments" (i.e., certain payments attributable to withholdable payments) made to certain foreign financial institutions (and certain of their affiliates) unless the payee foreign financial institution agrees (or is required), among other things, to disclose the identity of any U.S. individual with an account of the institution (or the relevant affiliate) and to annually report certain information about such account. FATCA also requires withholding agents making withholdable payments to certain foreign entities that do not disclose the name, address, and taxpayer identification number of any substantial U.S. owners (or do not certify that they do not have any substantial U.S. owners) to withhold tax at a rate of 30%. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

Pursuant to final and temporary Treasury regulations and other IRS guidance, the withholding and reporting requirements under FATCA will generally apply to certain "withholdable payments" made on or after July 1, 2014, certain gross proceeds on a taxable disposition occurring after December 31, 2018, and certain foreign passthru payments made after December 31, 2018 (or, if later, the date that final regulations defining the term "foreign passthru payment" are published). If withholding is required, we (or the applicable paying agent) will not be required to pay additional amounts with respect to the amounts so withheld. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the U.S. governing FATCA may be subject to different rules.

Investors should consult their tax advisors about the application of FATCA, in particular if they may be classified as financial institutions (or if they hold their Securities through a foreign entity) under the FATCA rules.

Proposed Legislation. In 2007, legislation was introduced in Congress that, if it had been enacted, would have required holders of Securities purchased after the bill was enacted to accrue interest income over the term of the Securities despite the fact that there may be no interest payments over the entire term of the Securities.

Furthermore, in 2013, the House Ways and Means Committee released in draft form certain proposed legislation relating to financial instruments. If it had been enacted, the effect of this legislation generally would have been to require instruments such as the Securities to be marked to market on an annual basis with all gains and losses to be treated as ordinary, subject to certain exceptions.

It is not possible to predict whether any similar or identical bills will be enacted in the future, or whether any such bill would affect the tax treatment of your Securities. You are urged to consult your tax advisor regarding the possible changes in law and their possible impact on the tax treatment of your Securities.

Both U.S. and non-U.S. holders are urged to consult their tax advisors concerning the application of U.S. federal income tax laws to their particular situation, as well as any tax consequences of the purchase, beneficial ownership and disposition of the Securities (including possible alternative treatments and the issues presented by Notice 2008-2) arising under the laws of any state, local, non-U.S. or other taxing jurisdiction.

Supplemental Plan of Distribution (Conflicts of Interest); Secondary Markets (if any)

We have agreed to sell to UBS Securities LLC and UBS Securities LLC has agreed to purchase, all of the Securities at the issue price to the public less the underwriting discount indicated on the cover of this final terms supplement, the document filed pursuant to Rule 424(b) containing the final pricing terms of the Securities. UBS Securities LLC has

agreed to resell all of the Securities to UBS Financial Services Inc. at a discount from the issue price to the public equal to the underwriting discount indicated on the cover of this final terms supplement.

Conflicts of Interest - Each of UBS Securities LLC and UBS Financial Services Inc. is an affiliate of UBS and, as such, has a "conflict of interest" in this offering within the meaning of FINRA Rule 5121. In addition, UBS will receive the net proceeds (excluding the underwriting discount) from the initial public offering of the Securities and, thus creates an additional conflict of interest within the meaning of FINRA Rule 5121. Consequently, the offering is being conducted in compliance with the provisions of Rule 5121. Neither UBS Securities LLC nor UBS Financial Services Inc. is permitted to sell Securities in the offering to an account over which it exercises discretionary authority without the prior specific written approval of the account holder.

UBS Securities LLC and its affiliates may offer to buy or sell the Securities in the secondary market (if any) at prices greater than UBS' internal valuation - The value of the Securities at any time will vary based on many factors that cannot be predicted. However, the price (not including UBS Securities LLC's or any affiliate's customary bid-ask spreads) at which UBS Securities LLC or any affiliate would offer to buy or sell the Securities immediately after the trade date in the secondary market is expected to exceed the estimated initial value of the Securities as determined by reference to our internal pricing models. The amount of the excess will decline to zero on a straight line basis over a period ending no later than 1 month after the trade date, provided that UBS Securities LLC may shorten the period based on various factors, including the magnitude of purchases and other negotiated provisions with selling agents. Notwithstanding the foregoing, UBS Securities LLC and its affiliates are not required to make a market for the Securities and may stop making a market at any time. For more information about secondary market offers and the estimated initial value of the Securities, see "Key Risks - Fair value considerations" and "Key Risks - Limited or no secondary market and secondary market price considerations" in this final terms supplement.

Prohibition of Sales to EEA Retail Investors — The Securities are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the European Economic Area ("EEA"). For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU, as amended ("MiFID II"); (ii) a customer within the meaning of Directive 2002/92/EC, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a qualified investor as defined in Directive 2003/71/EC, as amended. Consequently no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the Securities or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Securities or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Validity of the Securities

In the opinion of Cadwalader, Wickersham & Taft LLP, as special counsel to the issuer, when the Securities offered by this final terms supplement have been executed and issued by the issuer and authenticated by the trustee pursuant to the indenture and delivered, paid for and sold as contemplated herein, the Securities will be valid and binding obligations of the issuer, enforceable against the issuer in accordance with their terms, subject to applicable bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium, receivership or other laws relating to or affecting creditors' rights generally, and to general principles of equity (regardless of whether enforcement is sought in a proceeding at law or in equity). This opinion is given as of the date hereof and is limited to the laws of the State of New York. Insofar as this opinion involves matters governed by Swiss law, Cadwalader, Wickersham & Taft LLP has assumed, without independent inquiry or investigation, the validity of the matters opined on by Homburger AG, Swiss legal counsel for the issuer, in its opinion dated October 29, 2018 filed on that date with the Securities and Exchange Commission as Exhibit 5.3 to the issuer's registration statement on Form F-3 (the "Registration Statement"). In addition, this opinion is subject to customary assumptions about the trustee's authorization, execution and delivery of the

indenture and, with respect to the Securities, authentication of the Securities and the genuineness of signatures and certain factual matters, all as stated in the opinion of Cadwalader, Wickersham & Taft LLP dated October 29, 2018 filed on that date with the Securities and Exchange Commission as Exhibit 5.4 to the Registration Statement.