

# Turbo Warrants

Shift up a gear



Turbo Warrants allow investors to bet on the price of an underlying asset rising or falling. They offer considerable leverage for a small capital commitment. You only pay a fraction of the price of the underlying but participate fully in its performance in absolute terms.

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# Turbo Warrants: power for the portfolio

Turbo Warrants are products that offer considerable leverage for a small capital commitment. They combine the benefits of traditional warrants and futures without any of their specific drawbacks. Unlike with normal warrants, volatility only plays a minor role. This means that the price of a Turbo Warrant is easy to understand. Also, the maximum loss is limited to the amount invested. Unlike with futures, there is no obligation to provide further capital.

## What Turbo Warrants offer you

**High leverage.** With Turbo Warrants you invest in an underlying asset, but only pay a fraction of the price. The reduced capital commitment creates the leverage.

**You choose the direction.** Turbo Warrants allow you to profit disproportionately from rising or falling prices, depending on the variant. You profit with Turbo Call Warrants if the underlying goes up. You benefit from Turbo Put Warrants if the underlying falls.

**With or without a time limit.** There are Turbo Warrants with limited and unlimited terms. The latter are called Open End Turbo Warrants. You can therefore invest for both the short term and the longer term, as you wish.

**High transparency.** The price of a Turbo Warrant is based directly on the performance of the underlying. Complex price-influencing factors such as volatility play almost no part.

**Ideal for hedging.** Because of their leverage, Turbo Warrants can not only be used for speculative purposes, they are also a low-cost instrument for portfolio hedging.

**Flexible trading.** Under normal market conditions, Turbo Warrants can be bought and sold on every stock exchange trading day. This allows you to react quickly and flexibly to changes in the market.

**Large selection.** Turbo Warrants can be used in a wide range of situations. The underlying assets may be shares, equity indices, commodities or currency pairs.

## What you need to watch out for

**Leverage works in both directions.** It allows for above-average price gains as well as correspondingly leveraged losses if the underlying does not perform as hoped.

**Total loss if there is a knock-out event.** Turbo Warrants have a knock-out barrier. If the underlying asset touches this level, Turbo Warrants immediately expire worthless. In such cases, the investor loses all of the capital invested.

# Features and key terms

<b>Underlying</b>	The underlying is the asset on which the Turbo Warrants are based. Their performance determines the repayment of the products. The underlying may be shares, equity indices, commodities or currency pairs.
<b>Strike</b>	With Turbo Warrants, the strike is equal to the percentage of the underlying financed by the issuer. The strike equals thus the financing level. The strike is also identical to the knock-out barrier.
<b>Conversion ratio</b>	The conversion ratio indicates how many warrants relate to one unit of the underlying. For example, with a conversion ratio of 10:1, ten Turbo Warrants are needed to buy one underlying. This division makes an individual turbo cheaper and thus more flexible to trade.
<b>Knock-out barrier</b>	If the underlying touches the knock-out barrier, Turbo Warrants immediately expire worthless. For Turbo Warrants, the knock-out is the same as the strike.
<b>Expiration</b>	There are Turbo Warrants with limited and unlimited terms (Open End Turbo Warrants).
<b>Premium</b>	Turbo Warrants generally trade at a premium to their intrinsic value. The premium represents the financing costs and the risk premium the issuer requires to cover the current risk on the underlying and the market.
<b>Financing costs</b>	To finance the strike, the issuer charges the buyer of Turbo Warrants financing costs equivalent to the money market interest rate plus a financing margin. For Turbo Warrants with a limited term, these are added to the price of the product as a premium. With Open End Turbo Warrants, they are charged by a daily strike adjustment.

# How Turbo Call Warrants work

## In lockstep with the underlying

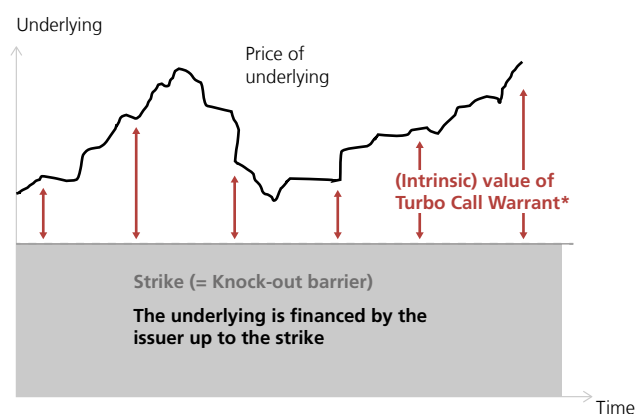
Turbo Call Warrants let investors bet on the price of the underlying going up. They only pay a fraction of the price of the underlying, but participate fully in its performance in absolute terms. Turbos have a delta of around 1, in other words they move almost 1:1 with the price of the underlying. For example, if the underlying rises by one franc, a Turbo Call Warrant (with a 1:1 conversion ratio) will also rise by around one franc. If the underlying goes down by one franc, the Turbo Call Warrant also goes down by around one franc. This lockstep feature makes Turbo Warrants fully transparent.

$$\text{(Intrinsic) value of Turbo Call Warrant} = \frac{(\text{Current price of underlying} - \text{Strike})}{\text{Conversion ratio}}$$

**Note:** For Turbo Call Warrants where the underlying trades in a different currency, the exchange rate also has to be factored in when calculating the value. Here is an example: if the underlying is quoted in EUR, the CHF value of the Turbo Call Warrant would be as follows:

$$\text{Value of Turbo Call Warrant in CHF} = \frac{(\text{Current price of underlying in EUR} - \text{Strike in EUR})}{\text{Conversion ratio}} \times \text{EUR / CHF}$$

Fig. 1

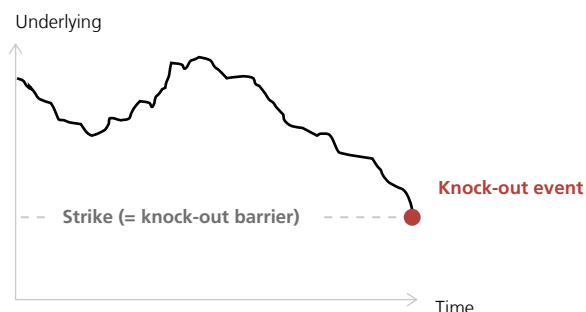


\*Excluding premium, conversion ratio 1:1

## Knock-out barrier: the closer, the riskier

The low capital commitment gives Turbo Warrants high leverage. The risk is that if the underlying does not move in the right direction, this will result in correspondingly large losses. In fact, they can expire worthless even during their term. This is because Turbos have a knock-out barrier identical to the strike. If the underlying touches this level, the term ends and the investor suffers a total loss.

Fig. 2



## Leverage

One of the main features of Turbos is the high leverage. Leverage shows the factor by which a Turbo Warrant moves more than the underlying. With a leverage of 5, a change of 1% in the price of the underlying would result in a change of around 5% in the Turbo Warrant. Leverage works in both directions, up and down.

$$\text{Leverage} = \frac{(\text{Price of underlying} / \text{Conversion ratio})}{\text{Price of Turbo Warrant}}$$

**Note:** For Turbo Call Warrants where the underlying trades in a different currency, the exchange rate also has to be factored in when calculating the leverage. Here is an example: if the underlying is quoted in EUR, the leverage of the Turbo Call Warrant (CHF) would be as follows:

$$\text{Leverage} = \frac{(\text{Price of underlying in EUR} / \text{Conversion ratio} * \text{EUR} / \text{CHF})}{\text{Price of Turbo Call Warrant in CHF}}$$

The rule of thumb is the closer the strike (and hence the knock-out barrier) is to the current price of the underlying, the lower the capital commitment and the higher the leverage – and also the greater the risk of a knock-out. Conversely, Turbo Warrants where the strike (and hence the knock-out barrier) is further away from the current price of the underlying have lower leverage and a lower risk of a knock-out.

**Tab. 1 Comparison of underlying and Turbo Call Warrant**

		<b>Bull share after 3 months</b>	<b>Profit / Loss</b>	<b>Turbo Call Warrant</b>	<b>Profit / Loss</b>
Underlying	Bull share (imaginary)	110 CHF	+10%	2 CHF	+100%
Current price of underlying	100 CHF	108 CHF	+8%	1.80 CHF	+80%
Expiry	in 6 months	106 CHF	+6%	1.60 CHF	+60%
Conversion ratio	10:1	104 CHF	+4%	1.40 CHF	+40%
Strike	90 CHF	102 CHF	+2%	1.20 CHF	+20%
Knock-out barrier	90 CHF	100 CHF	+/- 0%	1 CHF	+/- 0%
Price of Turbo Call Warrant*	1 CHF	98 CHF	-2%	0.80 CHF	-20%
Leverage**	10	96 CHF	-4%	0.60 CHF	-40%
		94 CHF	-6%	0.40 CHF	-60%
		92 CHF	-8%	0.20 CHF	-80%
		90 CHF	-10%	Knock-out	-100%

\*Excluding any premium

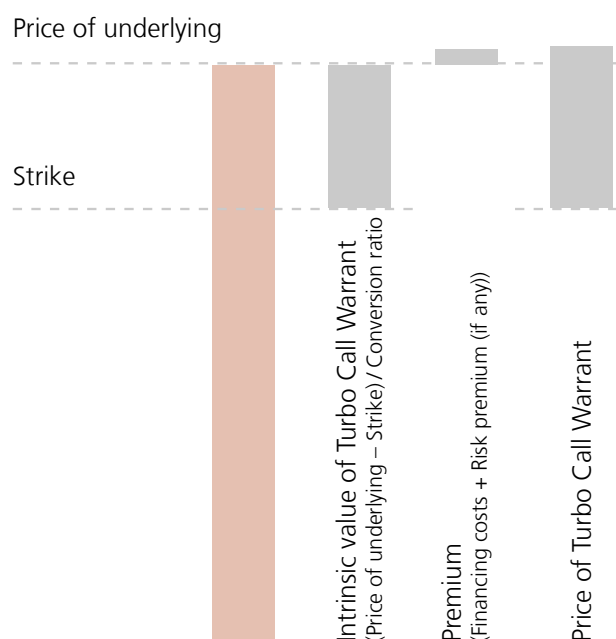
(Price = (Price of underlying - Strike)/Conversion ratio)

\*\*Leverage = (Price of underlying/Conversion ratio)/Price of Turbo Call Warrant

### Premium: The “price” of the lower capital commitment

One of the central features of Turbo Warrants is that they function transparently: with a Turbo Call Warrant, investors looking for disproportionate (leveraged) participation in the performance of an underlying do not need to pay out the full amount to buy the underlying. They only pay the difference between the current price of the underlying and the strike. The strike is financed by the issuer. There is a financing cost involved, which is added to the price of the Turbo Warrant in the form of a small premium.

**Fig. 3**





- Financing costs** The value of a Turbo Call Warrant is the difference between the price of the underlying and the strike, divided by the conversion ratio. On top of that comes a premium, mainly consisting of the financing costs incurred by the issuer for financing the strike during the term of the Turbo Call Warrant. In practice, this means that the actual price of a Turbo Call Warrant is slightly above its intrinsic value. The interest rate for the financing costs is the current money market rate (e.g. SARON) plus a financing margin for the issuer.
- Risk premium** In addition to the financing costs, if the underlying is trading very close to the strike and is very volatile, the premium can also contain a risk premium. In such cases, the issuer is exposed to the risk that the underlying hedge transaction for a knock-out event cannot be closed out in good time if a knock-out event occurs, or only at a worse price. The issuer then charges for this risk in the form of an additional premium. In such situations, the (implied) volatility of the underlying can have some impact on the price under certain circumstances, even for Turbo Warrants.
- Term** Since the premium consists mainly of financing costs, it reduces steadily until the term of a Turbo Call Warrant expires. In other words, if you sell the product in good time, you get back the remaining premium. This means that you only pay the financing costs for the investment period actually used.
- Dividends** If the underlying is an individual share or a performance index, the holder of a Turbo Call Warrant is entitled to any dividend payments. These are taken into account by being deducted from the financing costs. So when a share price goes ex-dividend, this has no impact on the price of a Turbo Call Warrant. As the exact dividend payments due during the term of a Turbo Call Warrant are not yet known when the product is issued, estimated dividends are used. If expected dividends change, this affects the price. If the expected dividend falls, the price of a Turbo Call Warrant will drop; if the expected dividend rises, the price increases too.

### Example for a Turbo Call Warrant

Here is an example showing how a Turbo Call Warrant works. For reasons of simplicity, the premium has been ignored. Assume you expect the price of the Bull shares (imaginary) to rise and would like to participate disproportionately in this by using a Turbo Call Warrant. At the time of purchase, the price of the Bull shares is CHF 100. You buy a Turbo Call Warrant with the following features:

**Tab. 2**

Underlying	Bull share
Strike (=knock-out barrier)	90 CHF
Expiry	In 6 months
Conversion ratio	10:1
Price of underlying	100 CHF
Price of Turbo Call Warrant*	1 CHF
Leverage	10

\* The price of the Turbo Call Warrant is the difference between the price of the underlying and the strike, divided by the conversion ratio (ignoring the premium).

**Tab. 3**

Potential scenarios	Scenario 1 Underlying moves up	Scenario 2 Underlying unchanged	Scenario 3 Underlying moves down (no knock- out event)	Scenario 4 Knock-out event (underlying moves down and touches the knock-out barrier)
Price of Bull share	110 CHF	100 CHF	95 CHF	90 CHF
Price of Turbo Call Warrant*	2 CHF (110 CHF – 90 CHF)/10	1 CHF (100 CHF – 90 CHF)/10	0.50 CHF (95 CHF – 90 CHF)/10	0 CHF (Turbo Call Warrant expires worthless)
+/- Turbo Call Warrant	+100%	+/- 0%	-50%	-100%
+/- Bull share	+10%	+/- 0%	-5%	-10%

\*Excluding any premium

**Scenario 1:**  
**Bull shares move up** If Bull shares move up from the current price of CHF 100 to CHF 110, this is a rise of 10%. Because of the leverage, the Turbo Call Warrant would have gained 100%. This shows that if the underlying moves in the right direction, large gains can be made with Turbo Warrants.

**Scenario 2:**  
**Bull shares unchanged** As we have ignored the premium/financing costs, under this scenario the value of the Turbo Call Warrant also remains unchanged. Including financing costs, the price of the Turbo Call Warrant would fall slightly if the price of the underlying is unchanged. This is because the financing costs are unwound steadily up to the end of the term of the Turbo Warrant.

**Scenario 3:**  
**Bull shares move down** If the price of the underlying falls, the impact of the leverage is felt entirely in the opposite direction. If Bull shares fall 5% from CHF 100 to CHF 95, the value of the Turbo Call Warrant will fall by 50%.

**Scenario 4:**  
**Knock-out event** In the worst case scenario, Bull shares touch the knock-out barrier at CHF 90. In this case, the Turbo Call Warrant expires worthless immediately and the investor suffers a total loss.

# How Turbo Put Warrants work

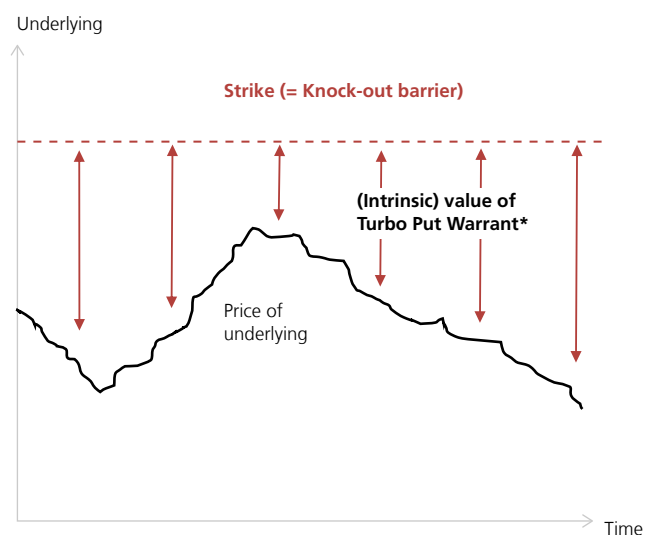
Investors who expect the price of an underlying to fall can profit disproportionately from such movements with Turbo Put Warrants. With the Put variant, the strike is always above the current price of the underlying. The intrinsic value is therefore the difference between the strike and the current price of the underlying divided by the conversion ratio.

$$\text{(Intrinsic) value of Turbo Put Warrant} = \frac{\text{(Strike - Current price of underlying)}}{\text{Conversion ratio}}$$

**Note:** For Turbo Put Warrants where the underlying trades in a different currency, the exchange rate has to be factored in when calculating the value. Here is an example: if the underlying is quoted in EUR, the CHF value of the Turbo Put Warrant would be as follows:

$$\text{Value of Turbo Put Warrant in CHF} = \frac{\text{(Strike in EUR - Current price of underlying in EUR)}}{\text{Conversion ratio}} \times \text{EUR / CHF}$$

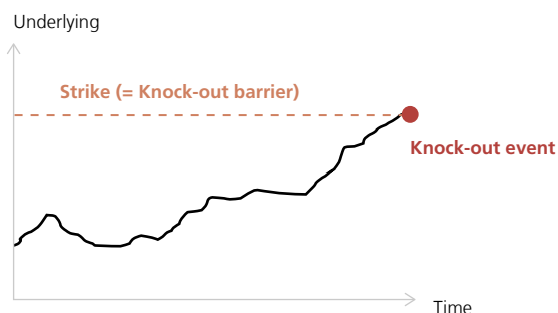
**Fig. 4**



\*Excluding any premium or discount, conversion ratio: 1:1

Turbo Put Warrants also track the performance of the underlying almost 1:1 – but in the opposite direction. For example, if the underlying falls by one franc, a Turbo Put Warrant (with a 1:1 conversion ratio) will rise by around one franc. If the underlying rises by one franc, the Turbo Put Warrant will fall by around one franc.

**Fig. 5**



As with Turbo Call Warrants, the knock-out barrier for Turbo Put Warrants is the same as the strike. If this is touched or exceeded during the term, the product expires worthless.

Unlike with Turbo Call Warrants though, for Turbo Put Warrants the underlying is sold forward. The money raised from the sale is invested to earn interest, so theoretically Turbo Put Warrants can include a discount. In this case, the price of a Turbo Put Warrant would be slightly below its intrinsic value. In practice, however, Turbo Put Warrants tend to have a (small) premium. Firstly, because the issuer's financing margin and/or a potential risk premium exceed the interest income. Secondly, for Turbo Put Warrants on shares or indices, the dividends expected over the term are added to the financing costs.

## Example for a Turbo Put Warrant

Here is an example showing how a Turbo Put Warrant works. For reasons of simplicity, the premium/discount has been ignored. Assume you expect the price of Bear shares (imaginary) to fall and would like to participate disproportionately in this by using a Turbo Put Warrant. At the time of purchase the price of Bear shares is CHF 100. You buy a Turbo Put Warrant with the following features:

**Tab. 4**

Underlying	Bear share
Strike (=Knock-out barrier)	110 CHF
Expiry	In 6 months
Conversion ratio	10:1
Price of underlying	100 CHF
Price of Turbo Put Warrant*	1 CHF
Leverage*	10

\* The price of the Turbo Put Warrant is the difference between the strike and the price of the underlying, divided by the conversion ratio (ignoring the premium/discount).

**Tab. 5**

Potential scenarios	Scenario 1 Underlying falls	Scenario 2 Underlying unchanged	Scenario 3 Underlying moves up (no knock-out event)	Scenario 4 Knock-out event (underlying moves up and touches the knock-out barrier)
Price of Bear share	90 CHF	100 CHF	105 CHF	110 CHF
Price of Turbo Put Warrant*	2 CHF (110 CHF – 90 CHF)/10	1 CHF (110 CHF – 100 CHF)/10	0.50 CHF (110 CHF – 105 CHF)/10	0 CHF (Turbo Put Warrant expires worthless)
+/- Turbo Put Warrant	+100%	+/- 0%	-50%	-100%
+/- Bear share	-10%	+/- 0%	+5%	+10%

\* Excluding any premium or discount

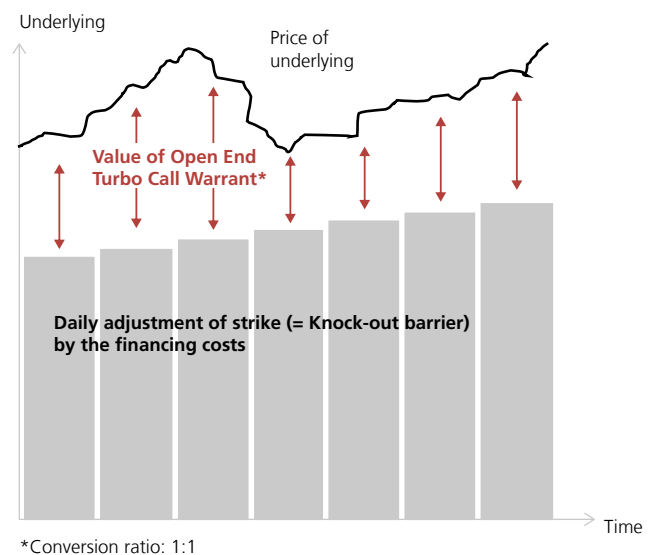
# Open End Turbo Warrants: Leverage with no time limit

Open End Turbo Warrants are a further development of traditional Turbo Warrants. The main difference is that they do not have a limited term. So investors can enjoy leveraged participation in the performance of an underlying with no time limit. Otherwise, the basic structure of the two variants is identical. In other words, you only need to put up a fraction of the price to invest in an underlying. The difference is financed by the issuer. The knock-out barrier is another shared feature. This is identical to the strike for both Turbo Warrants and Open End Turbo Warrants. If the underlying touches the knock-out barrier, the product expires worthless.

## Financing costs for Open End Turbo Call Warrants

The unlimited term gives rise to a few special features – for instance, as regards the financing costs. As Open End Turbo Warrants do not have a fixed expiration date set in advance, it is not possible to add the financing costs on to the price of the product at issue. Instead, the issuer factors in the financing costs by raising the strike of an Open End Turbo Warrant every day by the share of the financing costs.

Fig. 6



As the value of an Open End Turbo Call Warrant is the difference between the current price of the underlying and the strike, this means (all other things being equal) that the price of the product falls every day by the share of the financing costs.

### Financing costs for Open End Turbo Put Warrants

With Open End Turbo Put Warrants, investors can in theory generate financing income. This is the case where the interest income earned by the issuer on the hedging transaction on which the product is based is greater than the issuer's financing margin.

In practice, though, the issuer's financing margin is normally higher. This results in the strike being reduced daily. In this case, the adjustment for Open End Turbo Put Warrants is charged to the holder, this means (all other things being equal) that the price of the product falls every day.

### Factoring in dividend payments

With Open End Turbo Warrants, the dividends expected during the term cannot be taken into account in advance because their open-ended nature makes the frequency and amount of dividends uncertain. Hence, for both Open End Turbo Call Warrants and Open End Turbo Put Warrants, the strike is reduced by a certain percentage of the gross dividend on the ex-dividend date. This percentage is called the dividend factor, and reflects potential taxation on the dividends. The distribution is therefore neutral for Open End Turbo Warrants.





# Hedging your portfolio with Turbo Put Warrants

Turbo Put Warrants and Open End Turbo Put Warrants are an ideal instrument for hedging a portfolio, or certain parts of a portfolio, such as index investments, efficiently and cheaply. As an investor, you search for a suitable Turbo Put Warrant, divide the size of the position to be hedged (e.g. CHF 50,000 in SMI™ index investments) by the leverage factor and invest that amount in the corresponding product.

The capital commitment required for the hedge depends on how long it is meant to last and the selected leverage factor of the selected Turbo Put Warrant: Assuming a leverage of 10, hedging the entire SMI™ position of CHF 50,000 would need suitable Turbo Put Warrants worth around CHF 5,000. If only half of the SMI™ investment is to be hedged, i.e. CHF 25,000, CHF 2,500 of Turbo Put Warrants with a leverage factor of 10 would be required.

This simple way of hedging is cost-effective even over very short periods, as the transaction costs are so much lower compared to selling the position. Another advantage of hedging with Turbo Put Warrants is that the hedge is effective immediately after purchase and not only at maturity, which can sometimes be the case if hedging with traditional Put Warrants.

However, it is important to remember that the amount paid for the hedging will be lost if the underlying moves up and touches the knock-out barrier. This risk can be reduced by using a lower leverage factor or a higher strike, but this means that correspondingly more capital is needed for the hedge.

# Summary

## Your investor profile

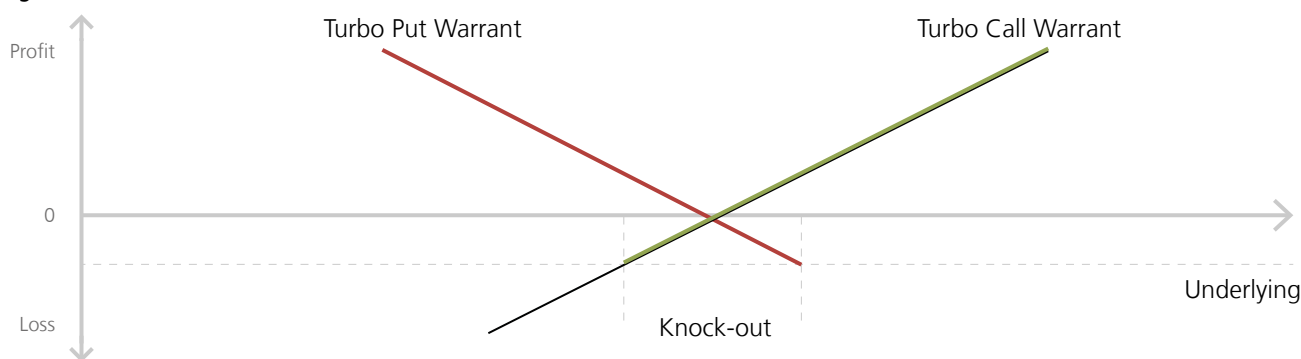
- Opportunistic
- Willing and able to take risks
- Stock market experience
- Experience with leverage products

## The key benefits at a glance

- Leverage due to reduced capital commitment
- Ability to choose between a limited or unlimited term
- High price transparency (volatility only has a minor impact)
- Very suitable for hedging
- Can be bought and sold on every stock exchange trading day

## Payout profile

Fig. 7



## Market expectation

- Turbo Call Warrant: Open End Turbo Call Warrant | Underlying moving up
- Turbo Put Warrant: Open End Turbo Put Warrant | Underlying moving down

## Time horizon

- Short to medium term

## Risks you have to monitor

- Large losses if the underlying moves the opposite way
- Total loss if there is a knock-out event
- Regular monitoring needed
- Issuer risk

## Our offering

UBS is one of Europe's leading providers of Turbo Warrants and structured products. The range covers thousands of products on different asset classes and underlyings.

You can find our offering online:  
**[keyinvest-ch-en.ubs.com](https://keyinvest-ch-en.ubs.com)**

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