



ACEPI - RESEARCH

Part 2: Express Certificates

Milan, 2017

Summary

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Database description

The database used in the research is composed by 704 certificates divided into 33 typologies, the table shows only the typologies with a number of certificates exceeding 5

TPOLOGY	NUMBER	PERCENTAGE
AUTOCALLABLE TWIN WIN	112	15,7%
EXPRESS	105	14,7%
ATHENA RELAX	84	11,8%
EXPRESS COUPON	40	5,6%
STEP CERTIFICATES	38	5,3%
AUTOCALLABLE STEP PLUS	29	4,1%
ATHENA CERTIFICATE	27	3,8%
AUTOCALLABLE	27	3,8%
ATHENA PLUS	20	2,8%
ATHENA FAST PLUS	18	2,5%
ATHENA DOPPIA CHANCE	18	2,5%
PHOENIX	17	2,4%
FIXED PREMIUM ATHENA	16	2,2%
FAST BONUS	15	2,1%
TWIN&GO	14	2,0%

TPOLOGY	NUMBER	PERCENTAGE
ALPHA EXPRESS	14	2,0%
EXPRESS BONUS	12	1,7%
EXPRESS PLUS	10	1,4%
EXPRESS PREMIUM	10	1,4%
TRIS EXPRESS	9	1,3%
ATHENA AIRBAG	9	1,3%
EXPRESS COUPON PLUS	9	1,3%
ATHENA DOUBLE RELAX	8	1,1%
ATHENA UP	7	1,0%
WIN & GO	6	0,8%
ATHENA JET CAP	6	0,8%
STEP UP CERTIFICATES	5	0,8%
ATHENA DUO	5	0,7%
ATHENA JET CAP RELAX	5	0,7%
ATHENA WORST	5	0,7%

Certificate selection and methodology

- The analysis will focus primarily on the entire database, then the focus will move to the two most important certificates: Express and Autocallable Twin Win
- The analysis will estimate the historical performance of the certificates in comparison with the underlying's one in the same reference period. This allows the comparison of the performance of investment certificates with the hypothetical direct investment in the underlying
- The analysis will be carried out by dividing the sample into three sub-periods corresponding to different market phases: certificates issued from 2005 to 2007, those from 2008 to 2009 and then from 2010 to 2015
- The calculation of the performance will be made firstly without considering the effect of dividends and then considering their impact

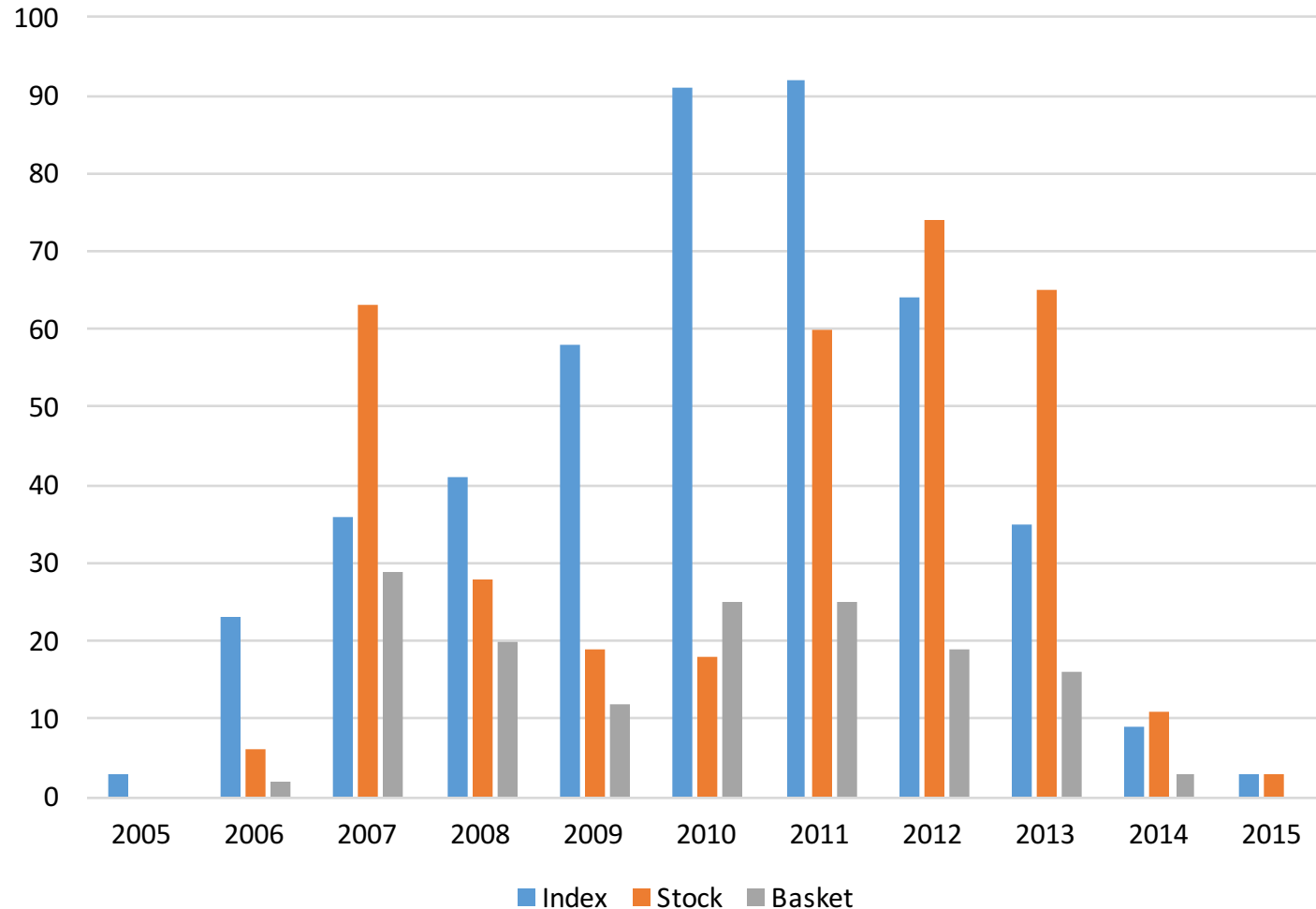
Features of the certificates: year of issue and life-cycle

The largest number of certificates (127 or 18%) of the database is represented by certificates issued in 2011. Life-cycle is the time frame from the issuing date to the set maturity date

YEAR OF ISSUE	LIFE CYCLE (IN YEARS)					TOTAL	PERCENTAGE
	1 -2	2-3	3-4	4-5	5-6		
2005					2	2	0,3%
2006		6	2	9	6	23	3,2%
2007	3	24	49	10	22	108	15,1%
2008	4	15	31	6	9	65	9,1%
2009	10	30	11	9	4	64	9,2%
2010	6	31	27	10	8	82	12,6%
2011	20	40	61	4	2	127	17,8%
2012	38	55	27	6		126	17,6%
2013	13	49	22			84	11,8%
2014	11	7				18	2,5%
2015	5					5	0,7%
TOTAL	110	257	230	54	53	704	
PERCENTAGE	15,4%	36,0%	32,2%	8,7%	7,7%		

Features of the certificates: underlying

The analyzed certificates have 122 different underlying (347 stocks, 151 basket, 26 index, 7 FX)



From 2005 to 2015 the number of indices has declined, while the baskets have been stable

The most traded underlyings have been:

- Eurostoxx 50 (26,8%)
- FTSE MIB (10,4%)
- Intesa San Paolo (4,6%)
- Enel (4,1%)
- Goldman Sachs (3,8%)

Features of the certificates: early redemptions and maturities

The certificates considered in this part of the analysis have the feature of autocallability, this is the option that a certificate is redeemed early upon the occurrence of certain events. The table above shows a breakdown of the certificates related to the fact that they have been redeemed early or arrived at maturity

The percentage has been calculated on the total number of observations

YEAR OF ISSUE	EARLY REDEMPTION	PERCENTAGE	MATURED	PERCENTAGE	TOTAL
2005	1	0,1%	1	0,1%	2
2006	14	2,0%	9	1,3%	23
2007	3	0,4%	105	14,7%	108
2008	14	2,0%	51	7,1%	65
2009	28	3,9%	36	5,3%	66
2010	48	6,7%	34	5,9%	90
2011	62	8,7%	65	9,1%	127
2012	103	14,4%	23	3,2%	126
2013	80	11,2%	4	0,6%	84
2014	15	2,1%	3	0,4%	18
2015	5	0,7%	0	0%	5
TOTAL	373	52%	331	48%	714

Calculation of historical performances

- For each certificate, the performance has been calculated by comparing the performance of the redemption price with the issue price
- It has been then calculated the average yield of certificates belonging to the two categories: Express and Autocallable Twin Win
- Alpha is the variable that expresses the difference between the average yield of certificates and the average yield of the underlying

Final database

The period was divided into three sections:

- 2005-2007: bull market, 133 certificates have been considered
- 2008-2009: bear market, 129 certificates have been considered
- 2010-2015: bullish US market and lateral EU market, 442 certificates have been considered

It has not been taken into consideration the maturity date but only the issue date

PERIOD	EXPRESS	AUTOCALLABLE TWIN WIN	TOTAL
2005-2007	57	76	133
2008-2009	110	19	129
2010-2015	419	23	442
TOTAL	586	118	704

Yields and risk

2005-2007

it has been compared the average performance of the underlying and certificates in the period 2005-2007 for a total of 133 observations

The average Alpha is always positive in the Express and Autocallable Twin Win, in fact, the average performance of the certificates is always greater than the underlying's one

TPOLOGY	PERCENTAGE	UNDERLYING AVERAGE YIELD	CERTIFICATES AVERAGE YIELD	AVERAGE ALPHA
EXPRESS	42,9%	-30,07%	-23,84%	6,23%
AUTOCALLABLE TWIN WIN	57,1%	-45,55%	-42,28%	3,27%

TPOLOGY	MAX UNDERLYING YIELD	MAX CERTIFICATES YIELD	MIN UNDERLYING YIELD	MIN CERTIFICATES YIELD
EXPRESS	57,31%	40,00%	-75,98%	-75,98%
AUTOCALLABLE TWIN WIN	22,92%	26,36%	-94,65%	-94,65%

Yields and risk 2008-2009

In the second period 129 observations have been considered. Certificates' alpha is always positive

During these years the market has been basically bearish

TPOLOGY	PERCENTAGE	UNDERLYING AVERAGE YIELD	CERTIFICATES AVERAGE YIELD	AVERAGE ALPHA
EXPRESS	85,5%	-12,00%	0,01%	12,00%
AUTOCALLABLE TWIN WIN	14,5%	-28,66%	-26,99%	1,67%

TPOLOGY	MAX UNDERLYING YIELD	MAX CERTIFICATES YIELD	MIN UNDERLYING YIELD	MIN CERTIFICATES YIELD
EXPRESS	61,21%	36,46%	-99,46%	-80,68%
AUTOCALLABLE TWIN WIN	7,54%	36,00%	-50,27%	-46,98%

Yields and risk 2010-2015

In the last period 442 observations have been considered with a bullish market condition in US and a lateral market in Europe

The average yield of certificates has always been positive, despite the underlying had a better performance, influencing the alpha

TPOLOGY	PERCENTAGE	UNDERLYING AVERAGE YIELD	CERTIFICATES AVERAGE YIELD	AVERAGE ALPHA
EXPRESS	94,9%	11,09%	6,42%	-4,67%
AUTOCALLABLE TWIN WIN	5,1%	10,14%	8,10%	-2,04%

TPOLOGY	MAX UNDERLYING YIELD	MAX CERTIFICATES YIELD	MIN UNDERLYING YIELD	MIN CERTIFICATES YIELD
EXPRESS	138,03%	100,00%	-77,56%	-72,03%
AUTOCALLABLE TWIN WIN	60,30%	33,37%	-15,45%	-0,22%

Underlying performance

The average performance of the underlying has been compared to the average yield of certificates in 4 different performance scenarios of the underlying (X). The value in the brackets represents the percentage of the total certificates which had an underlying's performance in that range

X < -20% (29%)	UNDERLYING PER.	CERTIFICATES PER.	ALPHA	ALPHA ADJ.
EXPRESS (60%)	-41,31%	-24,21%	17,10%	13,57%
A. TWIN WIN (40%)	-48,58%	-46,18%	2,40%	-1,02%

• Positive alpha

-20% < X < 0% (12%)	UNDERLYING PER.	CERTIFICATES PER.	ALPHA	ALPHA ADJ.
EXPRESS (88%)	-9,24%	4,17%	13,41%	9,01%
A. TWIN WIN (12%)	-7,42%	5,32%	12,74%	8,99%

• In lateral market conditions, alpha is positive

0% < X < 10% (24%)	UNDERLYING PER.	CERTIFICATES PER.	ALPHA	ALPHA ADJ.
EXPRESS (90%)	4,70%	11,82%	7,12%	3,34%
A. TWIN WIN (10%)	4,94%	8,04%	3,10%	-0,25%

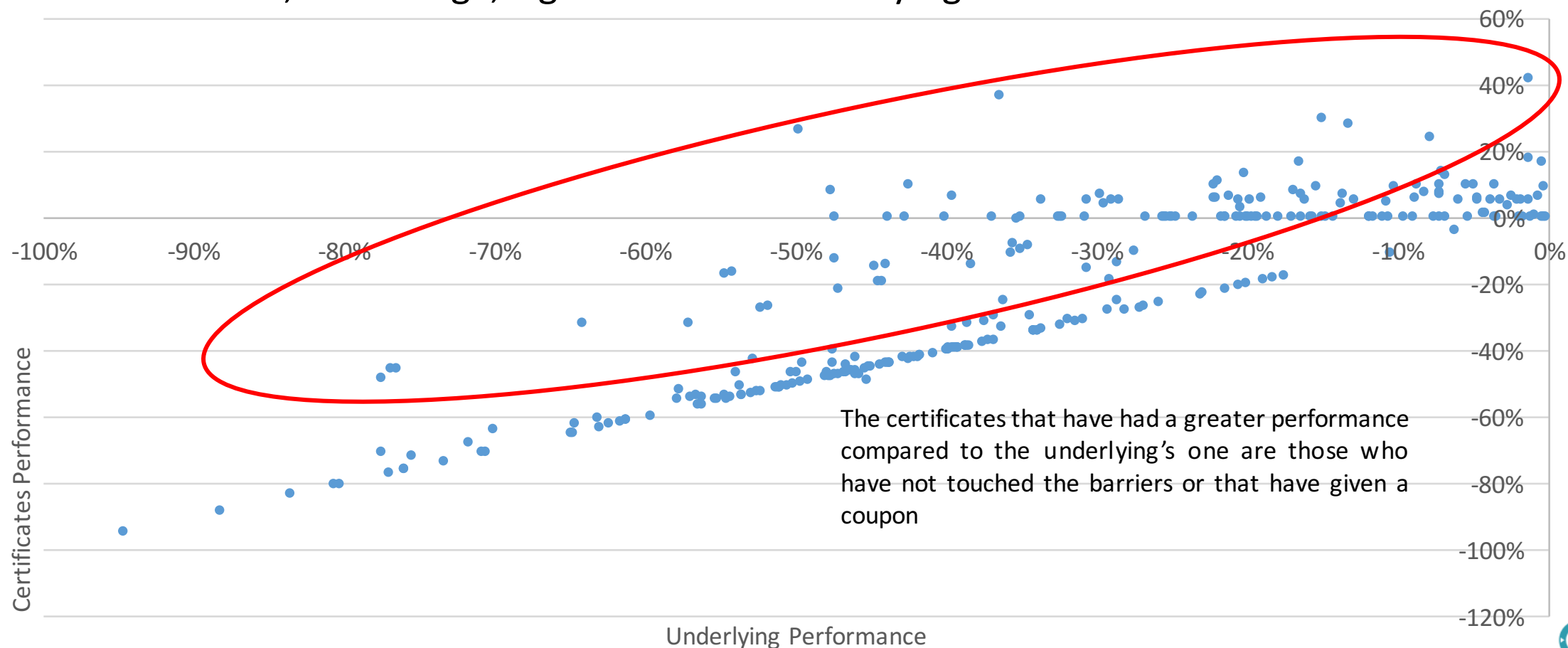
• In a bullish market, alpha gets negative

10% < X < 20% (15%)	UNDERLYING PER.	CERTIFICATES PER.	ALPHA	ALPHA ADJ.
EXPRESS (98%)	14,63%	10,03%	-4,60%	-8,24%
A. TWIN WIN (2%)	14,37%	9,07%	-5,31%	-10,26%

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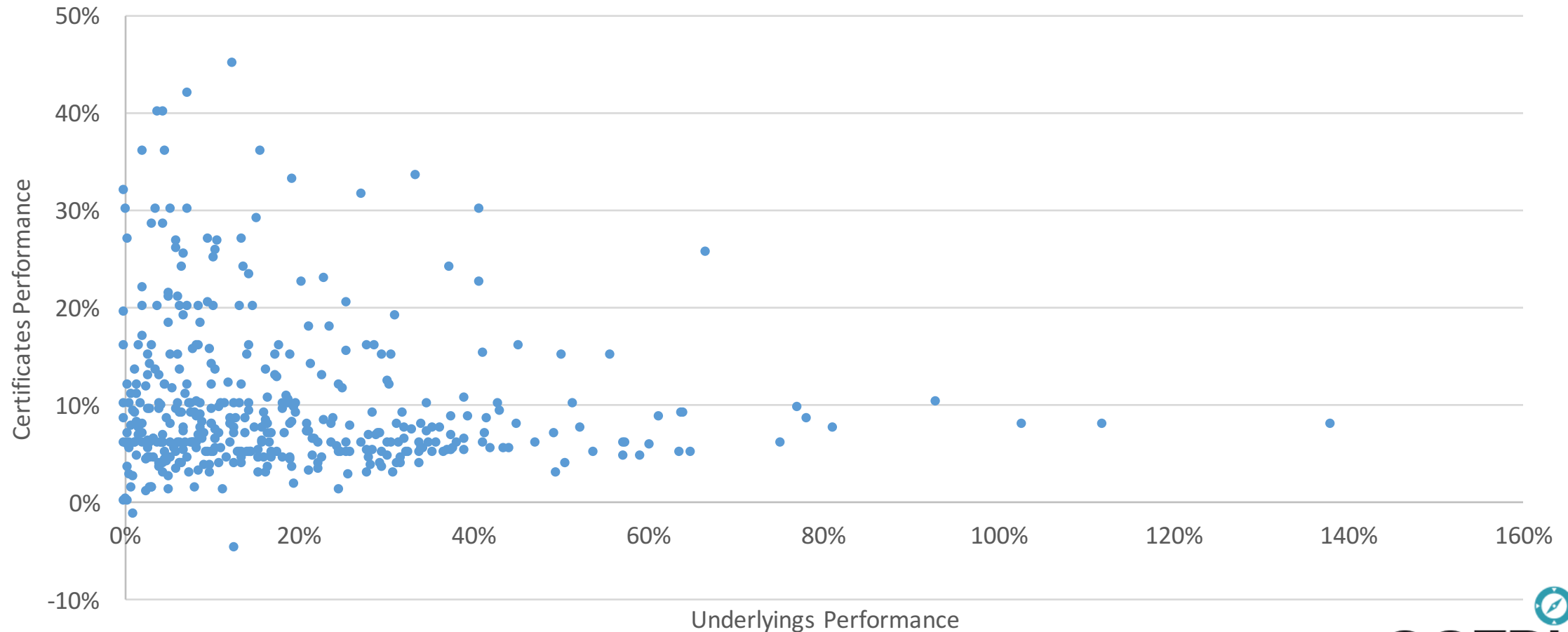
Scatter-plot: underlying with negative yields

Certificates with a underlying's negative performance have been considered. The certificates performance was, on average, higher than the underlying's one



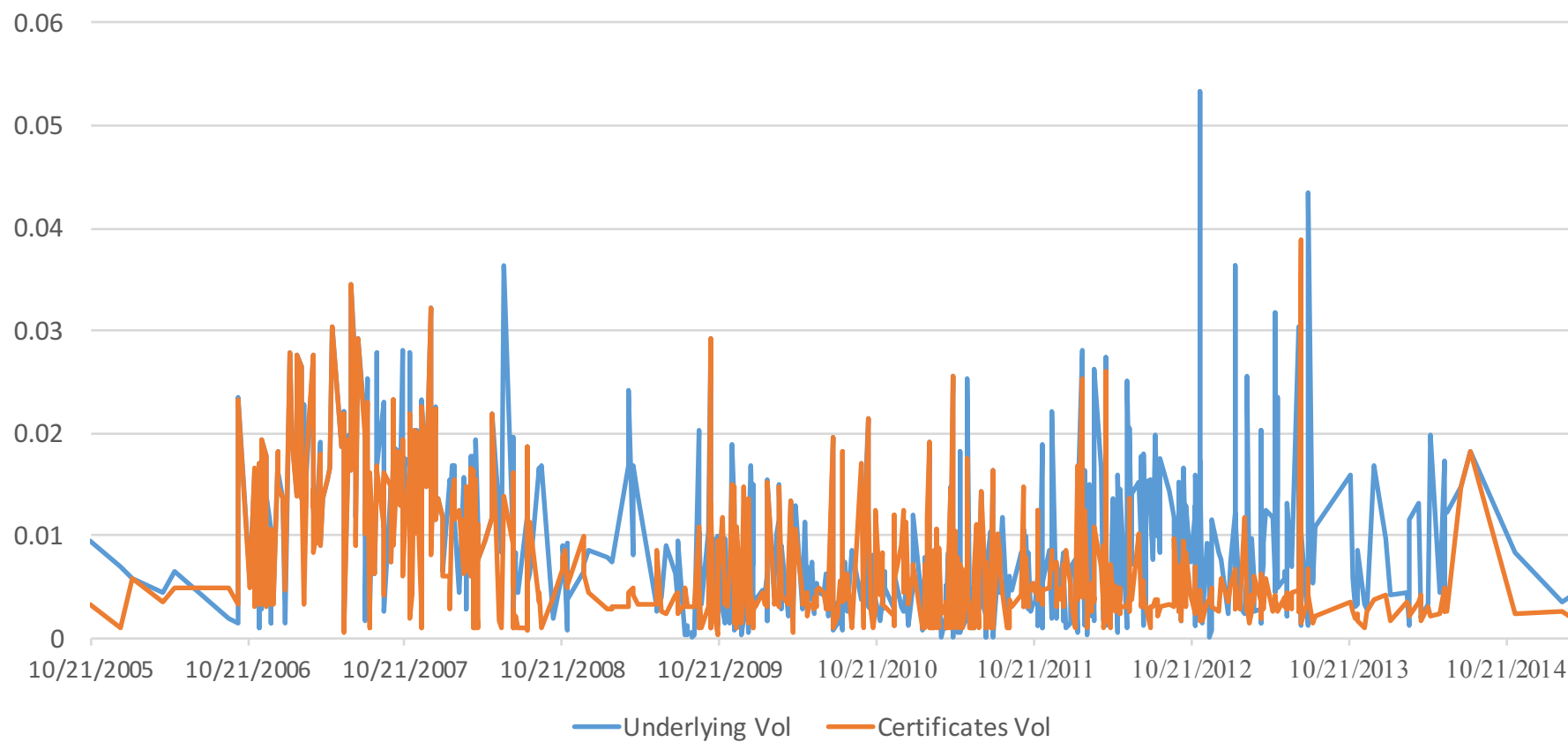
Scatter-plot: underlying with positive yields

Certificates with a underlying's positive performance have been considered. The average performance of the certificates has been positive



Volatility

The graph shows the volatility of the performance of the underlying and certified on the difference years of issue.



Average volatility on underlying yields

0,324

Average volatility on certificates yields

0,246

The volatility of the underlying performance is greater than the certificates' one

Volatility has been calculated using this formula:

$$Vol_t = \sqrt{\frac{1}{n-1} * \sum_{i=1}^t (r_t - \mu)^2}$$

Consideration of dividends

- It's important to take into consideration that the investors do not receive dividends with certificates. This doesn't happen in case of a direct investment in the underlying
- This statement is completely true in the case of certificates that have equities as underlyings
- In the case of products on indices or baskets, where a direct investment in the underlying is not possible, the dividends' issue is more controversial. Risks such as tracking error may also intervene
- For the analysis, dividends paid by the various underlying in relation to the maturities and early redemptions of the certificate have been considered

Yield adjusted with dividends

2005-2007	DIVIDEND YIELD	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA	ADJUSTED ALPHA
EXPRESS	3,47%	-30,07%	-23,84%	6,23%	2,76%
A. TWIN WIN	3,14%	-45,55%	-42,28%	3,27%	0,13%
2008-2009	DIVIDEND YIELD	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA	ADJUSTED ALPHA
EXPRESS	4,14%	-12,00%	0,01%	12,00%	7,86%
A. TWIN WIN	4,38%	-28,66%	-26,99%	1,67%	-2,71%
2010-2015	DIVIDEND YIELD	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA	ADJUSTED ALPHA
EXPRESS	3,48%	11,09%	6,42%	-4,67%	-8,15%
A. TWIN WIN	3,73%	10,14%	8,10%	-2,04%	-5,77%

Early redeemed and matured 2005-2007

The expired certificates have achieved an average positive performance; in case of early redemption, however, the average alpha is negative (even if the certificate performance has been positive anyway)

Not being available to repayment date of the retrieved certificates, it's impossible to calculate the reinvestment rate, therefore the data are not strictly comparable

TYPOLGY	PHASE	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA
EXPRESS	Early redeemed (8%)	15,69%	7,34%	-8,36%
	Matured (35%)	-41,01%	-31,30%	9,72%
AUTOCALLABLE TWIN WIN	Early redeemed (5%)	1,25%	8,34%	7,09%
	Matured (52%)	-50,29%	-47,41%	2,88%

Early redeemed and matured 2008-2009

The average performance and the alpha of the certificates has been, on average, positive
Cases of negative alpha should be attributed to Express who early redeemed and Twin Win Autocallable expired at maturity

TYOLOGY	PHASE	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA
EXPRESS	Early redeemed (31%)	12,37%	11,88%	-0,49%
	Matured (54%)	-25,92%	-6,77%	19,15%
AUTOCALLABLE TWIN WIN	Early redeemed (2%)	6,15%	23,00%	16,85%
	Matured (13%)	-32,76%	-32,88%	-0,12%

Early redeemed and matured 2010-2015

In case of lateral / bull market, the average alpha is negative when there is early redemption. It should however be pointed out that the performance of the certificates is still positive

TPOLOGY	PHASE	UNDERLYING PERFORMANCE	CERTIFICATES PERFORMANCE	ALPHA
EXPRESS	Early redeemed (67%)	19,56%	8,54%	-11,03%
	Matured (28%)	-9,53%	1,28%	10,81%
AUTOCALLABLE TWIN WIN	Early redeemed (4%)	12,23%	7,65%	-4,58%
	Matured (2%)	5,35%	9,11%	3,76%