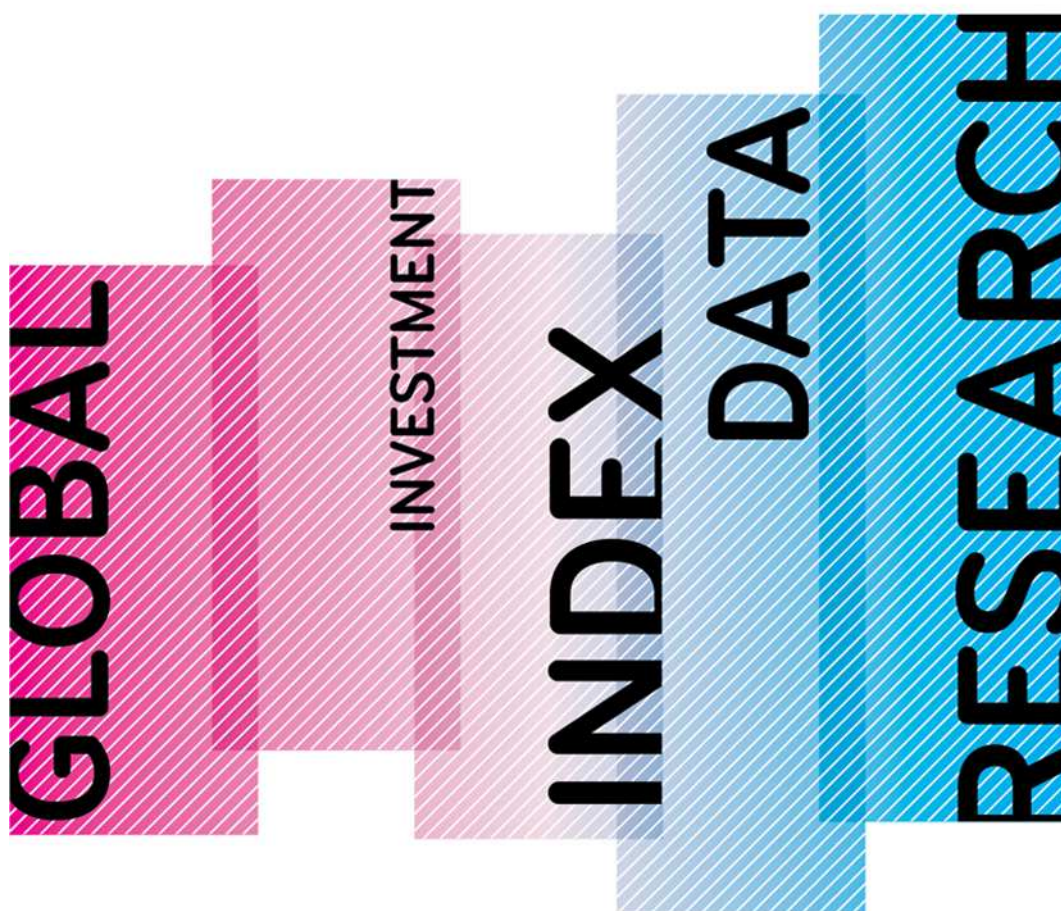


JUNE, 2015

STOXX TRU INDICES UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

Dr. Jan-Carl Plagge, Director, STOXX Ltd.



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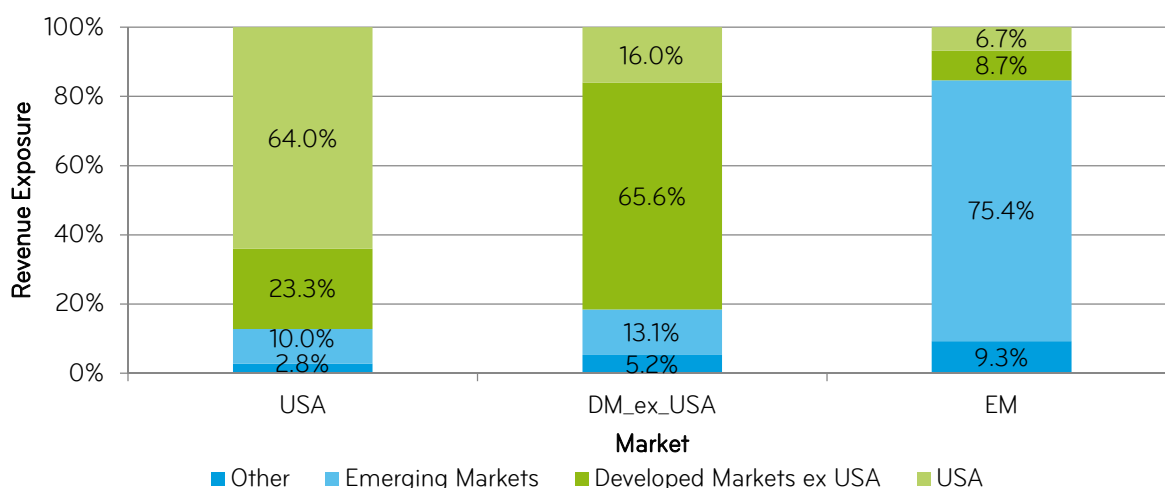
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Introduction

Investors typically assume that an investment in standard regional equity indices that select companies according to their country of domicile will provide them with adequate exposure to the targeted region. Far from it. Companies based in the US, for example, generate only about 64% of their revenue within the US. The remainder is generated in other parts of the world, with emerging markets contributing about 10%. The same observation holds true for other developed markets that, on average, generate only about 65% of their revenue within developed markets outside of the US. Companies incorporated in emerging markets, on the other hand, generate a slightly higher portion of revenue within emerging markets. But still roughly 25% of total revenue comes from regions outside of emerging markets (see Figure 1). Consequently, companies selected into these regional equity indices do not only provide exposure to the targeted region but also to foreign markets – markets to which investors might not want exposure. What makes matters worse is that investors are usually not aware of this indirect exposure and cannot control it.

FIGURE 1: REGIONAL SOURCE OF REVENUE GENERATION



Source: UN Comtrade and Service Trade database. Reported Period: 2013.

Figure 1: Regional breakdown of revenue generation for regions USA (STOXX USA 900), Developed Markets ex USA (STOXX DM ex USA) and Emerging Markets (STOXX EM). Exposures are weighted by free-float market cap.

Especially when viewed in a portfolio context, uncontrolled foreign exposure of portfolio constituents, or indices, can lead to substantial exposure overlaps.

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These overlaps increase the homogeneity of indices which increases their correlations. An increase in correlations, in turn, renders portfolios less efficient.

In this context, STOXX developed a new family of indices called STOXX True Exposure or STOXX TRU. By determining each company's revenue exposure to single countries, it is possible to make indirect or implicit exposures explicit which enables investors to regain control of effective exposures.

STOXX TRU Indices are currently available for five countries (Australia, Canada, Japan, UK and USA), four regions (Eurozone, Europe, Asia/Pacific and North America) as well as four market classifications (Developed Markets, Developed Markets ex Europe, Developed Markets ex USA and Emerging Markets).

Only those companies that generate a predefined minimum share of revenue in the respective market are selected into the respective index. STOXX TRU Indices are available with minimum exposure levels ranging from 25% up to the truly exposed 100%.

STOXX TRU Indices are found to capture three effects. First, they capture local market characteristics to a higher degree than standard equity indices. Second, companies selected in the STOXX TRU Indices are less dependent on foreign influences: in times of international crises, companies with high local revenue exposure are less prone to foreign market conditions. Third, and this, in part, follows from observations one and two, by disentangling regional revenue overlaps, STOXX TRU Indices are found to be less correlated among each other than standard equity indices are.

This paper empirically analyzes the three value propositions stated. Implications for the use of STOXX TRU indices are derived. Since the targeted alteration of revenue exposure is found to influence sector and country allocations of derived indices as well as the market capitalization of selected companies, chapter 3 explicitly focuses on the relation between revenue exposure to the local market and the dimensions sector as well as country allocation and firm size.

In order to create STOXX TRU Indices, revenue exposures to targeted countries and regions need to be determined. STOXX developed a proprietary revenue estimator - based on macroeconomic country- and industry-dependent exports of goods and services - that enables the estimation of exposures even in cases where companies do not disclose revenues on a country level. Chapter 4 provides a detailed description of the derived estimator.

1 STOXX TRU Indices and market efficiency

Chapter summary: By decreasing exposure overlaps among indices, STOXX TRU Indices are found to be more heterogeneous among each other than standard equity indices are. Higher heterogeneity, in turn, is expressed by lower correlations. Driven by these lower correlations, a combination of STOXX TRU Indices in a portfolio context enables the construction of more efficient portfolios, i.e. portfolios that capture more return per unit of risk taken.

A major objective of the STOXX TRU index family is to decrease correlations among indices by reducing exposure overlaps. The following section looks into risk, return and correlation characteristics of STOXX TRU Indices as well as standard equity indices.

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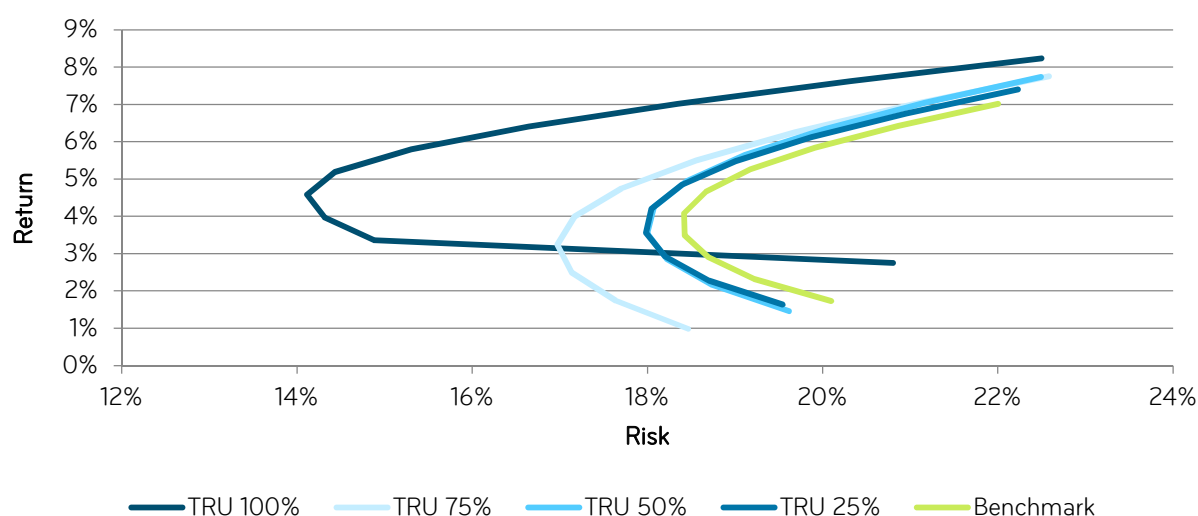
Both concepts are analyzed on a standalone basis as well as in a portfolio context.

A commonly used investment approach to allocate equity globally, especially from the perspective of US asset owners, is to distinguish between the US and the "rest of the world".

Often, the "rest of the world" is further divided into developed and emerging markets. For the following analysis, we apply this common distinction and base our analysis on the STOXX USA 900, the STOXX Developed Markets ex USA and the STOXX Emerging Markets Indices as well as on derived STOXX TRU Indices.¹

To assess whether a combination of STOXX TRU Indices leads to the expected increase in portfolio efficiency, efficient frontiers that represent the risk minimal combination of indices for a targeted level of return have been calculated for both standard equity indices and four STOXX TRU Indices with minimum exposure levels ranging from 25% to 100%. Figure 2 displays the empirical results.

FIGURE 2: EFFICIENT FRONTIERS (3-INDEX MODEL)



Source: STOXX

Figure 2: Efficient frontiers based on a three-index model (USA, Developed Markets ex USA and Emerging Markets). Benchmark indices are represented by STOXX USA 900, STOXX DM ex USA and

¹ STOXX TRU Developed Markets ex USA and STOXX TRU Emerging Markets Indices are based on STOXX Developed Markets TMI Large and Mid Cap as well as STOXX Emerging Markets Large and Mid Cap indices. For brevity's sake, the benchmark indices are referred to as STOXX Developed Markets as well as STOXX Emerging Markets Indices.

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STOXX EM. Annualized performance and volatility figures are based on USD Gross Return indices.

Volatilities are calculated based on daily logarithmic returns. Time period: Sep. 22, 2007 to May 12, 2015.

It can be observed that an increase in the minimum required exposure to the respective local market leads to a subsequent decrease in portfolio risk which moves the resulting efficient frontier further to the left, thus rendering combinations of STOXX TRU Indices more efficient than combinations of standard equity indices. The decrease in portfolio risk is found to be more distinct: the higher the minimum exposure to the local market, the lower the resulting degree of exposure overlap among STOXX TRU Indices.

In a portfolio context, risk is measured as a weighted average of the three indices' volatilities and correlations. To identify which of the two components drives the decrease in overall portfolio risk, correlations and volatilities need to be examined individually. Table 1 provides correlation figures for all three portfolio components.

TABLE 1: CORRELATIONS

	Benchmark Index	25%	50%	75%	100%
USA – DM ex USA	54.77%	51.40%	49.82%	43.09%	18.69%
USA – EM	59.33%	57.54%	56.47%	55.01%	52.82%
DM ex USA – EM	79.93%	78.75%	78.11%	75.46%	55.49%
Average	64.68%	62.56%	61.47%	57.86%	42.34%
Median	59.33%	57.54%	56.47%	55.01%	52.82%

Source: STOXX

Table 1: Correlations among benchmark indices and among derived STOXX TRU Indices. Benchmark indices are represented by STOXX USA 900, STOXX DM ex USA and STOXX EM Index. Annualized volatility figures are based on USD Gross Return indices and calculated based on daily logarithmic returns. Time period: Sep. 22, 2007 to May 12, 2015.

It can be observed that an increase in revenue exposure to the respective local market leads to a general decrease in correlations among the resulting indices. The most significant reduction in correlations originates from the STOXX TRU Developed Markets ex USA Index. The STOXX TRU Developed Markets ex USA 100% Index displays an 18.69% correlation with the STOXX TRU USA Index. That is a reduction of more than 50% compared with the correlation of the two benchmark indices: STOXX USA 900 and STOXX Developed Markets ex USA. Also the correlation between the STOXX TRU DM ex USA and the STOXX EM Index is reduced by as much as 30%, or 24.44 percentage points, when increasing the required exposure from 0% to 100%.

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Volatilities as a second factor that influences portfolio risk are found to remain relatively stable (see Table 2). On average, they are found to even decrease relative to the risk of the respective benchmark index. This observation is important as the increase of a common factor, such as companies' revenue exposure to a targeted market, may have led to an increase in homogeneity among those companies and consequently to an increase in pairwise correlations *within* indices. This increase, in turn, would have made these indices, ceteris paribus, more risky investments which may have offset the risk reducing effect as it stems from lower correlations *among* indices.

TABLE 2: VOLATILITIES

	Benchmark index	TRU 25%	TRU 50%	TRU 75%	TRU 100%
USA	22.01%	22.24%	22.50%	22.59%	22.51%
DM ex USA	20.10%	19.55%	19.62%	18.47%	16.00%
EM	22.00%	21.87%	21.77%	21.84%	20.81%
Average	21.37%	21.22%	21.30%	20.97%	19.77%
Median	22.00%	21.87%	21.77%	21.84%	20.81%

Source: STOXX

Table 2: Volatilities of benchmark indices and derived STOXX TRU Indices. Benchmark indices are represented by STOXX USA 900, STOXX DM ex USA and STOXX EM Index. Annualized volatility figures are based on USD Gross Return indices and calculated based on daily logarithmic returns. Time period: Sep. 22, 2007 to May 12, 2015.

The decrease in volatility with an increase in exposure, however, even supports the risk reducing effect as it comes from decreased correlations.

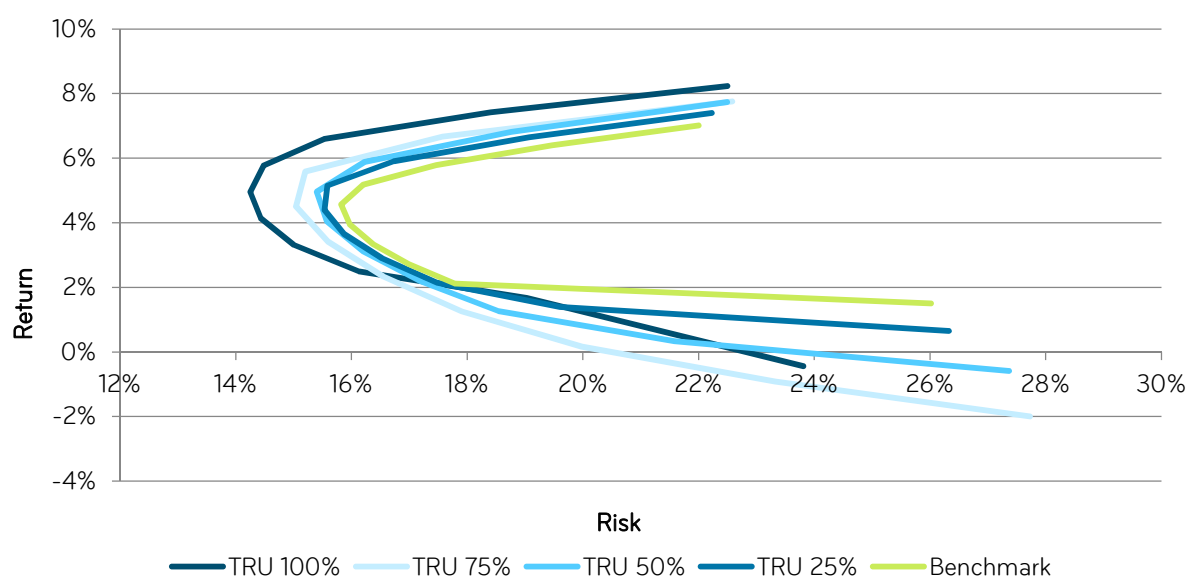
As it will be more closely analyzed in chapter 3, the increase in revenue exposure to local markets also affects country allocations of derived indices. The weight of countries that display a comparably high "home bias" tends to increase while the weight of countries with a relatively low home bias tends to decrease, leading to the targeted increase in the exposure level. Especially within developed markets, we see that exposure levels can vary greatly (see also Table 8).

In order to control the influence of a country's effect within the developed markets sample, we compose a second allocation model, which splits the STOXX Developed Markets ex USA index into single indices for Canada, Developed Europe, Japan and Australia while the selected indices for the US and emerging markets remain unchanged.

This model-extension allows a free allocation among the different regions and countries also *within* the construction of efficient frontiers based on benchmark indices. This way, regional or country effects on the position of efficient frontiers can be mitigated. The resulting efficient frontiers are displayed in Figure 3.

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FIGURE 3: EFFICIENT FRONTIERS (6-INDEX MODEL)



Source: STOXX

Figure 3: Efficient frontiers based on a six-index model (USA, Canada, Developed Europe, Japan, Australia and Emerging Markets). Benchmark indices are represented by STOXX USA 900, STOXX Canada 240, STOXX Europe 600, STOXX Japan 600, STOXX Australia 150 and STOXX EM Index. Annualized performance and volatility figures are based on USD Gross Return indices. Volatilities are calculated based on daily logarithmic returns. Time period: Sep, 22, 2007 to May 12, 2015.

It can also be observed that, when the weights of single developed markets float within the benchmark portfolio, portfolio combinations based on STOXX TRU Indices become more efficient the higher the degree of revenue disentanglement, i.e. the higher the minimum required level of revenue generated within the respective region or country.

Table 3 contains the correlations among all indices used to construct the respective portfolios. As it was found for the three-index model, correlations, on average, significantly decrease with an increase in the required local revenue share. Looking at the correlation between Japan and the US, to name an extreme, correlations are decreased from an already very low level of just 0.9% to -6% (STOXX TRU 100% Indices).

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TABLE 3: CORRELATIONS

	Benchmark Index	TRU 25%	TRU 50%	TRU 75%	TRU 100%
USA - Canada	74.53%	73.45%	72.11%	67.03%	61.18%
USA - Australia	28.17%	27.55%	26.93%	26.25%	22.60%
USA - Japan	0.94%	-0.76%	-1.65%	-3.27%	-5.92%
USA - Europe	60.00%	58.93%	58.01%	55.70%	51.31%
USA - EM	59.33%	57.54%	56.47%	55.01%	52.82%
Canada - Australia	52.66%	53.01%	53.26%	55.95%	55.59%
Canada - Japan	18.82%	17.02%	16.56%	15.71%	13.29%
Canada - Europe	74.06%	74.18%	73.84%	72.27%	68.92%
Canada - EM	68.93%	66.88%	65.71%	64.76%	61.72%
Japan - Australia	53.17%	50.45%	49.45%	45.90%	40.55%
Japan - Europe	22.12%	20.54%	19.51%	18.12%	15.39%
Japan - EM	38.69%	36.99%	36.32%	32.78%	25.91%
Europe - Australia	63.95%	63.67%	62.99%	61.98%	60.67%
Europe - EM	72.63%	70.66%	69.32%	66.20%	64.52%
EM - Australia	72.48%	71.97%	71.58%	70.91%	67.21%
Average	50.70%	49.47%	48.69%	47.02%	43.72%
Median	59.33%	57.54%	56.47%	55.70%	52.82%

Source: STOXX

Table 3: Correlations among benchmark indices and among derived STOXX TRU Indices. Benchmark indices are represented by STOXX USA 900, STOXX Canada 240, STOXX Europe 600, STOXX Japan 600, STOXX Australia 150 and STOXX EM Index. Annualized volatility figures are based on USD Gross Return indices and calculated based on daily logarithmic returns. Time period: Sep. 22, 2007 to May 12, 2015.

Table 4 provides volatility figures for all six portfolio components of the extended model. As was the case for the aggregated model, volatilities are found to decrease with an increase in the required local revenue share for all markets observed, thus adding to the decrease of overall portfolio risk.

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TABLE 4: VOLATILITIES

	Benchmark Index	TRU 25%	TRU 50%	TRU 75%	TRU 100%
USA	22.01%	22.24%	22.50%	22.59%	22.51%
Canada	25.04%	23.72%	22.86%	21.86%	21.66%
Australia	28.24%	27.77%	27.83%	27.45%	27.69%
Japan	22.60%	21.84%	21.59%	21.13%	20.25%
Europe	26.02%	26.33%	27.37%	27.73%	23.82%
EM	22.00%	21.87%	21.77%	21.84%	20.81%
Average	24.32%	23.96%	23.99%	23.77%	22.79%
Median	23.82%	22.98%	22.68%	22.22%	22.08%

Source: STOXX

Table 4: Volatilities of benchmark indices and derived STOXX TRU Indices. Benchmark indices are represented by STOXX USA 900, STOXX Canada 240, STOXX Europe 600, STOXX Japan 600, STOXX Australia 150 and STOXX EM Index. Annualized volatility figures are based on USD Gross Return indices and calculated based on daily logarithmic returns. Time period: Sep. 22, 2007 to May 12, 2015.

2 Revenue exposure and economic conditions

Chapter summary: Compared to standard equity indices, STOXX TRU Indices are found to provide a more distilled representation of the economic conditions of targeted markets. Looking at the currency strength as one of the economic indicators, STOXX TRU Indices are found to outperform their standard equity benchmark when the value of the local currency appreciates. Simultaneously, STOXX TRU Indices tend to be more immune against economic crises of foreign origin.

2.1 Revenue exposure and market conditions

By being more exposed to targeted regions and countries, STOXX TRU Indices capture economic conditions of markets to a higher degree than is the case for standard equity indices that select their components based on their country of domicile, being agnostic to the regional source of revenue generation of their components.

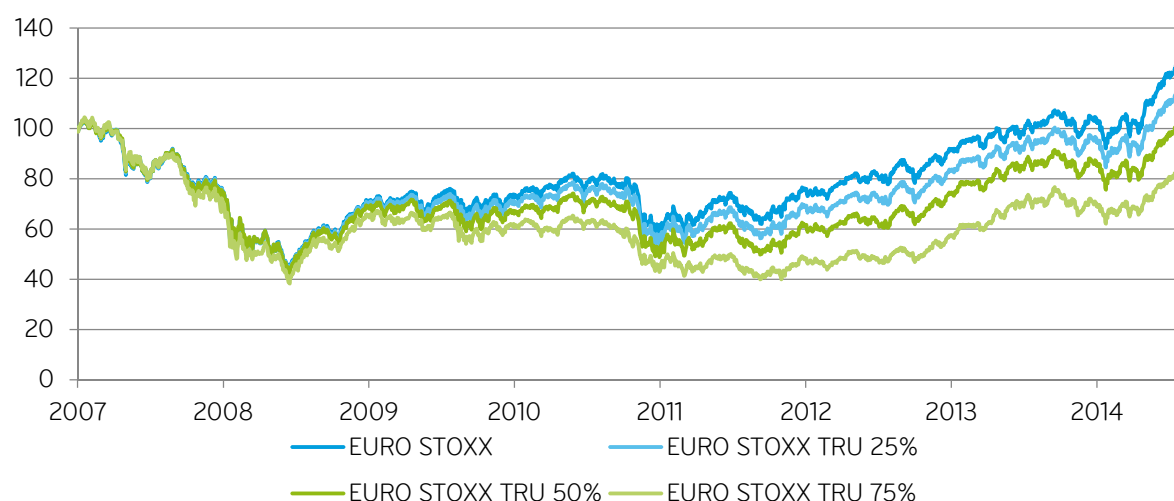
To illustrate this effect, we look at the behavior of EURO STOXX TRU and STOXX TRU USA Indices during the recent European crisis.

Figure 4 displays the historical performance of the EURO STOXX and EURO STOXX TRU Indices ranging from minimum exposure levels of 25% to 75%.²

² Please note that given the small number of index constituents in the EURO STOXX TRU 100% Index (17 as of March 22, 2016), which may distort certain index characteristics and derived conclusions, we exclude this index from the further analysis.

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FIGURE 4: PERFORMANCE OF EURO STOXX AND DERIVED EURO STOXX TRU INDICES



Source: STOXX

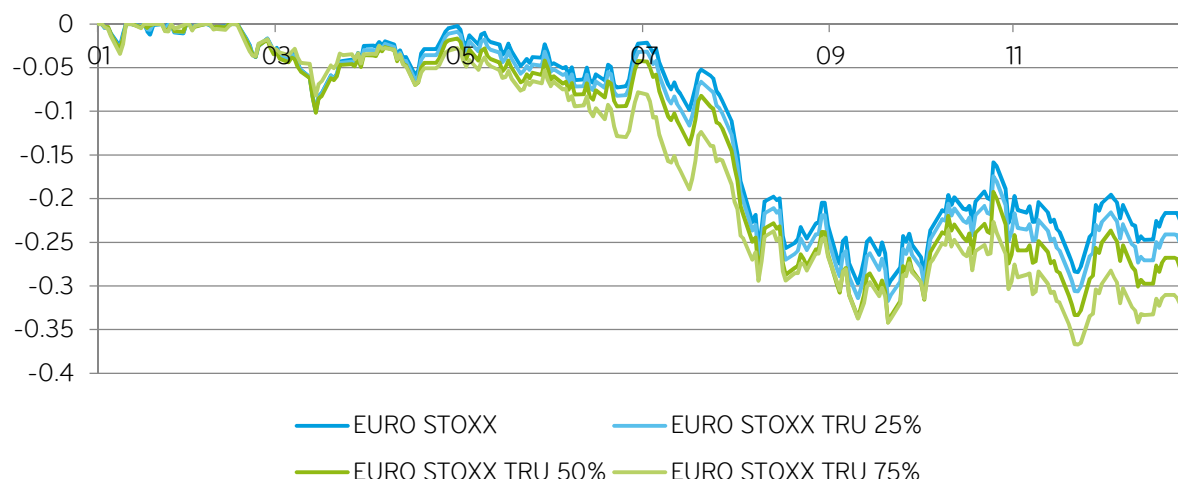
Figure 4: Indices calculated as EUR Gross Return. Time period: Sep. 22, 2007 to May 12, 2015.

It can be observed that, during the time of the European crisis - starting in 2010 - the performance of EURO STOXX TRU Indices was the lower, the higher the revenue exposure to the Eurozone. This observation makes sense as companies that generate a substantial portion of their revenue within the Eurozone depend on local market conditions to a much higher extend than companies that generate higher shares of revenue in foreign regions.

This conclusion is further supported when looking at trailing drawdowns during the year 2011: a year where equity markets drew down quite substantially due to a resurgence of the crisis (see Figure 5).

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FIGURE 5: TRAILING DRAWDOWN OF EURO STOXX AND DERIVED EURO STOXX TRU INDICES



Source: STOXX

Figure 5: Underlying indices calculated as EUR Gross Return. Time period: Jan. 1, 2011 to Dec. 31, 2011.

In support of the initial observation, the drawdown during this particular time period is found to be positively related to the level of revenue exposure to the local market: While the EURO STOXX drew down the least, the EURO STOXX TRU 75% drew down the most.³

While the Eurozone has been at the heart of the crisis, foreign markets were also affected. The US market, for example, drew down quite substantially in 2011. Figure 6 shows the trailing drawdowns of the STOXX USA 900 Index and derived STOXX TRU USA Indices.

For the United States, the effect of the European crisis on index performance is reversed compared to that observed in the context of EURO STOXX Indices. The lower the foreign sales exposure of US companies, and along with it, the lower the exposure to Europe during the time of the crisis, the lower the drawdown.⁴

While the STOXX USA 900 drew down the most with a maximum of 19.63%, the STOXX TRU USA 100% Index drew down only 17.9%, almost two percentage points less than its benchmark.⁵

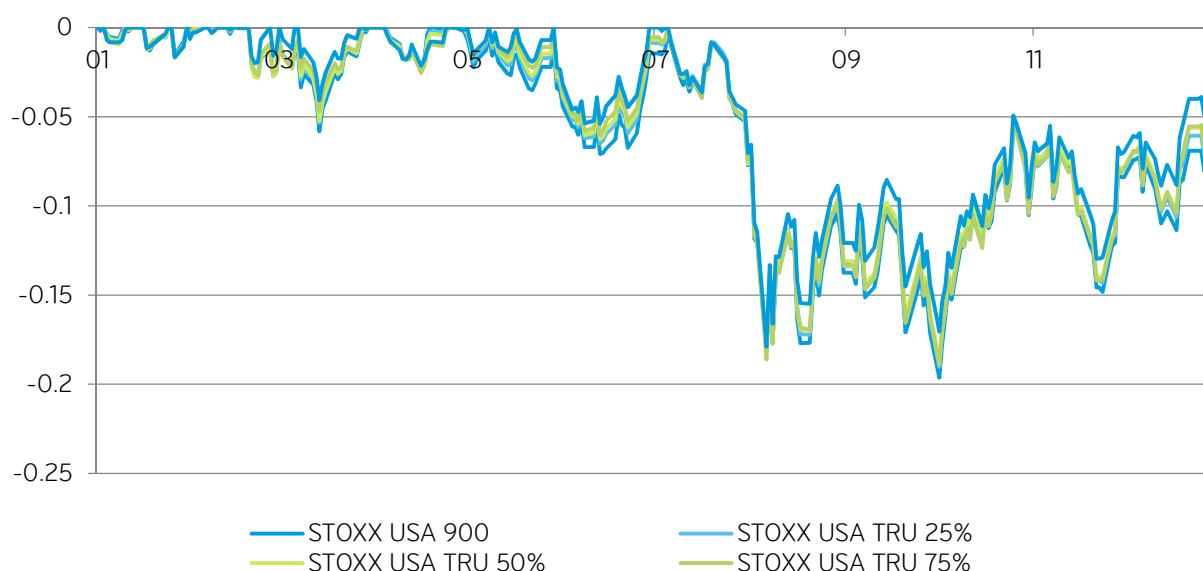
³ Please refer to Table A.10 of the Appendix for a detailed overview of risk, return and drawdown statistics for the EURO STOXX and derived EURO STOXX TRU Indices.

⁴ Please note that this trend is a general trend. When explicitly comparing the maximum drawdowns of the STOXX TRU USA 50% with that of the 75% version during the year 2011, we find that the drawdown of the 75% version was slightly higher (see Table A.11 of the Appendix).

⁵ Please refer to Table A.13 of the Appendix for a detailed overview of risk, return and drawdown statistics for the STOXX USA 900 and derived STOXX TRU USA Indices.

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FIGURE 6: TRAILING DRAWDOWN OF STOXX USA 900 INDEX AND DERIVED STOXX TRU USA INDICES



Source: STOXX

Figure 6: Underlying indices are calculated as USD Gross Return. Time period: Sep. 22, 2007 to May 12, 2015.

These two markets observed in the context of the European debt crisis illustrate two effects captured by STOXX TRU Indices. First, STOXX TRU Indices capture local market characteristics to a higher degree than standard equity indices. The negative impact of the European debt crisis on EURO STOXX TRU Indices was more pronounced the higher the selected companies' revenue exposure to the Eurozone. Second, STOXX TRU Indices provide a certain "immunity" toward events that have their origin outside of the targeted country or region. In this context, the effect of the European debt crisis on the US equity market was less pronounced the lower the selected companies' exposure to the markets outside of the United States.

2.2 The currency effect

Economic conditions are, to a significant extent, also expressed by the value of local currencies. By being more exposed to targeted regions, STOXX TRU Indices are found to capture currency valuations to a better extent than standard equity indices, which, in turn, enables investors to take on more decisive bets. Based on two indices of the STOXX TRU index family, this effect is empirically investigated for the Eurozone.

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The first index used in the analysis, the EURO STOXX TRU 50% Index, includes companies that generate at least 50% of their revenue *within* the Eurozone. The second index, the EURO STOXX International Exposure Index, on the other hand, selects companies incorporated in the Eurozone that generate at least 50% of their revenue *outside* of the euro area.

To assess the impact of the changes in the value of the euro on these two indices, we identify time periods that display substantial increases as well as decreases in the value of the euro, relative to the value of the US Dollar, the currency of the largest trading partner of the Eurozone (see Figure 7). Figures 8 and 9 compare the relative performance, or outperformance, of the EURO STOXX International Exposure Index as well as of the EURO STOXX TRU 50% Index relative to the EURO STOXX Index with the percentage change in the currency value for each period identified.

In the case of the EURO STOXX International Exposure Index, it can be observed that the two variables, the index's relative outperformance and the value of the euro are negatively related, i.e. the EURO STOXX International Exposure Index tends to outperform the EURO STOXX in periods when the euro *depreciates*. This characteristic can be explained by the high share of non-euro related revenue generated by the companies selected. In case a euro-denominated company reports its revenue in euro and generates a substantial portion of its revenue in US dollars during a time where the US dollar appreciates against the euro, its euro-denominated revenue increases.

In the case of the EURO STOXX TRU 50%, we find the opposite behavior. In most periods identified, the index outperforms its benchmark when the euro *appreciates* in value.

In other words, the EURO STOXX International Exposure Index is found to provide an implicit hedge against a depreciation of the local currency, i.e. it tends to outperform its benchmark, the EURO STOXX, whenever the euro depreciates. In case the euro is expected to appreciate in value, on the other hand, the EURO STOXX TRU 50% enables investors to over-proportionately profit from this increase as index constituents are more exposed to the euro than it is the case for companies selected into its benchmark, the EURO STOXX.

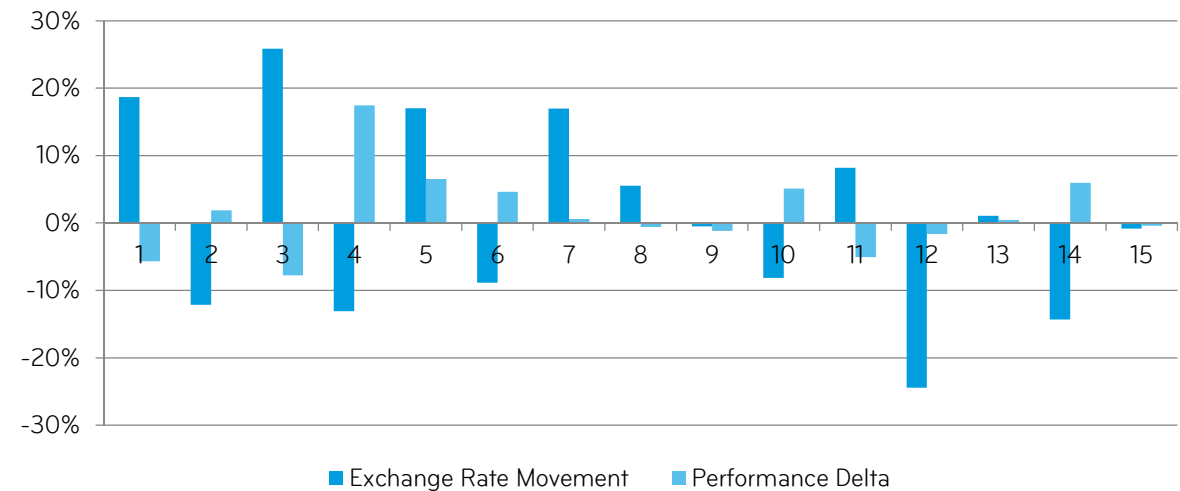
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FIGURE 7: DEVELOPMENT OF USD/EUR EXCHANGE RATE



Source: STOXX, Factset

FIGURE 8: INTERACTION OF EXCHANGE RATE MOVEMENT AND OUTPERFORMANCE OF EURO STOXX INTERNATIONAL EXPOSURE INDEX RELATIVE TO BENCHMARK

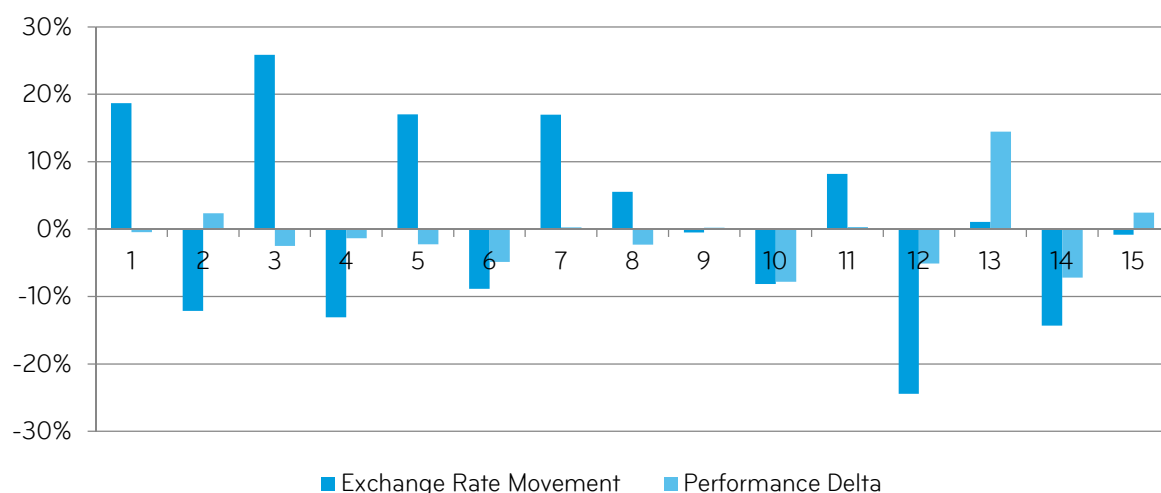


Source: STOXX, Factset. Time period: Sep. 21, 2007 to May 15, 2015.

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Figure 8: Development of USD/EUR exchange rate and outperformance of EURO STOXX International Exposure Index over Euro STOXX (EUR GR). Time period: Sep. 21, 2007 to May 15, 2015. The numbers below the plotted bars indicate the reference period displayed above Figure 7. Source: STOXX, Factset.

FIGURE 9: INTERACTION OF EXCHANGE RATE MOVEMENT AND OUTPERFORMANCE OF EURO STOXX TRU 50% INDEX RELATIVE TO BENCHMARK



Source: STOXX, Factset. Time period: Sep. 21, 2007 to May 15, 2015.

Figure 9: Development of USD/EUR exchange rate and outperformance of EURO STOXX TRU 50% index over Euro STOXX (EUR GR). Time period: Sep. 21, 2007 to May 15, 2015. The numbers below the plotted bars indicate the reference period displayed above Figure 7. Source: STOXX, Factset.

To further investigate the effect of revenue exposure on currencies, we extend our analysis by considering a regression model: in this model, the outperformance of STOXX TRU Indices for three markets - Developed Europe, the Eurozone and the US - is regressed against the value of the respective local currency (see Table 5 for the regression results).

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TABLE 5: REGRESSION RESULTS

Index	Dependent Variable	Daily Returns Coefficient	Weekly Returns Coefficient	Monthly Returns Coefficient
STOXX TRU Europe 25%	USDEUR	0.0309***	0.0369***	0.0490***
	Constant	0.0000	-0.0001	-0.0006
STOXX TRU Europe 50%	USDEUR	0.0976***	0.1131***	0.1342***
	Constant	-0.0001	-0.0003	-0.0013
STOXX TRU Europe 75%	USDEUR	0.1116***	0.1356***	0.1546***
	Constant	-0.0001	-0.0005	-0.0024
STOXX TRU Europe 100%	USDEUR	-0.1732***	-0.1107***	-0.1201**
	Constant	-0.0001	-0.0002	-0.0011
EURO STOXX TRU 25%	USDEUR	0.0268***	0.0400***	0.0388**
	Constant	0.0000*	-0.0002	-0.0008
EURO STOXX TRU 50%	USDEUR	0.0555***	0.0804***	0.0745**
	Constant	-0.0001*	-0.0004	-0.0019
EURO STOXX TRU 75%	USDEUR	0.0118	0.1158	0.1042
	Constant	-0.0002**	-0.0009*	-0.0039*
EURO STOXX TRU 100%	USDEUR	-0.1534***	-0.0488***	-0.0719
	Constant	0.0000	-0.0001	-0.0003
EURO STOXX Int. Exposure	USDEUR	-0.0234***	-0.0445***	-0.0225
	Constant	0.0001	0.0005	0.0021*
STOXX USA TRU 25%	USD Index	0.0263***	0.0374***	0.0469***
	Constant	0.0000	0.0001	0.0002
STOXX USA TRU 50%	USD Index	0.0482***	0.0594***	0.0619***
	Constant	0.0000	0.0001	0.0004
STOXX USA TRU 75%	USD Index	0.0551***	0.0772***	0.1456***
	Constant	0.0000	0.0001	0.0002
STOXX USA TRU 100%	USD Index	0.0767***	0.0982***	0.2199***
	Constant	0.0000	0.0002	0.0004

Source: STOXX, Factset

Table 5 provides regression coefficients based on regressions using currency values as the independent variable and relative outperformance on index level as dependent variable. Relative outperformance is calculated based on daily, weekly and monthly returns. Regressions including EURO STOXX and STOXX Europe related indices are based on EUR Gross Return indices, regressions including STOXX USA 900 related indices are based on USD Gross Return indices. ***, **, * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Time period: Sep. 22, 2007 to May 15, 2015.

For the case of developed Europe and the Eurozone, represented by the STOXX Europe 600 and the EURO STOXX, the value of the euro is measured against that of the US dollar. This seems reasonable as the US is one of the major foreign trading partners of Eurozone-based companies. For the case of the United States, we use the US dollar index, an index that measures the value of the US dollar against the currency value of its major foreign trading partners.

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With regard to all three markets, we find statistically significant results in support of the previously conducted heuristic analysis: STOXX TRU indices tend to outperform their benchmark when the respective local currency appreciates. This relation is especially pronounced in the case of STOXX TRU USA Indices. For all derived STOXX TRU USA indices, the outperformance is statistically significant at the 1%-level. In addition, relative outperformance is found to be the more pronounced, the higher the required minimum exposure level. This relation makes intuitive sense. Companies in the STOXX TRU USA 100% generate all of their revenue in the US and are consequently not affected by a depreciation of foreign currencies relative to the US dollar while companies selected into the least restrictive STOXX TRU index, the STOXX TRU USA index, may generate up to 75% of their revenue in foreign currencies which makes them vulnerable to devaluations of foreign currencies.

In the case of developed Europe and the Eurozone, we find the same positive relationship between the outperformance of STOXX TRU Europe and EURO STOXX TRU Indices compared to their respective benchmarks and the value of the euro.

However, this relationship is statistically significant only up to exposure levels of 75% (for the case of STOXX TRU Europe Indices) and to a level of 50% (for the case of EURO STOXX TRU Indices). A further increase in exposures renders results insignificant while, in the case of 100% exposure levels, the relations turn significant but negative. This counter-intuitive effect, however, may be explained by the small number of index constituents selected in the TRU 100% Indices. Thus, the characteristics of single stocks may overcompensate the currency effect assumed for entire markets.

The EURO STOXX International Exposure Index, also included in the analysis to test the opposite extreme, behaves as expected. Due to the index constituents' high sales exposure to non-Eurozone markets, the index outperforms the EURO STOXX whenever the euro depreciates.

Thus, also the regression results support the value proposition stated above. STOXX TRU indices capture the value of local currencies to a better extent than it is the case for standard equity indices. By investing in STOXX TRU indices, investors can take on more distinct positions which enables them to better exploit expected changes in currency values.

3 Market structure

Chapter summary: A successive increase in revenue exposure to the local market is found to have a certain effect on average firm size as well as on country and industry allocations.

Increasing exposure to the local market tends to reduce weights of industries and countries that display a comparably low exposure to the local market while weights of those industries and countries with high exposures are increased. Furthermore, size and local exposure are found to be negatively related.

As expectations and restrictions with regard to deviations in these dimensions from benchmarks vary among investors, STOXX TRU Indices are offered with exposure levels ranging from 25% to the truly exposed 100%.

The "home bias", or share of revenue that is generated within the boundaries of a given market is found to be country as well as industry dependent. With an average share of about 70%, companies resident in the United States, for example, are among those that generate the highest portion of their revenue locally.

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Companies domiciled in developed Europe, on the other hand, generate only about half of their revenue within Europe. The same deviations hold true on the industry level. Companies from the Utilities sector rank among those with the highest portion of local revenue; technology companies typically display a very geographically scattered revenue stream.

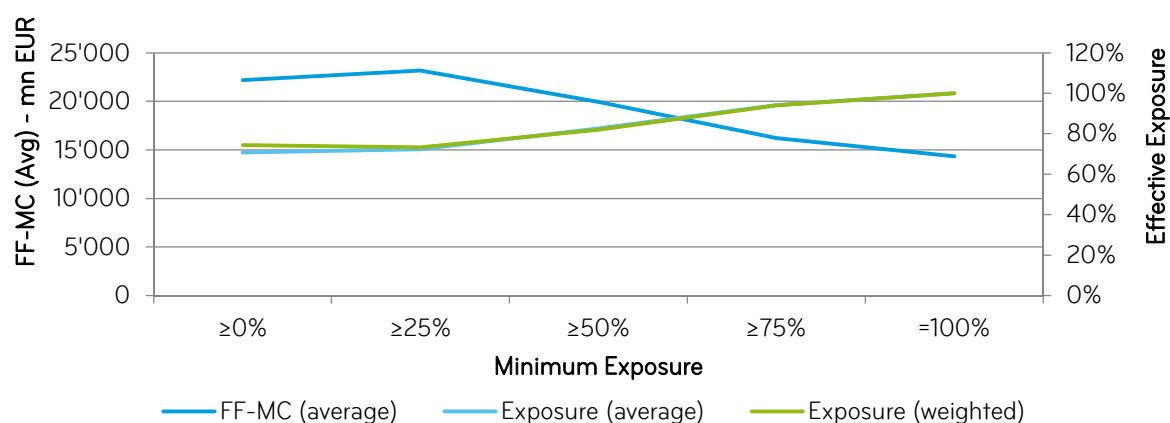
These market- and industry-dependent peculiarities need to be carefully analyzed and understood to construct indices that select companies according to their regional source of revenue generation. The following section focuses on the interaction of sales exposures with the dimensions size, sector as well as country allocation for the United States, "Developed Markets ex USA" as well as emerging markets.

3.1 USA

Across most regions observed, revenue exposures to the local market are found to be, on average, negatively related to size, i.e. the higher the required minimum revenue exposure to the local market, the smaller the size of the average company selected into the index. This observation also holds true for the US market.

Figure 10 displays the influence of a successive increase in the minimum required local sales exposure on average company size in the case of the United States.

FIGURE 10: RELATION BETWEEN MINIMUM LOCAL REVENUE EXPOSURE, SIZE AND EFFECTIVE EXPOSURE



Source: STOXX Ltd., Capital IQ.

Figure 10: Average free-float market cap (right axis) and average local sales exposure (unweighted and weighted by the product of free-float market cap and foreign sales exposure) (left axis) of STOXX US 900 companies. Figures are calculated for portfolios based on minimum required sales exposures to the US market ranging from 0% to 100%. Cut-off date: Mar. 22, 2015

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Increasing the minimum required revenue exposure of US companies to the local market from 0% to 25% slightly increases average firm size while a further increase to a maximum of 100% moderately reduces average free-float market capitalization from 22 billion euros to roughly 14 billion euros, or by 35% on a relative basis compared to the size of companies selected into the benchmark index STOXX USA 900. Simultaneously, market coverage - measured as the share of free-float market cap of all companies in the STOXX TRU USA 100% Index relative to the aggregated free-float market cap of the benchmark (STOXX USA 900) - decreases to 15.2%.^{6 7 8}

Next to the effect of the regional source of revenue generation on size and effective exposure, it is further important to understand that local sales exposures tend to vary among industries. US companies from the Utilities sector, for example, have a very strong home bias with an average share of local revenue of 92.7% while US companies from the Technology sector, on the other hand, generate not even half of their revenue at home (see Table 6).

TABLE 6: INDUSTRY DEPENDENT AVERAGE SALES EXPOSURES OF STOXX USA 900 COMPANIES TO US MARKET

Industry	Average Exposure	Weighted Average Exposure	Number of Constituents
Basic Materials	50.10%	54.20%	39
Consumer Goods	61.50%	69.50%	90
Consumer Services	79.00%	82.50%	110
Financials	87.40%	84.60%	174
Health Care	69.70%	66.80%	71
Industrials	63.60%	68.30%	155
Oil & Gas	70.80%	68.00%	56
Technology	45.80%	48.20%	86
Telecom.	96.00%	99.30%	9
Utilities	92.70%	95.50%	44

Source: STOXX, Capital IQ

Table 6: Industry averages of revenue exposures to US market (unweighted and weighted by free-float market cap times exposure). Fiscal year: 2013. Cut-off date: Mar. 22, 2015.

⁶ Please refer to Table A.1 of the Appendix for additional information on the relation between exposure, size and market coverage.

⁷ As exposure figures have not been available for all benchmark index components historically, benchmark indices used in this paper (such as the STOXX USA 900 Index) have been recalculated using only those components for which exposure figures were available on a historical basis.

⁸ It is worth to note the relationship between the *minimum* required level and the *effective* level of revenue exposure. The effective share of local revenue always exceeds the minimum requirement. The STOXX USA 900 Index, which can be interpreted as an index with a minimum exposure requirement of 0%, displays an average share of local revenue of roughly 70%. However, as this is merely an average, companies in the STOXX USA 900 can have very different exposures to the local market. While Apple, for example, generates only 38% of its revenue in the US, Verizon Communications generates its entire revenue base domestically. An increase in the minimum required foreign revenue share for each constituent to 50%, as is implemented in the STOXX TRU USA 50% Index, would exclude Apple but keep Verizon, which leads to a substantial increase in the effective local sales exposure by 12 percentage points to 82% (see Figure 10 as well as Table A.1 of the Appendix).

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These industry dependent peculiarities affect industry allocations when the minimum required sales exposure to the local market is gradually increased. As displayed in Table 7, we find a reallocation of weights away from industries that display a low exposure to the local market to those industries that display a high exposure to the United States.

Comparing the allocation of the STOXX USA 900 with that of the STOXX TRU USA 100% Index shows that the weight of the Technology sector, for example, is reduced by 9.3 percentage points from 9.6% to 0.3%, while the weight of the Utilities sector is increased from 4.7% to 15.4%.

TABLE 7: INDUSTRY ALLOCATION

Industry	STOXX USA 900	STOXX USA TRU 25%	STOXX USA TRU 50%	STOXX USA TRU 75%	STOXX USA TRU 100%
Basic Materials	2.0%	2.1%	1.0%	1.0%	--
Consumer Goods	9.2%	9.2%	9.5%	7.5%	5.9%
Consumer Services	16.6%	15.3%	18.2%	18.9%	19.2%
Financials	22.6%	21.7%	25.9%	28.9%	34.4%
Health Care	12.9%	12.7%	11.6%	7.0%	4.8%
Industrials	12.2%	12.9%	11.1%	11.7%	2.9%
Oil & Gas	6.7%	7.4%	6.0%	6.2%	5.4%
Technology	9.6%	9.9%	5.8%	1.3%	0.3%
Telecom.	3.5%	4.0%	5.0%	8.0%	11.6%
Utilities	4.7%	4.8%	5.9%	9.6%	15.4%

Source: STOXX, ICB

Table 7: Industry allocation of STOXX USA 900 and derived STOXX TRU USA Indices. Date: Mar. 22, 2015.

3.2 Developed Markets ex USA

The observations made in the context of the US market can also be transferred to other developed markets. Figure A.1 of the Appendix displays the relationship between minimum required exposures of developed market companies to other developed markets, excluding the United States, and average firm size. Again, we observe a negative relationship between local sales exposure and size.

Also the relationship between effective exposure and minimum exposure requirements on company level is identical to that observed in the context of US companies.⁹ Further, the discussed exposure dependence on industries is largely supported by observing other developed markets (see Table A.3 as well as A.4 of the Appendix).

⁹ Please also refer to Figure A.1. as well as to Table A.2 of the Appendix for additional information on the relation between exposure, size and market coverage.

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The fact that the STOXX Developed Markets ex USA Index covers various countries allows us to additionally analyze the exposure dependence on countries. Table 8 provides average exposure figures for each of the 25 countries covered. Similar to the industry dependence observed, we also find substantial deviations in local revenue exposures among countries. While companies incorporated in Hong Kong, for example, generate, on average, only 48% of their revenue within developed markets outside of the United States, companies from New Zealand generate 98% of their revenue within developed markets ex USA.

TABLE 8: COUNTRY DEPENDENT AVERAGE SALES EXPOSURES OF STOXX DM EX USA COMPANIES TO DEVELOPED MARKETS EX USA

Country	Average Exposure	Weighted Average Exposure	Number of Constituents
Austria	67.50%	72.50%	11
Australia	80.80%	88.90%	73
Belgium	69.60%	57.00%	15
Canada	66.70%	74.70%	112
Switzerland	68.60%	57.30%	55
Czech Republic	87.60%	90.50%	3
Germany	68.30%	66.60%	70
Denmark	68.90%	65.40%	19
Spain	69.80%	66.00%	35
Finland	67.00%	74.30%	17
France	68.10%	69.50%	90
Great Britain	67.80%	70.50%	159
Greece	79.40%	84.40%	5
Hong Kong	47.60%	77.00%	68
Ireland	65.20%	79.10%	9
Israel	67.90%	60.50%	10
Italy	76.20%	82.80%	43
Japan	79.10%	80.20%	336
Luxembourg	66.40%	65.40%	3
Netherlands	59.30%	68.00%	23
Norway	70.70%	78.20%	13
New Zealand	97.70%	96.40%	5
Portugal	77.60%	82.50%	6
Sweden	70.00%	75.70%	49
Singapore	67.60%	73.80%	43

Source: STOXX Ltd., Capital IQ.

Table 8: Country averages of revenue exposures to Developed Markets ex USA (unweighted and weighted by free-float market cap times exposure). Reported Period: 2013. Cutoff date: Mar. 22, 2015.

A successive increase in minimum required revenue exposures to the local region is found to have a very similar effect to that already observed in the context of the industry related analysis. While weights of New Zealand or Japan - countries with a relatively high home bias - are successively increased, the weights of countries such as the Netherlands, where companies generate only about 60% of their revenue locally, is successively reduced (see Table 9).

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TABLE 9: COUNTRY ALLOCATION – STOXX DEVELOPED MARKETS EX USA INDEX

Country	STOXX DM ex USA	STOXX TRU DM ex USA 25%	STOXX TRU DM ex USA 50%	STOXX TRU DM ex USA 75%	STOXX TRU DM ex USA 100%
Austria	0.20%	0.10%	0.10%	0.10%	--
Australia	8.20%	8.20%	9.70%	14.70%	7.10%
Belgium	0.70%	0.30%	0.30%	0.30%	0.30%
Canada	8.50%	8.20%	8.60%	8.00%	13.30%
Switzerland	6.30%	6.60%	3.10%	2.00%	1.10%
Czech Republic	0.10%	0.10%	0.10%	0.20%	0.30%
Germany	7.60%	7.30%	7.30%	2.90%	1.70%
Denmark	1.20%	1.40%	1.10%	1.10%	0.20%
Spain	2.70%	2.90%	2.50%	2.50%	0.30%
Finland	0.90%	1.00%	1.20%	1.10%	--
France	8.50%	8.50%	7.60%	6.80%	1.10%
Great Britain	17.50%	16.00%	14.60%	11.00%	11.80%
Greece	0.10%	0.10%	0.10%	0.10%	--
Hong Kong	2.20%	2.40%	2.50%	3.00%	4.30%
Ireland	0.50%	0.60%	0.60%	0.80%	--
Israel	0.40%	0.40%	0.20%	0.20%	--
Italy	2.60%	2.50%	3.00%	3.80%	2.90%
Japan	24.40%	25.30%	29.00%	31.70%	52.80%
Luxembourg	0.20%	0.20%	0.20%	0.10%	--
Netherlands	1.90%	2.00%	1.80%	1.90%	0.30%
Norway	0.70%	0.70%	0.80%	0.90%	--
New Zealand	0.10%	0.10%	0.20%	0.30%	0.40%
Portugal	0.20%	0.10%	0.10%	0.20%	--
Sweden	3.00%	3.40%	3.60%	4.60%	0.70%
Singapore	1.50%	1.60%	1.80%	1.70%	1.40%

Source: STOXX Ltd., Capital IQ.

Table 9: Country allocation of STOXX DM ex USA Index and derived STOXX TRU DM ex USA Indices. Cutoff date: Mar. 22, 2015.

3.3 Emerging markets

Also for emerging markets, we can make very similar deductions with regard to the relationship between revenue exposure, size, industry and country allocations.¹⁰

It is worth pointing out that we observe a generally higher average share of revenue generated locally among companies resident in emerging markets compared to those domiciled in developed markets.

While the average share of revenue generated locally among developed markets was roughly 70%, for emerging markets the share is 82%. This higher "reference" point leads to slightly lower sector and

¹⁰ See Figures A.2 as well as Tables A.5 to A.9 of the Appendix for additional information on the relation between exposures, size, country and sector allocations for Emerging Market companies.

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country deviations from the benchmark when increasing minimum revenue thresholds (see Tables A.7 and A.9 of the Appendix).

However, the effect on size is roughly comparable to that found among US companies. Companies selected into the STOXX TRU Emerging Markets 100% display, on average, a market cap that is 34% below that of its benchmark, the STOXX Emerging Markets Large and Mid Cap Index.

Having analyzed the three regions covered by the selected indices, the following general statements can be derived: An increase in the focus on the local market typically coincides with deviations in sector and country allocations as well as in the average company size relative to standard equity indices. These deviations tend to be the more pronounced the lower the average local revenue share of companies represented by the benchmark index. If companies in a given market generate, on average, only a small share of total revenue locally an increase to exposure levels of, e.g. 75% or 100%, will lead to greater deviations relative to markets that already have a comparably high home bias, such as the United States. In this context, STOXX TRU indices are offered with exposure levels ranging from 25% to 100%. The availability of different exposure levels allows investors to choose their preferred trade-off between revenue exposure and deviations from standard benchmarks.

4 Determining Regional Revenue Exposures

Chapter summary: Companies typically do not fully disclose their revenue allocation on a country level. In order to estimate revenue on country level, when reporting may only be available on a more aggregated, e.g. regional level, STOXX developed a proprietary methodology that breaks down revenue to the country level by taking into account country- and industry-specific macroeconomic export relations between countries.

Determining companies' regional revenue exposure is a complex process. Typically, no reporting standard with regard to the regional revenue breakdown exists. It is up to each company to disclose the geographical breakdown of revenue. In most cases, companies report revenues broken down to the country level merely for their home country. The remainder is typically reported on a more aggregated, e.g. regional level. Hereby, regions may be defined by political or regional boundaries (e.g. the European Union or Asia).

To estimate the portion of revenue that is generated in each country, STOXX developed a proprietary revenue estimator which is based on macroeconomic country- and industry-dependent exports of goods and services.

Based on this information, revenue reported by companies on a regional level are broken down to the country level proportional to exported goods and services of the respective company's home country as well as its sector to all countries of the reported region. A significant advantage of this estimator compared to related estimators available in the marketplace is that it takes into account country- and industry-specific information.

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The revenue of company *i* (located in country *H* and belonging to industry *J* that are generated in country *c* of region *R* are calculated as:

$$S_{i,cR} = \frac{EXP_{H,J,cR}}{\sum_{cR} EXP_{H,J,cR}} S_{i,R}$$

where $S_{i,R}$ indicates the revenues of company *i* generated in region *R*, and $EXP_{H,J,cR}$ indicates the exports from company *i*'s home country's (*H*) industry *J* to country *c* of region *R*.

US-based industrial goods and services company Eaton Corp., for example, reports revenue broken down to the country level only for its home country and Canada. The rest is reported on a more aggregated, i.e. regional level (see Table 10).

TABLE 10: REGIONAL REVENUE BREAKDOWN OF EATON CORP. FISCAL YEAR 2013

Reported Region	Revenue (absolute) (USD mn)	Revenue (relative)	Exposure (Developed)
USA	11,092	50.31%	50.31%
Europe	5,112	23.19%	21.64%
APAC	2,575	11.68%	5.57%
Latin America	2,113	9.58%	0.00%
Canada	1,154	5.23%	5.23%

Source: Capital IQ

To determine the share of total revenue that Eaton generates in a targeted region, e.g. in developed markets, reported regions need to be broken down to the country level. This way, we can distinguish the portion of revenue derived in developed markets from that derived in emerging markets.

While it is clear that Latin America does not include any developed countries, Europe and Asia need to be analyzed. Hereby, the breakdown is conducted using the above described estimator. In the case of Europe, a region where Eaton Corp. generates 23.19% of its total revenue, the country portions are determined proportional to exports of commodities and services relevant for companies that operate within the industrial goods and services sector and flow from the US to European countries (see Table 11 for the respective export figures for the top 10 European export partners).

UK, with a share of 22.30%, is the most important trading partner in Europe, followed by Germany, France and the Netherlands. Applying these export-based proportions to the reported share of European revenue of 23.19%, allocates 5.17% to the UK (see column 5 of Table 11).

Having determined the revenue exposure to each European country, we can now distinguish between developed and emerging countries to derive the portion of total revenue that comes from developed markets.

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While the exposure to the UK as a developed nation, for example, is fully taken into account, exposure to Russia or Poland as emerging markets is set to zero (see column 7 of Table 11). Applying this procedure to all European countries shows that 21.64% of the total 23.19% of European revenue come from developed markets.

The overall share of total revenue generated in developed markets can then be determined by adding up the European share, the US share, the Canadian share as well as the Asia/Pacific share, which yields 82.75% (=21.64%+50.31%+5.23%+5.57%).

TABLE 11: EXPORTS OF GOODS AND SERVICES

Region	Country	Exports of goods and services (USD)	Share (Exports)	Share (rescaled)	Classification	Share (rescaled) - Developed
Europe	UK	34,685,820,173	22.30%	5.17%	Developed	5.17%
Europe	Germany	31,740,973,002	20.41%	4.73%	Developed	4.73%
Europe	France	20,334,052,105	13.07%	3.03%	Developed	3.03%
Europe	Netherlands	17,852,576,747	11.48%	2.66%	Developed	2.66%
Europe	Switzerland	14,416,408,020	9.27%	2.15%	Developed	2.15%
Europe	Belgium	6,532,587,084	4.20%	0.97%	Developed	0.97%
Europe	Italy	6,375,576,922	4.10%	0.95%	Developed	0.95%
Europe	Russia	5,353,522,630	3.44%	0.80%	Emerging	--
Europe	Norway	2,603,104,603	1.67%	0.39%	Developed	0.39%
Europe	Poland	2,024,304,600	1.30%	0.30%	Emerging	--
...	...	...	...	...	...	...
Sum			100%	23.19%		21.64%

Source: UN Comtrade and Service Trade database. Reported Period: 2013.

Table 11: Exports of goods and services related to ICB sector Industrial Goods and Services between US and European countries.

The home country as well as industry-dependent estimation process, as described above for the example of Eaton Corp., allows for a high quality estimation of revenue exposures in cases where revenue origin is not disclosed on the country level.

5 Conclusion

STOXX TRU Indices include companies that generate a substantial portion of their revenue in targeted countries or regions.

By making the regional source of revenue explicit, STOXX TRU Indices enable investors to effectively control for and make use of certain market characteristics.

STOXX TRU indices are found to capture three effects. First, they capture local market characteristics to a higher degree than standard equity indices. Second, companies selected into STOXX TRU Indices are less

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dependent on foreign influences: in times of international crises, companies with high local revenue exposure tend to be less prone to foreign market conditions.

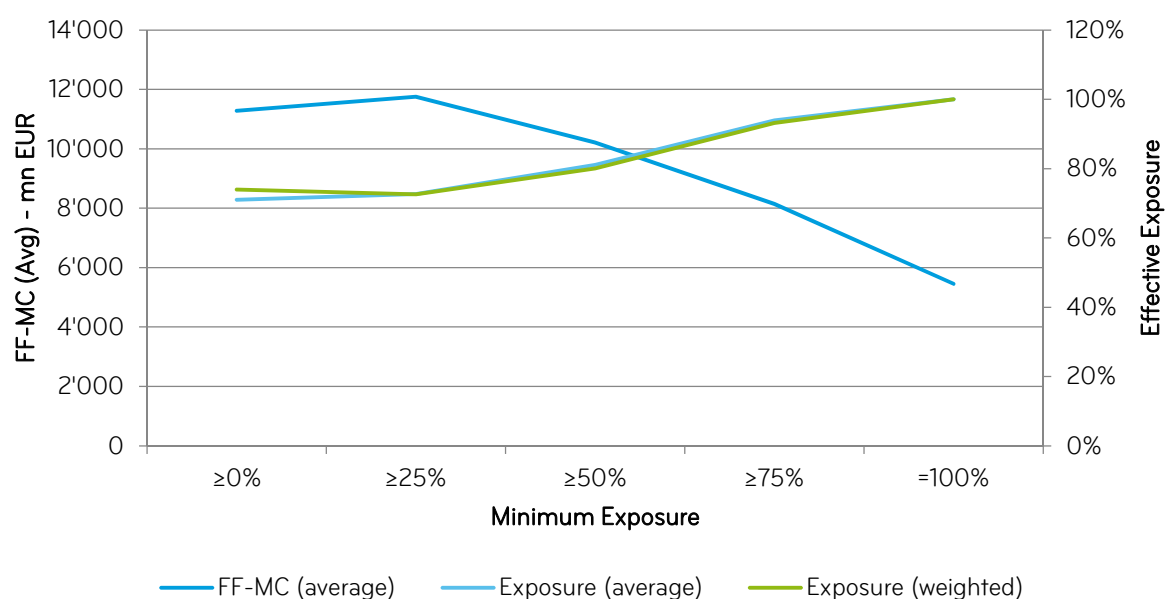
Third, following from observations one and two, by disentangling regional revenue overlaps, STOXX TRU Indices are found to be less significantly correlated among each other than standard equity indices. Viewed in a portfolio context, lower correlations among regional indices enable the construction of more efficient portfolios.

A proprietary revenue estimator, which takes into account country- and industry-specific export relations, developed by STOXX, allows for a high quality estimation of the regional source of revenue even if companies do not provide full disclosure.

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Appendix

FIGURE A.1: RELATION BETWEEN MINIMUM LOCAL REVENUE EXPOSURE, SIZE AND EFFECTIVE EXPOSURE

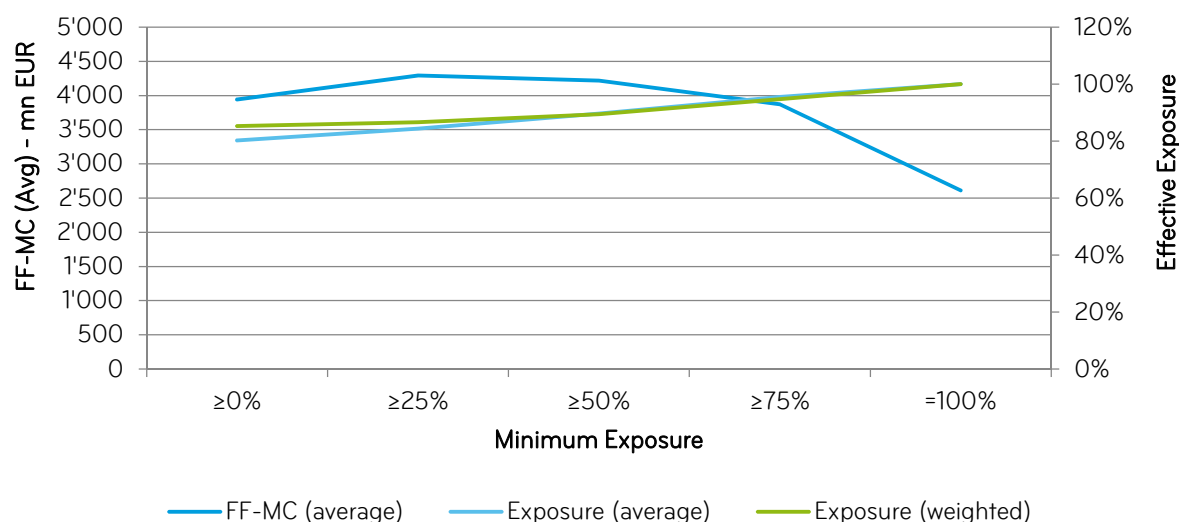


Source: STOXX Ltd., Capital IQ.

Figure A.1: Average free-float market cap (right axis) and average local sales exposure (unweighted and weighted by the product of free-float market cap and foreign sales exposure) (left axis) of STOXX DM ex USA companies. Figures are calculated for portfolios based on minimum required sales exposures to Developed Market ex USA ranging from 0% to 100%. Cut-off date: Mar. 22, 2015.

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FIGURE A.2: RELATION BETWEEN MINIMUM LOCAL REVENUE EXPOSURE, SIZE AND EFFECTIVE EXPOSURE



Source: STOXX Ltd., Capital IQ.

Figure A.2: Average free-float market cap (right axis) and average local sales exposure (unweighted and weighted by the product of free-float market cap and foreign sales exposure) (left axis) of STOXX EM companies. Figures are calculated for portfolios based on minimum required sales exposures to Emerging Markets ranging from 0% to 100%. Cut-off date: Mar. 22, 2015.

TABLE A.1: SIZE, EFFECTIVE EXPOSURE AND MARKET COVERAGE

Min. Exposure	FF-MC (average)	FF-MC (weighted)	Exposure (average)	Exposure (weighted)	Number of Constituents	Coverage
≥0%	22,190	89,044	70.80%	74.40%	834	100.00%
≥25%	23,170	95,777	72.30%	73.20%	695	87.00%
≥50%	19,936	71,054	82.60%	81.90%	531	57.20%
≥75%	16,227	61,200	94.20%	94.00%	336	29.50%
=100%	14,354	54,004	100.00%	100.00%	196	15.20%

Source: STOXX

Table A.1: Average free-float market caps, effective exposures to US market (un-weighted and weighted according to product of exposure and market cap), number of constituents and market coverage

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(calculated as respective share of free-float market cap of total free-float market cap of benchmark) as function of varying minimum required revenue exposures to US market. Cut-off date: Mar. 22, 2015.

TABLE A.2: SIZE, EFFECTIVE EXPOSURE AND MARKET COVERAGE

Min. Exposure	FF-MC (average)	FF-MC (weighted)	Exposure (average)	Exposure (weighted)	Number of Constituents	Coverage
≥0%	11,275	41,667	71.00%	74.00%	1272	100.00%
≥25%	11,751	42,844	72.70%	72.60%	1083	88.70%
≥50%	10,215	35,404	81.10%	80.10%	855	60.90%
≥75%	8,141	25,500	93.90%	93.20%	511	29.00%
=100%	5,451	11,946	100.00%	100.00%	222	8.40%

Source: STOXX

Table A.2: Average free-float market caps, effective exposures to DM ex US market (unweighted and weighted according to product of exposure and market cap), number of constituents and market coverage (calculated as share of free-float market cap to total free-float market cap of benchmark) as function of varying minimum required revenue exposures to DM ex US market. Cut-off date: Mar. 22, 2015.

TABLE A.3: INDUSTRY DEPENDENT AVERAGE SALES EXPOSURES OF STOXX DM EX USA COMPANIES TO DM EX USA MARKET

Industry	Average Exposure	Weighted Average Exposure	Number of Constituents
Basic Materials	53.20%	56.40%	114
Consumer Goods	59.20%	57.90%	165
Consumer Services	80.90%	86.70%	169
Financials	85.30%	85.60%	298
Health Care	59.00%	52.30%	70
Industrials	63.00%	66.10%	237
Oil & Gas	65.20%	67.80%	68
Technology	62.40%	68.30%	53
Telecom.	86.90%	87.10%	39
Utilities	87.70%	87.90%	59

Source: STOXX

Table A.3: Industry averages of revenue exposures to DM ex US market (unweighted and weighted by free-float market cap times exposure).reported period 2013. Cut-off date: Mar. 22, 2015.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.4: INDUSTRY ALLOCATION

Industry	STOXX DM ex USA	STOXX TRU DM ex USA 25%	STOXX TRU DM ex USA 50%	STOXX TRU DM ex USA 75%	STOXX TRU DM ex USA 100%
Basic Materials	5.9%	6.3%	5.1%	1.1%	0.3%
Consumer Goods	13.2%	14.3%	12.6%	4.7%	4.0%
Consumer Services	9.7%	9.9%	11.5%	17.2%	24.9%
Financials	31.9%	29.0%	34.5%	44.5%	37.1%
Health Care	7.3%	8.0%	3.5%	1.5%	1.3%
Industrials	12.6%	13.2%	11.6%	7.2%	5.0%
Oil & Gas	6.0%	6.4%	6.2%	4.2%	2.5%
Technology	2.9%	3.0%	3.2%	2.0%	1.8%
Telecom.	6.0%	5.5%	6.4%	9.0%	11.2%
Utilities	4.3%	4.6%	5.4%	8.6%	12.0%

Source: STOXX

Table A.4: Industry allocation of STOXX DM ex USA and derived STOXX TRU Indices. Date: Mar. 22, 2015.

TABLE A.5: SIZE, EFFECTIVE EXPOSURE AND MARKET COVERAGE

Min. Exposure	FF-MC (average)	FF-MC (weighted)	Exposure (average)	Exposure (weighted)	Number of Constituents	Coverage
≥0%	3,941	21,125	80.20%	85.30%	1018	100.00%
≥25%	4,292	22,958	84.40%	86.60%	668	71.50%
≥50%	4,217	23,059	89.60%	89.40%	600	63.10%
≥75%	3,873	15,861	95.50%	94.70%	490	47.30%
=100%	2,613	7,964	100.00%	100.00%	238	15.50%

Source: STOXX

Table A.5: Average free-float market caps, effective exposures to Emerging Markets (unweighted and weighted according to product of exposure and market cap), number of constituents and market coverage (calculated as share of free-float market cap to total free-float market cap of benchmark) as function of varying minimum required revenue exposures to Emerging Markets. Cut-off date: Mar. 22, 2015.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.6: INDUSTRY DEPENDENT AVERAGE SALES EXPOSURES OF STOXX EM COMPANIES TO EMERGING MARKETS

Industry	Average Exposure	Weighted Average Exposure	Number of Constituents
Basic Materials	71.70%	78.40%	109
Consumer Goods	78.70%	79.90%	150
Consumer Services	87.40%	85.30%	97
Financials	87.20%	93.70%	254
Health Care	67.20%	75.00%	39
Industrials	78.70%	82.60%	156
Oil & Gas	76.20%	74.10%	55
Technology	46.90%	71.30%	52
Telecom.	92.10%	88.60%	45
Utilities	94.20%	96.00%	61

Source: STOXX

Table A.6: Industry averages of revenue exposures to Emerging Markets (un-weighted and weighted by free-float market cap times exposure). Reported period: 2013. Cut-off date: Mar. 22, 2015.

TABLE A.7: INDUSTRY ALLOCATION

Industry	STOXX EM	STOXX TRU EM 25%	STOXX TRU EM 50%	STOXX TRU EM 75%	STOXX TRU EM 100%
Basic Materials	6.0%	7.0%	6.8%	6.0%	2.4%
Consumer Goods	16.0%	17.5%	17.2%	11.1%	6.4%
Consumer Services	6.2%	6.7%	6.9%	6.0%	10.6%
Financials	33.4%	33.0%	35.0%	42.6%	47.1%
Health Care	1.9%	1.6%	1.4%	1.1%	1.7%
Industrials	10.4%	9.8%	10.2%	9.5%	6.7%
Oil & Gas	8.1%	7.1%	5.7%	4.0%	1.8%
Technology	6.1%	6.5%	5.8%	6.4%	0.7%
Telecom.	7.7%	6.1%	6.2%	7.2%	13.7%
Utilities	4.2%	4.7%	4.9%	6.0%	9.1%

Source: STOXX

Table A.7: Industry allocation of STOXX EM and derived STOXX TRU Indices. Date: Mar. 22, 2015.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.8: COUNTRY DEPENDENT AVERAGE SALES EXPOSURES OF STOXX EM COMPANIES TO EMERGING MARKETS

Country	Average Exposure	Weighted Average Exposure	Number of Constituents
Brazil	89.40%	90.80%	77
Chile	82.60%	82.60%	31
China	89.40%	92.50%	131
Colombia	87.50%	88.10%	13
Egypt	96.20%	99.00%	4
Hungary	58.20%	61.30%	4
Indonesia	95.50%	98.40%	39
India	79.20%	85.40%	122
South Korea	76.50%	78.30%	135
Morocco	34.60%	78.90%	5
Mexico	80.40%	85.20%	27
Malaysia	82.10%	84.70%	66
Philippines	93.10%	90.70%	36
Pakistan	95.80%	97.90%	6
Poland	82.40%	88.70%	28
Russia	74.00%	69.70%	28
Thailand	88.50%	91.40%	46
Turkey	80.20%	85.50%	30
Taiwan	58.80%	74.90%	116
South Africa	76.50%	77.20%	74

Source: STOXX

Table A.8: Country averages of revenue exposures to Emerging Markets (un-weighted and weighted by free-float market cap times exposure). Reported period: 2013. Cut-off date: Mar. 22, 2015.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.9: COUNTRY ALLOCATION OR EMERGING MARKET INDICES

Country	STOXX EM	STOXX TRU EM 25%	STOXX TRU EM 50%	STOXX TRU EM 75%	STOXX TRU EM 100%
Brazil	7.60%	5.00%	5.00%	4.80%	11.10%
Chile	1.50%	1.50%	1.50%	1.10%	1.30%
China	23.20%	25.90%	27.40%	32.00%	27.30%
Colombia	0.90%	--	--	--	--
Egypt	0.30%	0.30%	0.40%	0.40%	1.10%
Hungary	0.20%	0.20%	0.10%	0.00%	--
Indonesia	3.20%	3.90%	4.20%	5.00%	6.50%
India	11.60%	11.00%	10.60%	11.30%	12.40%
South Korea	16.10%	14.60%	14.40%	9.10%	1.20%
Morocco	0.10%	0.10%	0.10%	0.00%	0.10%
Mexico	3.20%	3.10%	3.20%	3.30%	6.60%
Malaysia	3.90%	4.00%	4.00%	4.30%	3.90%
Philippines	2.70%	2.30%	2.40%	2.90%	5.10%
Pakistan	0.50%	--	--	--	--
Poland	1.50%	1.70%	1.60%	1.90%	1.60%
Russia	3.40%	4.10%	3.30%	2.50%	2.10%
Thailand	4.40%	4.90%	5.20%	6.00%	6.50%
Turkey	1.50%	1.10%	1.10%	1.20%	0.80%
Taiwan	7.90%	9.10%	8.30%	8.50%	8.10%
South Africa	6.40%	7.40%	7.10%	5.70%	4.40%

Source: STOXX

Table A.9: Country allocation of STOXX EM and derived STOXX TRU Indices. Date: Mar. 22, 2015.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.10: PERFORMANCE, VOLATILITY AND DRAWDOWN OF EURO STOXX AND EURO STOXX TRU INDICES

	EURO STOXX	EURO STOXX TRU 25%	EURO STOXX TRU 50%	EURO STOXX TRU 75%	EURO STOXX TRU 100%
Performance					
2008	-43.66%	-43.89%	-43.37%	-48.24%	-38.93%
2009	30.71%	28.61%	24.12%	25.55%	22.32%
2010	3.76%	0.34%	-3.51%	-8.39%	-9.46%
2011	-14.29%	-16.44%	-18.97%	-23.31%	-13.90%
2012	20.23%	17.29%	14.06%	6.28%	11.22%
2013	24.99%	27.01%	28.40%	31.11%	31.85%
2014	4.49%	4.03%	4.09%	8.09%	17.59%
Volatility					
2008	36.68%	36.36%	35.67%	34.19%	28.74%
2009	25.58%	25.31%	25.15%	23.63%	19.01%
2010	21.51%	21.75%	21.97%	20.92%	19.26%
2011	26.59%	27.32%	28.80%	27.28%	22.99%
2012	18.98%	19.84%	21.60%	21.25%	19.09%
2013	14.23%	14.72%	15.79%	15.73%	13.48%
2014	15.61%	16.47%	17.64%	18.72%	16.71%
Drawdown					
2008	-49.72%	-49.48%	-48.10%	-51.82%	-41.77%
2009	-27.48%	-28.07%	-29.35%	-29.51%	-23.43%
2010	-15.04%	-15.91%	-17.48%	-18.85%	-19.26%
2011	-29.96%	-31.71%	-34.20%	-36.72%	-30.84%
2012	-16.60%	-17.96%	-20.16%	-20.07%	-16.55%
2013	-10.44%	-10.33%	-10.48%	-10.80%	-8.95%
2014	-14.04%	-15.68%	-17.28%	-19.00%	-16.37%

Source: STOXX

Table A.10: Annual performance, volatility and drawdown figures of EURO STOXX Index and derived STOXX TRU Indices. Figures are based on EUR Gross Return Indices. Volatilities are based on daily logarithmic returns. Time period: 2008 to 2014.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

TABLE A.11: PERFORMANCE, VOLATILITY AND DRAWDOWN OF STOXX USA 900 AND STOXX USA TRU INDICES

	STOXX USA 900 Performance	STOXX USA TRU 25%	STOXX USA TRU 50%	STOXX USA TRU 75%	STOXX USA TRU 100%
2008	-35.11%	-34.99%	-36.00%	-32.94%	-30.24%
2009	23.40%	22.70%	23.25%	22.12%	22.42%
2010	18.07%	17.03%	16.50%	16.82%	20.52%
2011	1.75%	2.56%	2.88%	2.68%	6.55%
2012	15.59%	17.09%	19.29%	17.60%	14.10%
2013	32.80%	33.47%	35.01%	31.66%	29.32%
2014	13.12%	14.41%	15.68%	17.65%	17.66%
Volatility					
2008	39.34%	39.99%	40.57%	41.06%	41.31%
2009	26.75%	27.61%	28.39%	28.72%	29.36%
2010	17.93%	18.05%	18.18%	18.21%	17.85%
2011	23.30%	23.09%	22.93%	23.03%	22.04%
2012	12.82%	12.41%	12.20%	11.89%	11.16%
2013	10.92%	10.98%	11.17%	10.95%	10.84%
2014	11.34%	11.14%	11.15%	10.51%	10.10%
Drawdown					
2008	-46.62%	-46.94%	-47.90%	-46.77%	-45.96%
2009	-27.58%	-28.28%	-29.08%	-29.41%	-28.28%
2010	-15.54%	-15.60%	-15.62%	-15.50%	-14.38%
2011	-19.63%	-19.02%	-18.66%	-18.94%	-17.90%
2012	-10.01%	-8.89%	-8.33%	-7.61%	-7.77%
2013	-5.79%	-5.82%	-5.75%	-5.92%	-6.11%
2014	-7.63%	-7.15%	-6.98%	-6.12%	-5.96%

Source: STOXX

Table A.11: Annual performance, volatility and drawdown figures of STOXX USA 900 index and derived STOXX TRU Indices. Figures are based on USD Gross Return Indices. Volatilities are based on daily logarithmic returns. Time period: 2008 to 2014.

STOXX TRU INDICES - UN-LIMIT THE TRUE POTENTIAL OF YOUR ASSET ALLOCATION

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www.stoxx.com

CONTACTS

Selnaustrasse 30
CH-8021 Zurich
P +41 (0)58 399 5300
stoxx@stoxx.com
www.stoxx.com

Frankfurt: +49 (0)69 211 13243
Hong Kong: +852 6307 9316
London: +44 (0)20 7862 7680
Madrid: +34 (0)91 369 1229
New York: +1 212 669 6426
Singapore: +65 9189 7970
Tokyo: +81 3 5847 8248

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