Quantitative Monographs
Investing in Growth

Equities

Global Quantitative

Paul Winter
Analyst
paul-j.winter@ubs.com
+61-2-9324 2080

Oliver Antrobus, CFA
Analyst
oliver.antrobus@ubs.com
+61-3-9242 6467

David Jessop
Analyst
david.jessop@ubs.com
+44-20-7567 9882

Josh Holcroft
Analyst
josh.holcroft@ubs.com
+852-2971 7705

Shanle Wu
Analyst
shanle.wu@ubs.com
+852-2971 7513

Pieter Stoltz
Analyst
pieter.stoltz@ubs.com
+61-2-9324 3779

Luke Brown
Analyst
luke.brown@ubs.com
+61-2-9324 3620

Sebastian Lancetti, CFA
Analyst
sebastian.lancetti@ubs.com
+1-203-719 4045

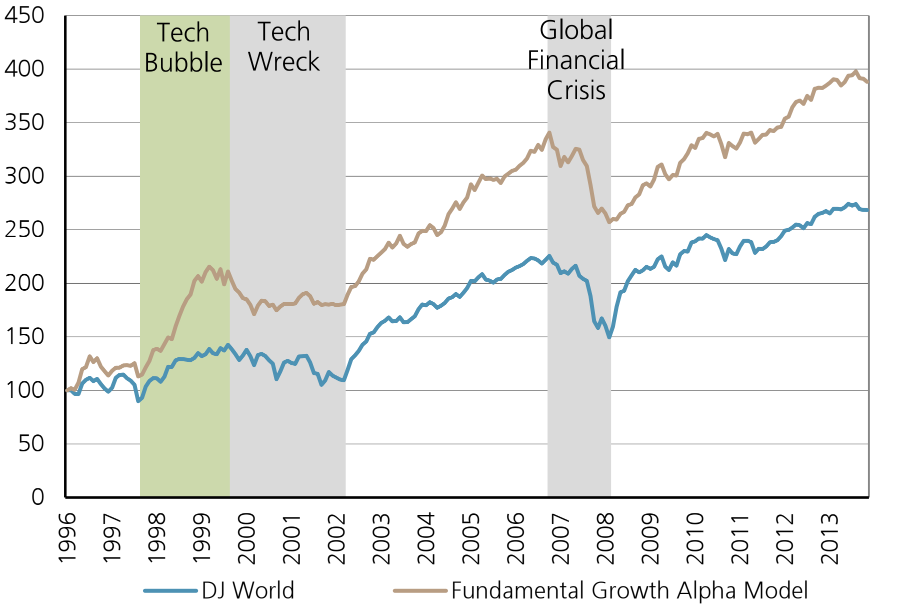
Why does Growth matter right now?
In a world of low growth, stocks that can deliver growth or alternately can drive earnings through productivity enhancements are likely to outperform.

How do we identify Growth?
Growth stocks are best selected using fundamental metrics in conjunction with momentum and valuation to create a 'Growth' strategy.

The Fundamental Growth model
The Fundamental Growth model employs fundamental factors that underpin earnings growth. We use profitability, growth, and sustainability metrics.

Performance
The Fundamental Growth model has demonstrated an excess return of 6.7% p.a. with volatility of 13.7% and a hit-rate of 59% since 31 Dec 1996.

Figure 1: Fundamental Growth Alpha model vs DJ World (equal weighted)



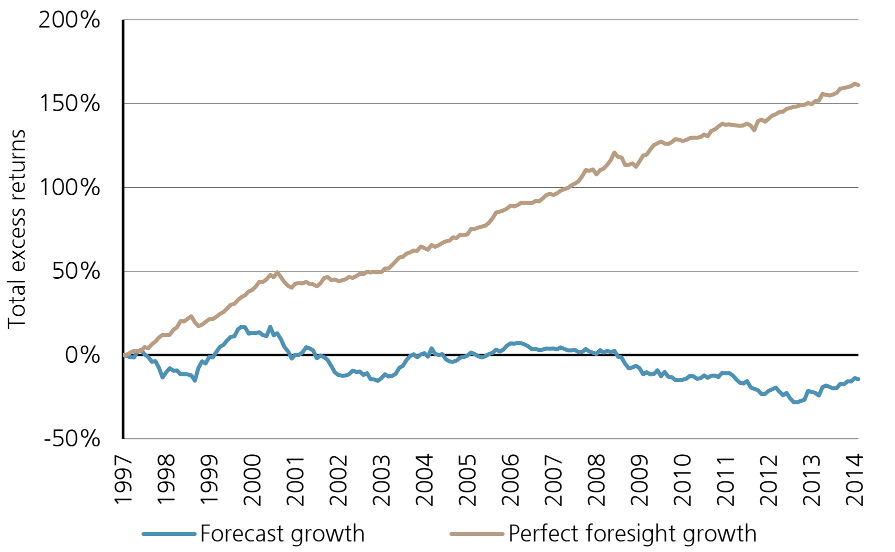
Source: Thomson Reuters,UBS, Universe: DJ Developed World Portfolio: 50 stocks equal weighted

Introduction

If you had perfect foresight and could invest in companies with the best one and two year growth rates you would have achieved an average of 9.4% p.a. excess return over the past seventeen years. Unfortunately, if you listened to consensus as to which companies were likely to grow, you would have lost an average of 1% p.a.

If you had perfect foresight and could invest in companies with the best growth rates you would have achieved an average of 9.4% p.a. excess return over the past seventeen years.

Figure 2: Perfect foresight growth versus Consensus forecast growth



Source: UBS, IBES Universe: MSCI World

So how do we identify good growth stocks?

We review the work of Martin Zweig, Peter Lynch and James O'Shaughnessy as well as some of the more recent factor models developed by Partha Mohanram and Joseph Piotroski in order to develop a model that identifies stocks with good earnings growth that is sustainable.

Ultimately, we formulate the Fundamental Growth model which employs fundamental factors across profitability, growth, and sustainability metrics that underpin earnings growth. The next step is to identify companies where the fundamental thesis is confirmed by the market. This can be achieved by combining fundamentals with momentum, i.e. looking for strong price and earnings momentum. Finally, we eliminate stocks which are overvalued.

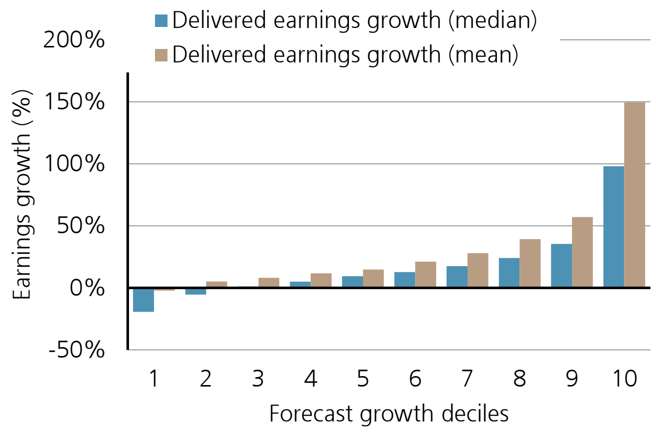
Since 1997, the Fundamental Growth strategy has delivered an excess return of 6.7% p.a. with 13.7% volatility and a hit rate of 59%.

So how do we identify growth?

As we noted earlier, companies that grow their earnings tend to outperform. Unfortunately, listening to consensus forecast growth didn't help you in your quest.

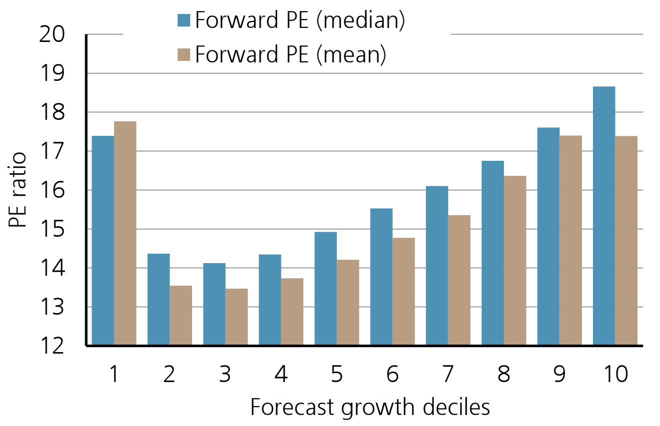
Why doesn't forecast earnings growth work? Whilst companies with the highest forecast earnings growth rates tend to deliver high growth (Figure 3), they tend to reflect the forecast growth rate in their valuations (see Figure 4).

Figure 3: Forecast v actual delivered earnings growth



Source: UBS, IBES

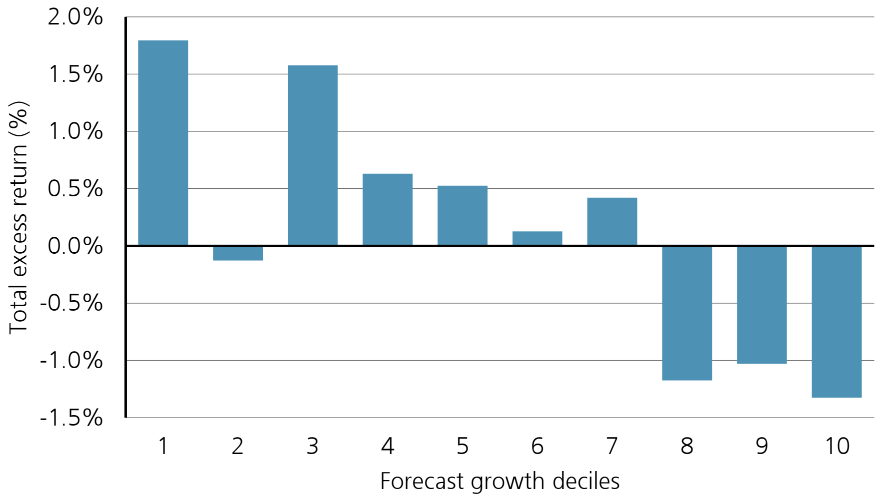
Figure 4: Valuation of forecast earnings growth



Source: UBS, IBES

As a consequence, despite the fact that companies with high forecast earnings growth tend to deliver on that growth, stocks with the highest forecast earnings growth rates tend to underperform.

Figure 5: Forecast earnings growth and excess returns



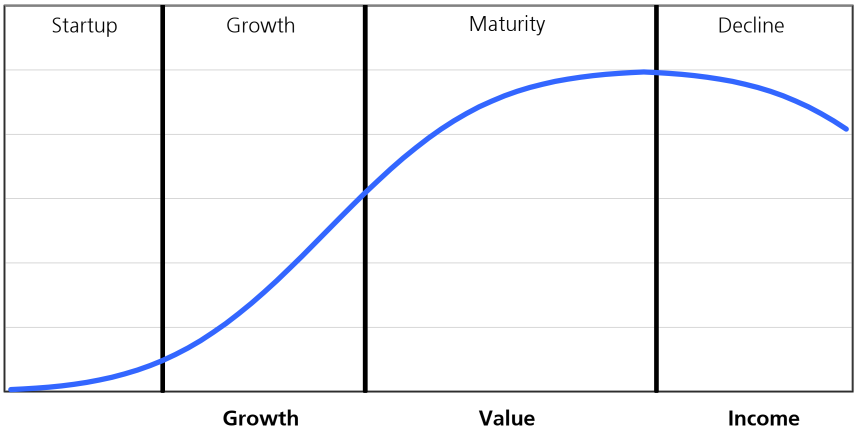
Source: UBS , IBES

What should we look for?

What are growth companies?

In order to develop a Growth model we first need to define what we are looking for. Ultimately, we want to pick companies with the best earnings growth rates that are sustainable.

Figure 6: Company lifecycle



Source: UBS

From a company lifecycle perspective, we look for companies that have passed through the initial startup phase and have begun to grow. However, we want to be out of them before they move into the maturity phase. This is the point at which competition begins to erode margins and the most profitable opportunities have been exploited. This is typically the point at which the company moves from being a good growth opportunity to being a relative value play. Finally, as the opportunity for the organisation is fully exploited, the company typically moves from being a value play to an income opportunity. Of course in reality organisations tend to re-invent themselves as they refocus on profitable growth segments of the market at any point in the cycle.

Where do the returns come from?

There are two theoretical contributors to the returns of a growth strategy, the rationalist argument of returns from style migration [1] and the behaviourist argument that style risk is not rationally priced in the market[2]. Both arguments hold merit as the rationalists are focussed on changes in earnings through the cycle whilst the behavioural argument looks at the valuation of companies through the cycle.

Theoretical contributors to the returns of a growth strategy: the rationalist argument of returns from style migration, and the behaviourist argument that style risk is not rationally priced in the market

Style migration: Why sustainable growth is critical?

"It has been shown that a value portfolio manager profits from the improvement in style category of the stocks that make up the initial portfolio. In other words, the value premium starts to materialise when value stocks begin a migration

[1] Fama and French 2007, Jessop et al, 'Understanding Style Migration' 2008
[2] Barberis and Shleifer, 2003. Piotroski, 2011

towards the growth category. This result is in line with the intuition that a value screen identifies distressed companies which will eventually restructure (or face less pressure from the competition) and return to equilibrium profitability levels."[3]

The opposite is true of growth portfolios where the returns to a growth strategy are largely due to companies that can sustain their growth whilst companies with unsustainable growth migrate towards the value category and as a result detract from returns. The economic rationale for this is that over time the most profitable opportunities are exploited and/or the firms' advantage is eroded due to increased competition.

The returns to a growth strategy are largely due to companies that can sustain their growth whilst companies with unsustainable growth migrate towards the value category and as a result detract from returns

Value versus growth: a mispricing effect?

The performance of value and growth stocks results from the reversal of previous valuation errors. In other words, the market over- or under-reacts to past performance and subsequently corrects when it receives earnings confirmation[4]. As a result, value stocks have a higher proportion of over-sold stocks whilst growth stocks have a higher proportion of over-bought stocks causing value stocks to outperform and growth stocks to underperform.[5]

For this reason, the success of a growth strategy largely depends on not overpaying for growth.

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[3] Jessop et al, 'Understanding Style Migration' 2008
[4] Lakonishok, Shleifer and Vishny, 1994
[5] Winter et al, 'Styles through the cycle' 2011

What do fundamental growth managers look for?

We assess some of the strategies employed by good growth managers such as Martin Zweig, Peter Lynch and James O'Shaughnessy as well as some of the more recent factor models developed by Partha Mohanram and Joseph Piotroski in order to develop a model that identifies stocks with sustainable earnings growth.

Martin Zweig

Martin Zweig focuses on high growth companies that are conservatively run. The net effect of his screening is to pick companies that are consistently high growth, accelerating and sustainable, with relatively low levels of debt and relatively inexpensive. Importantly though Zweig also uses a number of momentum and technical indicators to time entry and exit points in the market.

One of Zweig's key messages is that you should not buy into a growth company until it has demonstrated its growth through price action in the market.

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Key criteria:

Growth:	Earnings growth >15% p.a.
	Sales growth in line with earnings growth
Earnings growth stability:	Earnings growth persistent over 3 years
	Earnings growth accelerating in latest quarter
Capital structure:	Debt/Equity < industry median
Valuation:	PE > 5 and < 1.6 x sector average
Management signalling:	Net insider buying > 0

Management should not have overestimated earnings in the past 3 years

Peter Lynch

Peter Lynch is famous for his "Buy what you know" approach to investing, with a preference for small, fast growing, and aggressive firms.

Peter Lynch is famous for his "Buy what you know" approach to investing

Key criteria:

Growth:	Earnings growth >15% and < 30% p.a.
Capital structure:	Debt/Equity < 25%
Market cap:	Market cap < $2 bn
Valuation:	PEG < 1
	PE < industry median and < 5 year average
Institutional ownership:	Institutional ownership < 50%
Management signalling:	Net insider buying > 0

Exclude all financials.

James O'Shaughnessy

James O'Shaughnessy focussed on what he called the 'united cornerstone' strategy, a combination of his 'cornerstone growth' and 'cornerstone value' strategies.

James O'Shaughnessy focussed on what he called the 'united cornerstone' strategy

Key criteria for 'cornerstone growth' are:

- Earnings growth > 0 for the past 5 years
- Price to sales < 1.5
- Rank by 12 month price momentum

Conclusions from fundamental growth managers

The key conclusions from the review of fundamental growth managers are that they all targeted high earnings and/or sales growth, growth stability, momentum and valuation.

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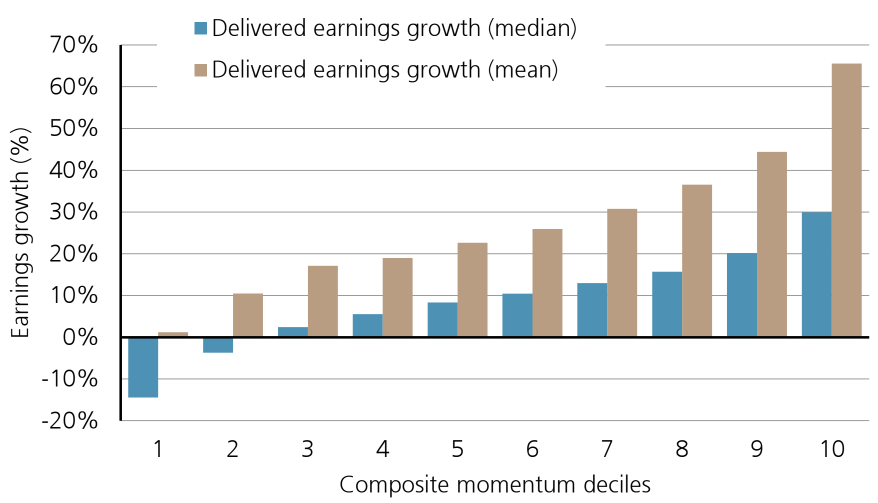
The questions this raises are: does momentum forecast earnings growth? And does growth come at a price, or rather, do expensive stocks have better earnings growth rates?

The Figure 7 below highlights that **momentum does in fact forecast earnings growth** rates as high momentum stocks (decile 10) have higher subsequent earnings growth rates, whilst low momentum stocks (decile 1) have falling subsequent earnings growth rates.

Figure 7: Realised earnings growth rates across composite momentum quintiles

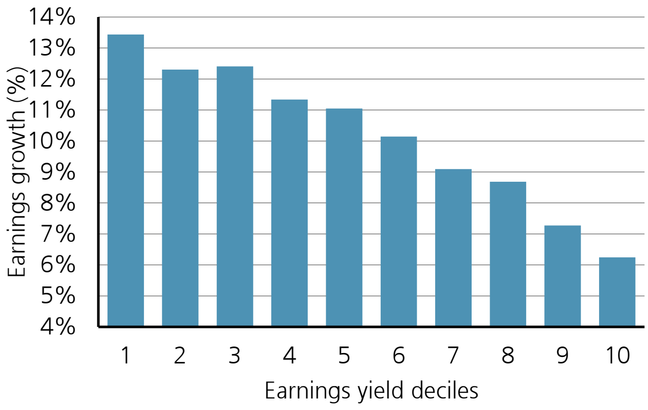


Source: UBS, Thomson Reuters, IBES

In order to assess whether expensive stocks have better earnings growth rates than cheap stocks, we test the market using Earnings Yield (sector neutral). We find that the market seems to do a good job of valuing earnings growth with the cheapest companies (decile 10) displaying low earnings growth rates, whilst companies on higher valuations display better earnings growth rates.

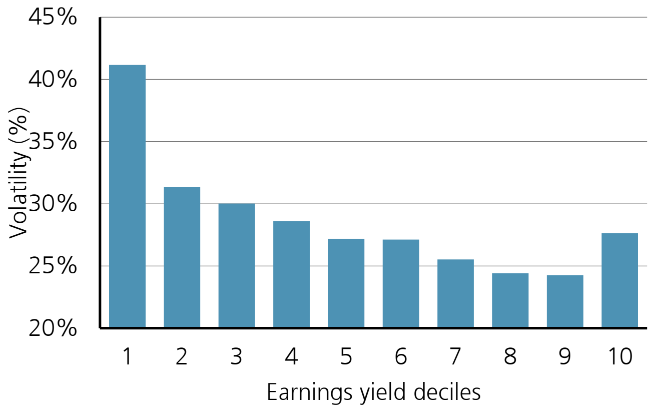
Importantly though these higher valuations are commensurate with higher levels of price volatility. As a consequence, the stability of earnings growth will matter in the final definition of our model.

Figure 8: Realised earnings growth rates across EY deciles



Source: UBS, Thomson Reuters, IBES

Figure 9: Subsequent volatility across EY deciles



Source: UBS, Thomson Reuters, IBES

Key lessons from fundamental growth managers

- Focus on high growth that is sustainable
- Momentum is a good forecaster of future earnings growth
- Valuation matters, don't overpay for growth.

More recent factor models

More recently, Joseph Piotroski published a paper entitled 'Value investing: The use of historic financial statement data to separate winners from losers'. The key message here was that we could utilise a set of basic financial ratios designed to measure a company's profitability, liquidity, solvency, and operating efficiency to determine the relative quality of the balance sheet. This model works particularly well in separating winners from losers in the value space.

In 2005 Partha Mohanram came up with a similar model in his paper "Separating Winners from Losers Among Low Book-to-Market Stocks using Financial Statement Analysis" designed to identify growth stocks with a likelihood of continued growth in assets, sales and profits relative to other companies within their industry.

Mohanram G-score

As with the Piotroski F-score, the model is based on the attributes a theoretically strong growth company should exhibit. The model looks at profitability, variance in profitability and signals designed to measure the firms' investment in its own future.

Figure 10: Piotroski F-Score and Mohanram G-Score

Piotroski	Mohanram
ROA > 0	ROA > industry median
Change in ROA > 0	Cashflow from operations to assets > industry median
Cashflow from operations to assets > 0	Accruals: Cashflow from operations / Net income > industry median
Accruals: Cashflow from operations > Net income	Standard dev. Net Income < industry median
Current ratio > previous	Standard dev. Sales growth < industry median
Long term debt < previous	R&D / assets > industry median
Asset Turn: Sales/Assets > previous	Advertising / assets > industry median
Gross margins > previous	Capex / assets > industry median
Equity issuance < 0	

Source: UBS

Drawbacks

There are a number of drawbacks to the Mohanram G-score as it currently stands:

(1) The G-score is not equally applicable across sectors (R&D, advertising and capex expenditure).

(2) The economics gains are not symmetric, with most of the return coming from the short side. That is, the strength lies in the avoidance of growth stocks that will not meet expectations as opposed to picking those that will.

(3) Metrics constructed are relative to an industry benchmark. As a result there is a risk that we could be comparing companies that are not comparable due to simplistic industry classification.

Overcoming the drawbacks

We overcome these drawbacks by assessing each signals merits for inclusion in the model.

(1) We eliminate signals for R&D, Advertising and Capex as we do not have consistent data for them and they are not comparable across sectors.

(2) We combine the Piotroski F-score metrics that are relevant for growth stocks with the Mohanram G-score metrics that are comparable across sectors to create a model with more symmetric economic gains.

(3) As there are drawbacks to comparing companies across sectors we consider metrics within sectors.[6]

[6] Solimon 2004

The Fundamental Growth model

In order to build our Fundamental Growth Alpha model, we go back to the wisdom of Martin Zweig, Peter Lynch and James O'Shaughnessy.

1. Start with good quality companies that are outperforming their competition,
2. check that the company has demonstrated its growth through price action in the market, and finally,
3. don't overpay for growth.

In order to build our Fundamental Growth Alpha model, we start with our Fundamental Growth screen, combine it with momentum, and eliminate overvalued stocks by removing stocks which our UBS Research Team have on a Sell recommendation.

The Fundamental Growth model

Ultimately, a growth model needs to identify not only companies with sustainable growth, but also companies with a higher likelihood of a growth related torpedo event. As a result we construct the Fundamental Growth model by using factors from the original Piotroski F-score that are relevant for growth companies and combining them with factors from the Mohanram G-score which are comparable across sectors.

The final model assesses:

- profitability and cashflows to assess the ability of the firm to grow organically,
- accrual adjustments,
- growth rates to ensure the company is performing better than its peers,
- growth stability to ensure the growth is sustainable,
- asset turn to ensure growth is efficient,
- margins to ensure either an increase in the firms pricing, or an improvement in factor costs,
- management signalling to assess the views on equity valuation.

We continue to use a binary scoring model to ensure comparability across industries, and use GICS level 1 sectors for industry comparisons. The result is a model which assesses a company's profitability, growth, growth stability, efficiency and management signalling through equity issuance / buybacks.

Figure 11: Fundamental Growth Signals

Profitability	Fundamental Growth
Operating cash-flow	>0
Cash-flow to assets	> ind med
Cash Flow Variation	> ind med
Change in cash-flow to assets	> ind med
Gross profit to assets	> ind med
Change in gross profit to assets	> ind med
Return on assets	> ind med
Change in return on assets	> ind med
ROA variation - sector neutral	< ind med
Accruals (Sloan definition)	< ind med
Change in accruals	< ind med
Financial health	
Change in Current Ratio	> ind med
Debt to Assets - sector neutral	< ind med
Efficiency	
Sales growth	>0
Change in Sales to Assets	> ind med
Gross margins	> ind med
Change in gross margins	> ind med
Management signalling	
Equity issuance	< ind med
Risk	
Distance to Default	>4
Volatility	< ind med

Source: UBS

Methodology:

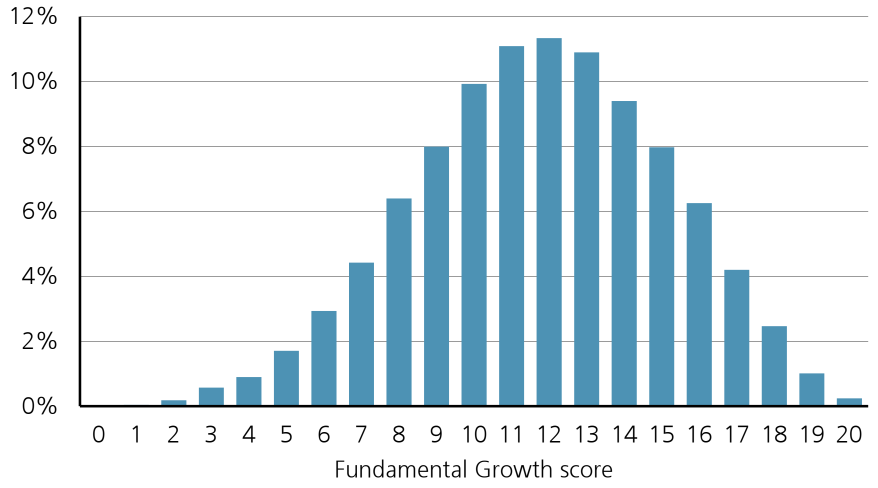
All charts in the body of the report refer to MSCI World as our benchmark. Regional results are in the appendices. Testing is done using the MSCI World benchmark, with the exception of Asia where we use MSCI AC Asia ex Japan, and Australia where we use the ASX 200.

All tests are based on equal weighted quintiles against an equal weighted benchmark in US Dollars unless otherwise stated. Decile 10 is defined as ‘desirable’ and decile 1 as ‘undesirable’. With respect to Value, decile 10 is cheap and decile 1 expensive.

The Results

Before we look at the results we must point out that using this approach yields the below distribution of scores. Clearly, we are interested in those that score particularly well (scores 14 to 20 which equates to the top third of the distribution) or particularly poorly (scores 0 to 9 which equates to the bottom third).

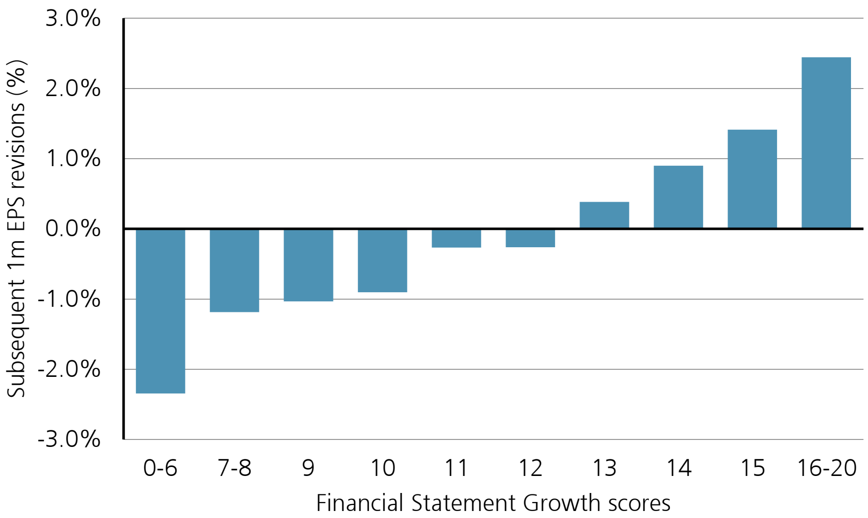
Figure 12: Distribution of stocks by Fundamental Growth score



Source: UBS, Thomson Reuters

We have conducted a back-test against the MSCI World (1997 to 2014). Firstly, companies that score well tend to demonstrate solid earnings revisions over the twelve months following score formation (that is, post their annual reporting date).

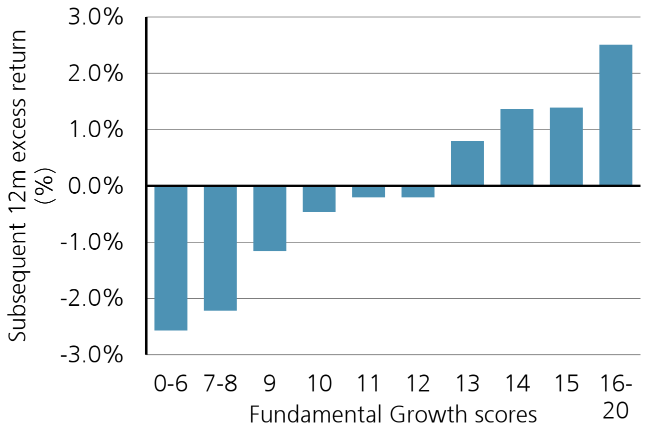
Figure 13: Subsequent earnings revisions by Fundamental Growth score



Source: UBS, Thomson Reuters

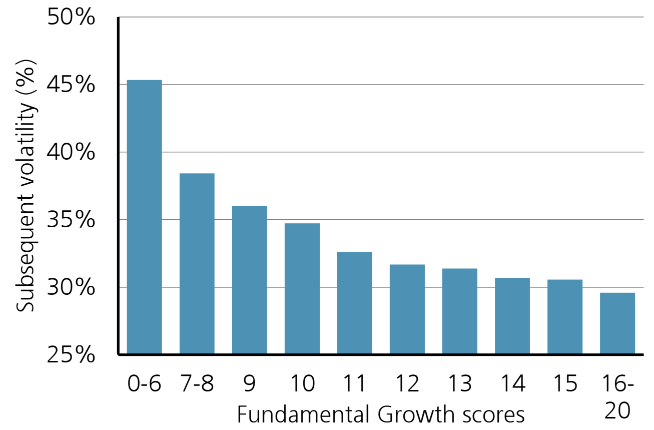
In line with this increase in earnings, high Fundamental Growth companies also tend to perform very well on a total return basis. Importantly though, high Fundamental Growth companies are less volatile. We find that as companies decrease in growth score, they tend to increase in volatility, exponentially. As a result, a portfolio that focuses on growth through the cycle should outperform on a total return basis and should do so with lower volatility.

Figure 14: Total excess return by Fundamental Growth



Source: UBS, Thomson Reuters

Figure 15: Volatility by Fundamental Growth score



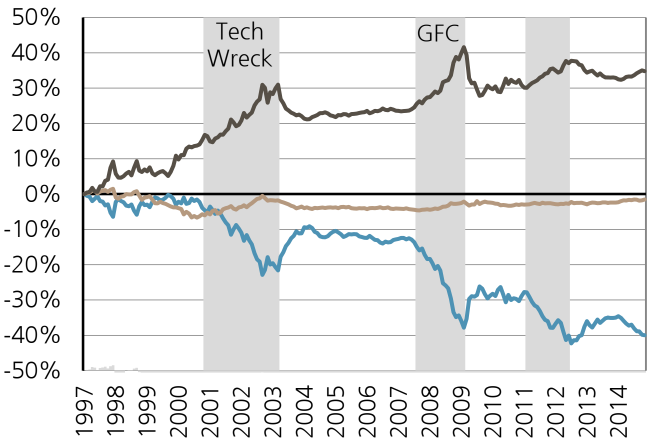
Source: UBS, Thomson Reuters

Through the cycle

Growth as a style tends to outperform when lead indicators are falling, earnings growth rates slowing and the yield curve is flattening out. As a result, growth outperformed significantly during the Tech wreck from 2000 to 2003, again during the GFC 2007 to 2009, during the mid-cycle slowdown in 2011/12, and finally has picked up in performance over the past ten months. Fortunately for the Fundamental Growth model there are no significant draw-downs during the 'recovery' and 'expansion' phases of the cycle.

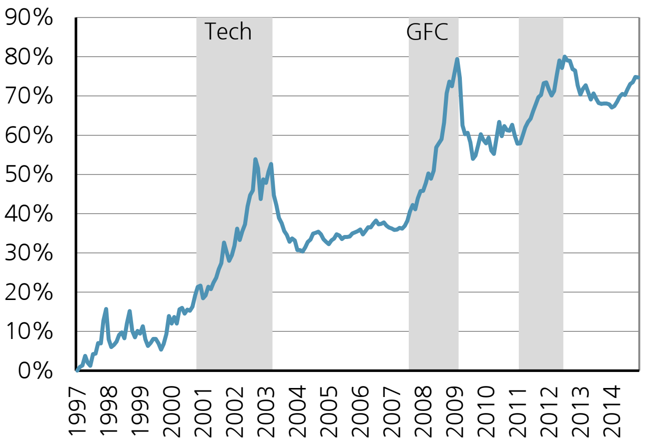
Growth as a style tends to outperform when lead indicators are falling, earnings growth rates slowing and the yield curve is flattening out.

Figure 16: Cumulative excess returns: Low, Mid and High Fundamental Growth



Source: UBS, Thomson Reuters

Figure 17: Cumulative excess returns: High – Low Fundamental Growth

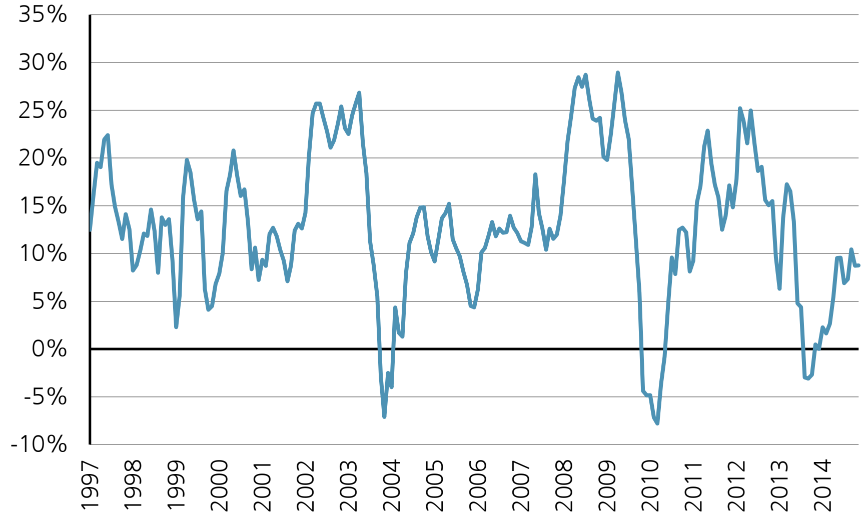


Source: UBS, Thomson Reuters

How does Fundamental Growth compare to Quality or Momentum?

One concern in combining our Fundamental Growth model with Momentum is that our two factors may in fact be simply doubling up on the same factor bet. Whilst we find that Fundamental Growth and Momentum are indeed positively correlated, the rank correlation is relatively low – averaging just 13% over time. Notably, the rank correlation tends to break down at turning points when the market bounces post a downturn.

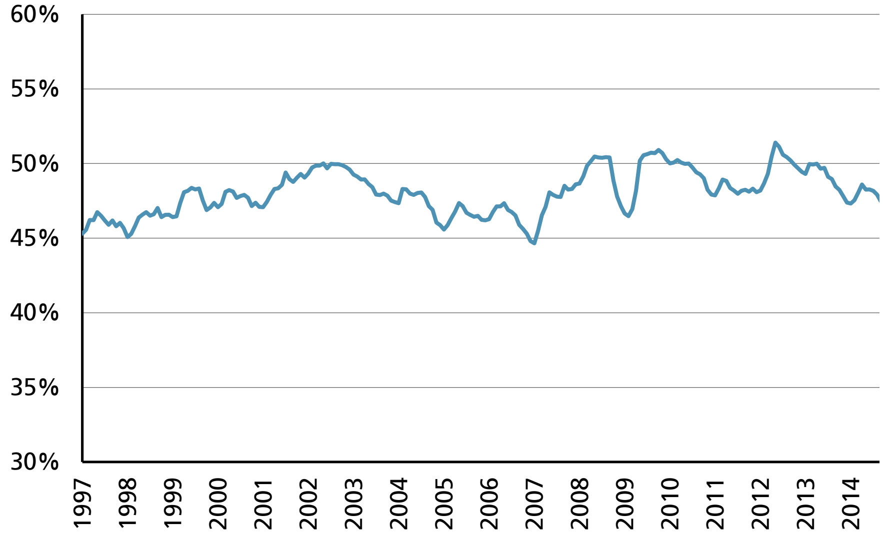
Figure 18: Rank correlation of Fundamental Growth and Momentum



Source: UBS, Thomson Reuters

On the other hand the rank correlation with Quality averages 48% through time and is relatively stable. This is encouraging as it highlights that the Model is picking up on good quality growth companies rather than speculative growth.

Figure 19: Kendal Tau correlation coefficient of Fundamental Growth and Quality



Source: UBS, Thomson Reuters

Combining the Factors

Assessing the performance across Fundamental Growth and Momentum highlights the improvement achieved in combining the strategies.

Figure 20: Intersection analysis of Fundamental Growth and Momentum

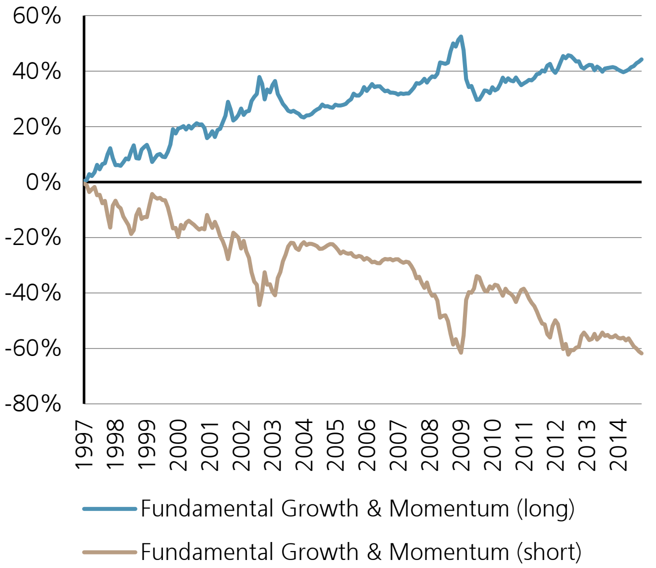
Direction	Strategy	Total excess return	Risk	Information ratio	T-statistic	Hit rate
Long Only	High Fundamental Growth	1.9%	4.2%	0.46	1.96	58.1%
	Low Fundamental Growth	-2.2%	4.5%	-0.49	-2.08	40.5%
Long Only	High Fundamental Growth & Momentum	2.5%	6.5%	0.38	1.61	59.5%
	Low Fundamental Growth & Momentum	-3.4%	8.7%	-0.39	-1.67	39.1%

Direction	Strategy	Total excess return	Risk	Sharpe	T-statistic	Hit rate
Long/short	Fundamental Growth	4.2%	8.5%	0.49	2.07	60.0%
Long/short	Fundamental Growth & Momentum	5.9%	14.8%	0.40	1.69	60.5%

Source: UBS, Thomson Reuters Note: Hit rate is measured against an equal weighted benchmark

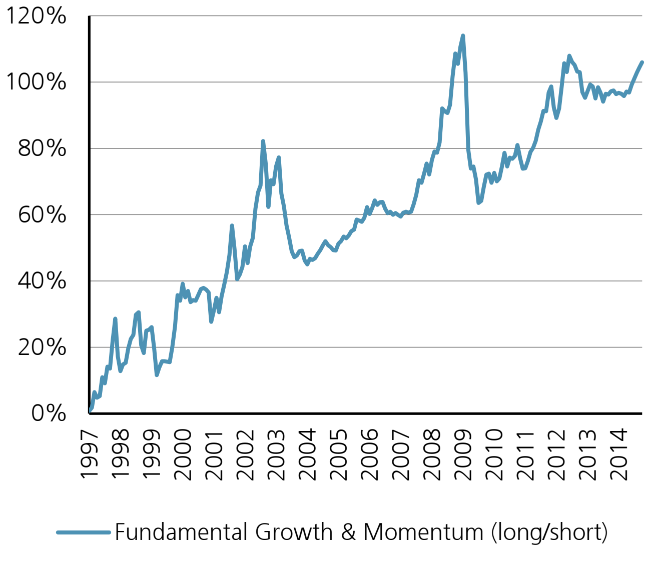
We combine the Fundamental Growth model with Momentum using simple intersection analysis. That is the intersection of the top third and bottom third of each factor. Overall, the model performs fairly consistently within expansionary phases of the market, and exhibits its strongest performance during periods of market weakness. The model does suffer in the early stages of a market rebound eg Q2 2003 and Q2 2009.

Figure 21: Fundamental Growth & Momentum (long and short)



Source: UBS, Thomson Reuters

Figure 22: Fundamental Growth & Momentum (long/short)



Source: UBS, Thomson Reuters

Finally, we overlay our UBS Research recommendations in order to eliminate the prospect of overpaying for growth.

Figure 23: Fundamental Growth and UBS Research Sell recommendations

Fundamental Growth	UBS Research	Total excess return	Volatility
High	Sell	-1.6%	29.5%
Neutral	Sell	-2.3%	32.7%
Low	Sell	-3.1%	41.2%

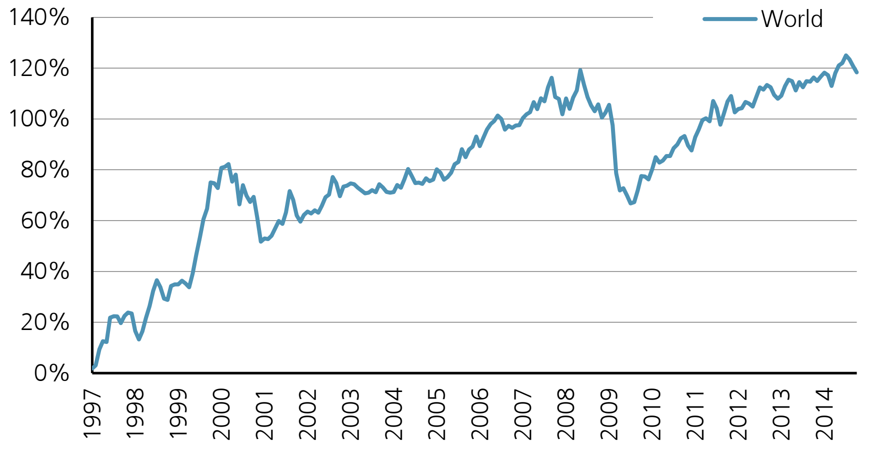
Source: UBS, Thomson Reuters

Note: UBS Research recommendations are applied from January 2000 onwards.

Model Performance

Finally, we build a portfolio of the Top 50 stocks across the Dow Jones World universe. We use an expanded universe in order to capture some of the smaller growth names before they become large caps. The model historically picked up on Apple in 2004, Google in 2005, Coloplast in 2001, and Celgene in 2005. Overall, the model has performed well, however, it suffered a significant underperformance during the first half of 2009 as the market rebounded. During this period both the Fundamental Growth scores and Momentum both underperformed.

Figure 24: Fundamental Growth model - World



Source: Thomson Reuters,UBS

Assessing the performance of the model by region highlights that the model seems to work well in all regions with the exception of Japan and the US where the model's performance is less consistent.

Figure 25: Performance of the Top 20 stocks by region

Strategy	Total excess return	Risk	Information ratio	T-statistic	Hit rate
World	6.7%	13.7%	0.49	1.74	0.59
North America	3.6%	15.7%	0.23	0.97	0.52
Europe	7.6%	11.4%	0.66	2.81	0.64
Asia ex-Japan (MSCI AC Asia ex-Japan)	7.1%	16.9%	0.42	1.78	0.58
Japan	2.8%	14.4%	0.19	0.82	0.53
Australia (ASX 200)	16.0%	16.1%	1.00	4.22	0.69

Source: Thomson Reuters,UBS

Conclusion

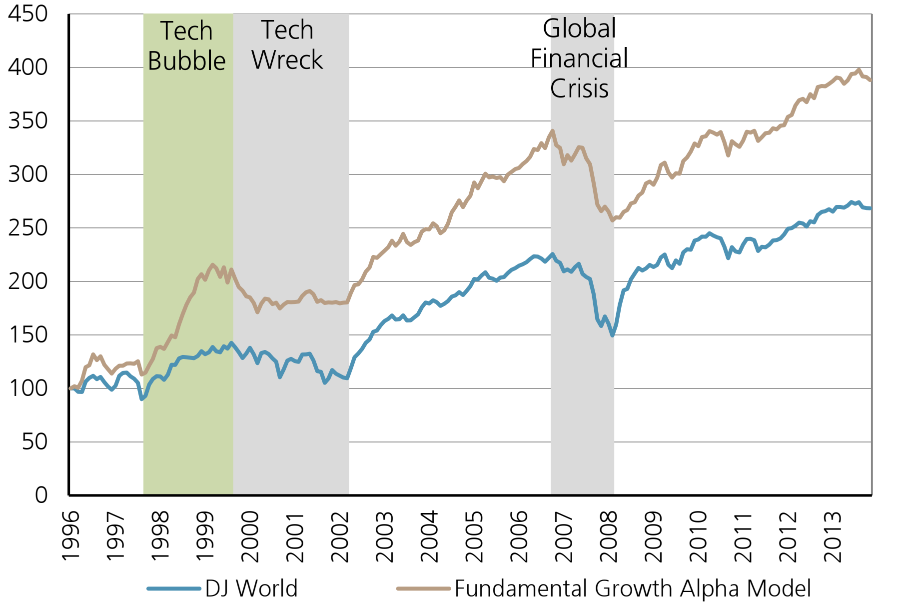
Why does growth matter right now?

Growth has been outperforming over the past year. We expect this trend to continue in the short term as global growth is downgraded. More broadly, we expect Growth to continue its outperformance as we progress through the de-levering phase of the credit bubble.

How do we pick growth?

Overall, we find that our model using financial statement items designed to pick companies that are outperforming their competitors works well at identifying future earnings growth. The resultant portfolio achieves an excess return of 4.2% p.a. Notably, this return can be significantly improved by combining the model with momentum to create a typical 'Growth' strategy which historically has outperformed the market by 6.7% per annum.

Figure 26: Fundamental Growth Alpha model vs DJ World (Total return, equal weighted)



Source: Thomson Reuters,UBS, Universe: DJ Developed World

Appendix: Stock lists by region

Figure 27: Top 10 stocks by region

Sedol	Bloomberg	Company	Sector	Country	Fundamental Growth score	Momentum decile
North America						
2831543	LUV.UN	SOUTHWEST AIRLINES CO	Industrials	United States	17	10
2961053	SWKS.UW	SKYWORKS SOLUTIONS INC	Information Technology	United States	16	10
B6X2H81	MNST.UW	MONSTER BEVERAGE CORP	Consumer Staples	United States	16	10
2017213	AGN.UN	ALLERGAN INC	Health Care	United States	14	10
2427599	FFIV.UW	F5 NETWORKS INC	Information Technology	United States	19	10
2567116	EW.UN	EDWARDS LIFESCIENCES CORP	Health Care	United States	14	10
B7TL820	FB.UW	FACEBOOK INC-A	Information Technology	United States	17	10
BKQVM44	GMCR.UW	KEURIG GREEN MOUNTAIN INC	Consumer Staples	United States	12	10
2613990	ILMN.UW	ILLUMINA INC	Health Care	United States	13	10
B1BJSL9	HBI.UN	HANESBRANDS INC	Consumer Discretionary	United States	16	10
Europe						
5980613	GIVN.VX	GIVAUDAN-REG	Materials	Switzerland	19	10
B1WGG93	GEBN.VX	GEBERIT AG-REG	Industrials	Switzerland	20	10
B1JB4K8	SY1.GY	SYMRISE AG	Materials	Germany	18	10
B8FMRX8	COLOB.DC	COLOPLAST-B	Health Care	Denmark	18	9
BHC8X90	NOVOB.DC	NOVO NORDISK A/S-B	Health Care	Denmark	18	9
BG3FC18	NUM.FP	NUMERICABLE-SFR	Consumer Discretionary	France	10	10
B39J2M4	UU/.LN	UNITED UTILITIES GROUP PLC	Utilities	UK	16	10
B2QKY05	SHP.LN	SHIRE PLC	Health Care	UK	13	10
B0744B3	BNZL.LN	BUNZL PLC	Industrials	UK	17	9
5723777	REE.SQ	RED ELECTRICA CORPORACION SA	Utilities	Spain	14	10
Asia ex-Japan						
6451668	3008.TT	LARGAN PRECISION CO LTD	Information Technology	Taiwan	19	10
B071G30	3474.TT	INOTERA MEMORIES INC	Information Technology	Taiwan	16	10
B15SK50	090430.KP	AMOREPACIFIC CORP	Consumer Staples	South Korea	14	10
B4X3RF7	460.HK	SIHUAN PHARMACEUTICAL HLDGS	Health Care	Hong Kong	17	10
6702634	ARBP.IS	AUROBINDO PHARMA LTD	Health Care	India	12	10
6579010	598.HK	SINOTRANS LIMITED-H	Industrials	Hong Kong	12	10
B6WY993	867.HK	CHINA MEDICAL SYSTEM HOLDING	Health Care	Hong Kong	14	10
6099723	BPCL.IS	BHARAT PETROLEUM CORP LTD	Energy	India	14	10
6919519	URC.PM	UNIVERSAL ROBINA CORP	Consumer Staples	Philippines	18	9
B29ZGV2	051600.KP	KEPCO PLANT SERVICE & ENGINE	Industrials	South Korea	16	10
Japan						
6642406	6479.JT	MINEBEA CO LTD	Industrials	Japan	18	10
6146500	6448.JT	BROTHER INDUSTRIES LTD	Information Technology	Japan	18	10
6648891	4661.JT	ORIENTAL LAND CO LTD	Consumer Discretionary	Japan	18	10
B60DQV3	2269.JT	MEIJI HOLDINGS CO LTD	Consumer Staples	Japan	15	10
6804820	7309.JT	SHIMANO INC	Consumer Discretionary	Japan	16	10
6747204	6963.JT	ROHM CO LTD	Information Technology	Japan	16	10
6250542	4202.JT	DAICEL CORP	Materials	Japan	17	10
6610403	6981.JT	MURATA MANUFACTURING CO LTD	Information Technology	Japan	20	10
6640507	4612.JT	NIPPON PAINT HOLDINGS CO LTD	Materials	Japan	13	10
6405870	6965.JT	HAMAMATSU PHOTONICS KK	Information Technology	Japan	18	9

Source: UBS, Thomson Reuters

Figure 28: Top 10 stocks by region (continued)

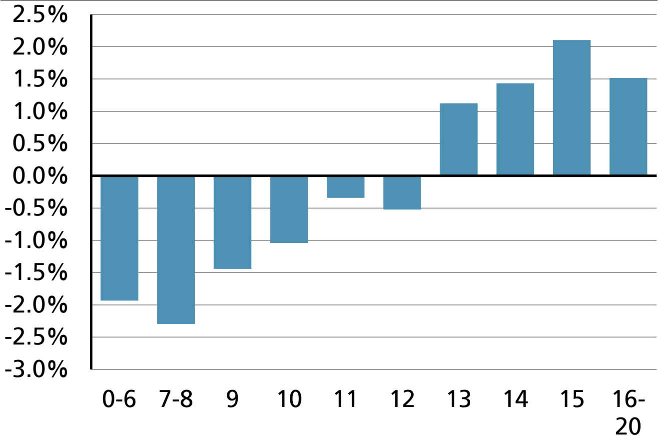
Sedol	Bloomberg	Company	Sector	Country	Fundamental Growth score	Momentum decile
Australia						
6286008	SRX.AT	SIRTEX MEDICAL LTD	Health Care	Australia	17	10
6261243	WSA.AT	WESTERN AREAS LTD	Materials	Australia	15	10
6068574	APN.AT	APN NEWS & MEDIA LIMITED	Consumer Discretionary	Australia	13	10
6512004	LLC.AT	LEND LEASE GROUP	Financials	Australia	18	9
B1WW141	SGH.AT	SLATER & GORDON LTD	Consumer Discretionary	Australia	18	10
6439567	IGO.AT	INDEPENDENCE GROUP NL	Materials	Australia	18	9
6351876	TPM.AT	TPG TELECOM LTD	Telecommunication Services	Australia	12	10
6954985	AWC.AT	ALUMINA LTD	Materials	Australia	14	10
6161503	CTX.AT	CALTEX AUSTRALIA LTD	Energy	Australia	14	10
B15F6S6	CHC.AT	CHARTER HALL GROUP	Financials	Australia	18	9
Emerging markets						
6451668	3008.TT	LARGAN PRECISION CO LTD	Information Technology	Taiwan	19	10
B071G30	3474.TT	INOTERA MEMORIES INC	Information Technology	Taiwan	16	10
B15SK50	090430.KP	AMOREPACIFIC CORP	Consumer Staples	South Korea	14	10
B4X3RF7	460.HK	SIHUAN PHARMACEUTICAL HLDGS	Health Care	China	17	10
6588577	TKG.SJ	TELKOM SA SOC LTD	Telecommunication Services	South Africa	15	10
6702634	ARBP.IS	AUROBINDO PHARMA LTD	Health Care	India	12	10
6579010	598.HK	SINOTRANS LIMITED-H	Industrials	China	12	10
B6WY993	867.HK	CHINA MEDICAL SYSTEM HOLDING	Health Care	China	14	10
6099723	BPCL.IS	BHARAT PETROLEUM CORP LTD	Energy	India	14	10
6919519	URC.PM	UNIVERSAL ROBINA CORP	Consumer Staples	Philippines	18	10

Source: UBS, Thomson Reuters

We will produce a monthly screen of our Fundamental Growth scores. Please contact your UBS Salesperson should you wish to receive it.

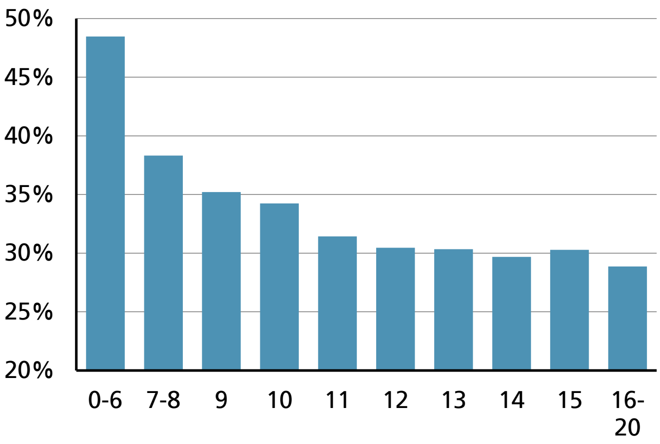
Appendix 2: Fundamental Growth performance by region

Figure 29: Total excess return – United States



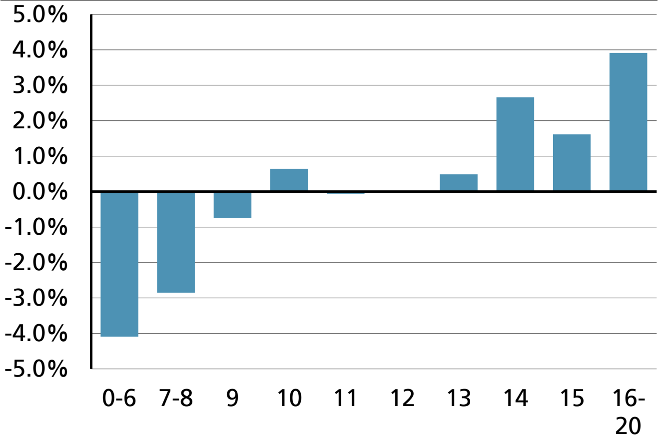
Source: UBS, Thomson Reuters

Figure 30: Volatility – United States



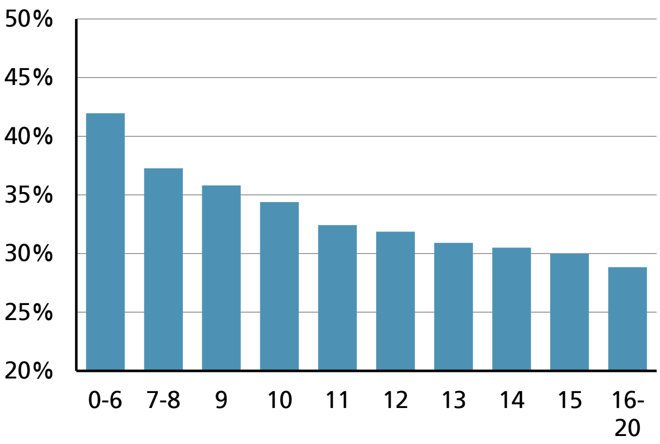
Source: UBS, Thomson Reuters

Figure 31: Total excess return – Europe



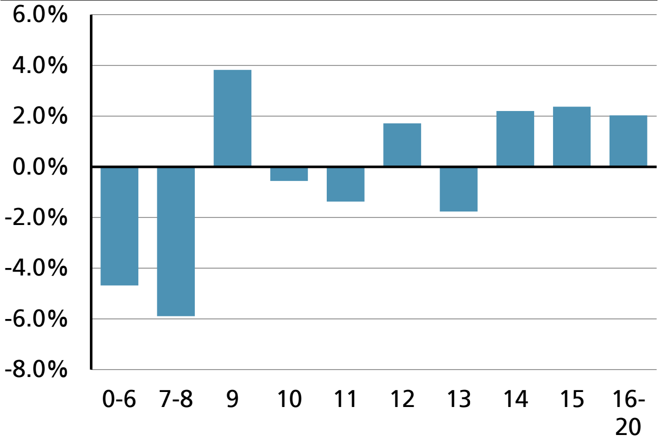
Source: UBS, Thomson Reuters

Figure 32: Volatility – Europe



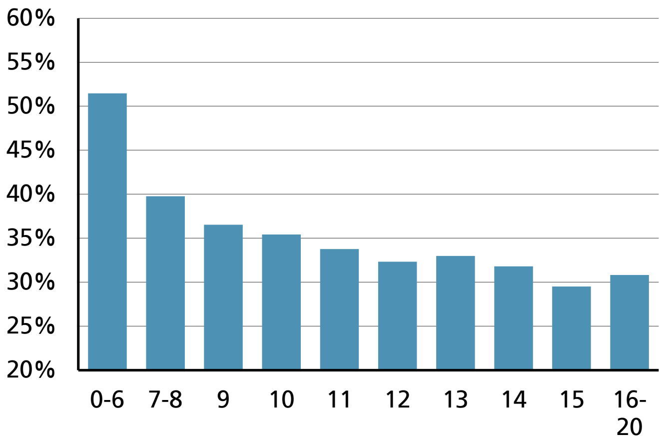
Source: UBS, Thomson Reuters

Figure 33: Total excess return – Asia ex-Japan



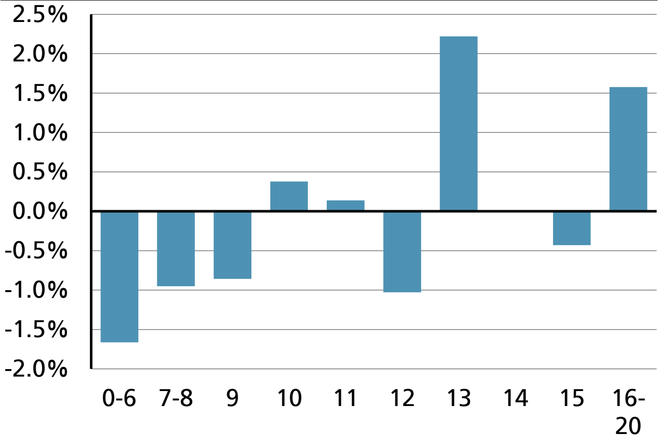
Source: UBS, Thomson Reuters

Figure 34: Volatility – Asia ex-Japan



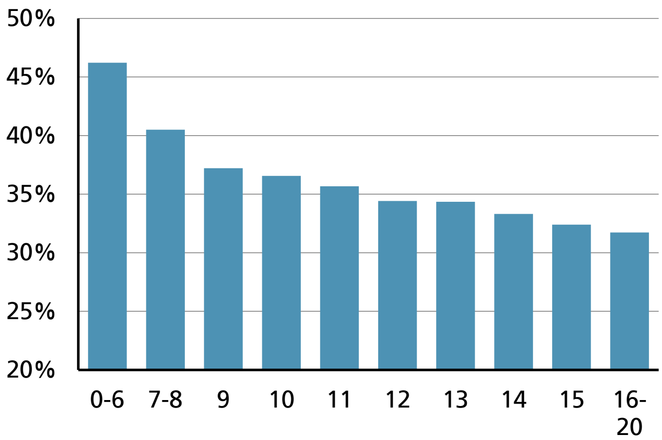
Source: UBS, Thomson Reuters

Figure 35: Total excess return – Japan



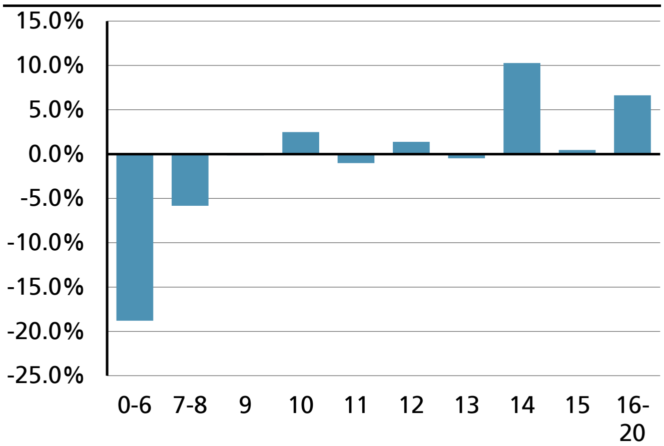
Source: UBS, Thomson Reuters

Figure 36: Volatility – Japan



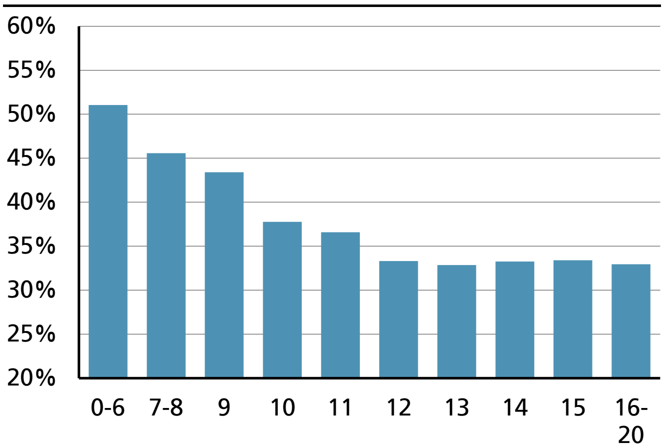
Source: UBS, Thomson Reuters

Figure 37: Total excess return – Australia



Source: UBS, Thomson Reuters

Figure 38: Volatility – Australia



Source: UBS, Thomson Reuters

UBS Equity Quantitative Research team

UK – London

Nick Baltas	+44-20-7568 3072
Maylan Cheung	+44-20-7568 4477
Ian Francis	+44-20-7568 1872
Simon Iley	+44-20-7568 6327
David Jessop	+44-20-7567 9882
Claire Jones	+44-20-7568 1873
Manoj Kothari	+44-20-7568 1997
Leon Schelhase	+44-20-7568 2346
Simon Stoye	+44-20-7568 1876
Christine Vargas	+44-20-7568 2409

US – New York

Sebastian Lancetti	+1-203-719 4045

Hong Kong

Josh Holcroft	+852-2971 7705
Shanle Wu	+852-2971 7513

Australia– Sydney

Oliver Antrobus	+61-3-9242 6467
Luke Brown	+61-2-9324 3620
Pieter Stoltz	+61-2-9324 3779
Paul Winter	+61-2-9324 2080

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Sell	FSR is > 6% below the MRA.	11%	21%
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Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

Source: UBS. Rating allocations are as of 31 December 2014.
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