

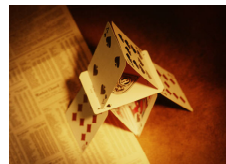


Concentrated equity markets and ETF investing

Towards more efficient portfolios

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August 2011



“Unfair” situation... For the skilful manager

Market	Concentrated market Sector weights	Diversified market Sector weights	Manager's exposure Allocated weights	Sector return	Manger's return
Resources	40%	15%	10%	15.0%	17.0%
General industrials	10%	15%	15%	7.5%	9.5%
Consumer goods	10%	20%	30%	5.0%	7.0%
Services	15%	20%	10%	12.0%	14.0%
Financial	20%	25%	30%	10.0%	12.0%
IT	5%	5%	5%	-5.0%	-3.0%
Total return	10.8%	9.0%	10.1%		

- Consider two types of markets in which a skilful money manager may operate, namely a *concentrated* market and a *diversified* market. In the former a relatively few large securities (stocks) or sectors dominate the total market capitalisation while in the latter market no sector or stocks have particularly dominant weights. Thus in this market the stocks are more evenly weighted.
- Let us assume a skilful manager is superior in his stock selection (irrespective of a bottom-up or top-down approach) and achieve a two percent outperformance premium relative to the average performance of stocks in each sector of the market.
- In a diversified (less concentrated) market such a manager will deservedly outperform the market (10.1% versus 9%). Yet, it is not a foregone conclusion the manager will achieve the same feat in a concentrated market! For example, if the dominant sector/shares in such a market performs better than the other sectors of the market, the manager despite his/her proven skill may still lag market performance (10.1% versus 10.8%), simply because of the manager's underweight exposure (often due to fund constraints or rules) to the dominant sectors of the market.

But also for investors...

“No-skill” manager outperforms and investors have to pay outperformance fees!

Market	Concentrated market Sector weights	Diversified market Sector weights	Manager's exposure	Sector return	Manger's return
Resources	40%	15%	10%	5.0%	3.0%
General industrials	10%	15%	15%	7.5%	5.5%
Consumer goods	10%	20%	30%	15.0%	13.0%
Services	15%	20%	10%	12.0%	10.0%
Financial	20%	25%	30%	14.0%	12.0%
IT	5%	5%	5%	-5.0%	-7.0%
Total return	8.6%	10.5%			9.3%

- But there is also a flip side – this time it is to the benefit of the money manager, even if he/she is not skilled in stock selection. For example if the manager underperforms the average sector performance by 2%, the manager can still outperform the market when the dominant sector underperforms relatively to the other sectors of the market, simply because of the manager's underweight exposure to the most dominant sectors.
- Thus such market concentrations may lead to an unjust appraisal of a manager's real abilities. Then, the question of charging investors outperformance fees. The mere fact that performance fees are not visible (investors do not physically pay managers since the fees are recovered indirectly) should not make it less important for investors!
- Careful consideration should be given to proper benchmarks to assess fund management performance. For example, SWIX is a much better benchmark than the ALSI because of its more evenly weighted structure but may still be inappropriate as I will illustrate later.

Market Concentration Top Five companies

Country	Percentage of Market Cap
Australia	32%
Hong Kong	22%
Japan	11%
France	28%
Germany	30%
Italy	46%
Netherlands	39%
Sweden	36%
United Kingdom	27%
Canada	17%
United States	9%

Country	Percentage of Market Cap
China	42%
India	20%
Russia	45%
Mexico	54%
Brazil	47%
Egypt	46%
Morocco	66%
South Africa (ex dual-listed stocks)	29%

The Brandes Institute

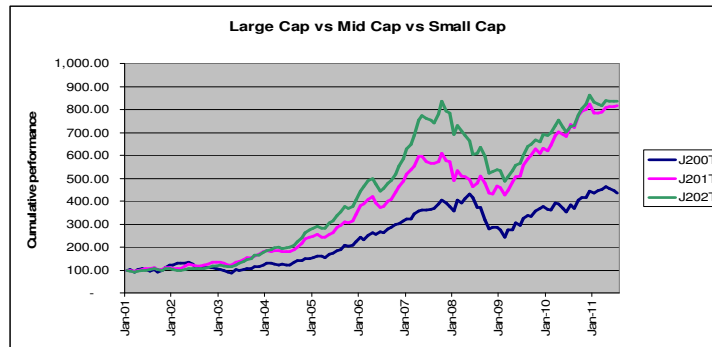
- Concentrated markets are the rule rather than the exception around the world, especially in some emerging markets.

The fundamental law of active management

- Skill x Opportunity set (market breadth)
- $IR = IC \times \sqrt{N}$ (square root of the number of investable securities)
- Two managers with the same skill set but operating in different markets. If one manager has 1,000 stocks and the other 250 stocks to invest, then the former can add twice the value.
- Basically it all boils down to that a money manager besides skill needs sufficient investment opportunities to show off his/her abilities to create market-beating returns over time.

Investment strategy

- Large Cap (Top 40): ETF portfolios
- Mid & Small Cap: Active management



- Let me propose the following investment strategy: For large cap equity investing I will be using predominantly passive investment strategies, like ETFs because of its low investment costs and relatively few mispricing opportunities in that segment of the market. Active management portfolios will be exploiting opportunities in the mid cap and small cap segments of the market that clearly offered some excellent investment opportunities in the past.
- But from our previous discussion we know that markets tend to be overly concentrated – dominated typically by a few large stocks – and the performance from a market index ETF portfolio will basically depend on the performances (or lack thereof) of these stocks. Thus, is it possible to tweak or fine-tune our large cap ETF portfolio to enhance the effective investment opportunities within the large cap segment of the market?
- First, we need to determine or calculate the level of concentration within a market portfolio...

Effective stock exposure

Market Cap	Market X	Market Y
Company A	25%	70%
Company B	25%	10%
Company C	25%	10%
Company D	25%	10%

Herfindahl index = $(\sum(w)^2)^{-1}$

Typically used to measure market concentration and competition in the economy

Effective exposure	Market X	Market Y
Company A	0.1	0.5
Company B	0.1	0.0
Company C	0.1	0.0
Company D	0.1	0.0
Sum	0.3	0.5
Inverse	4	2

Market X = 4 stocks evenly weighted

Market Y = 2 stocks evenly weighted



- The *Herfindahl index* provides a methodology how to calculate the level of concentration in the market or investment portfolio. For example, consider two markets X and Y which consist of four stocks each. In market X all shares have equal weighting and the effective number of stocks is equal to four. In market Y, however, one stock is dominant (70% weighting) relative to the other stocks. Following the *Herfindahl* methodology market Y has an effective number of 2 stocks (or like having a portfolio consisting of two evenly weighted stocks).
- Likewise, we can calculate the effective number of stocks in ETF portfolios...

ETFs: Effective exposure

ETF	TOP 40	SWIX	RAFI	DIVI	EW
Perceived security exposure	42	42	43	30	42
Effective security exposure	15	21	21	28	42
Efficiency	36%	50%	49%	93%	100%
Top 40 securities	100%	100%	93%	35%	100%
Resources exposure	44%	32%	35%	2%	30%
Financials exposure	18%	24%	28%	42%	30%
Industrial exposure	38%	44%	37%	56%	40%

- For example, the effective stock exposure of Top 40 is equal to 15 evenly weighted stocks while the SWIX 40 and RAFI 40 ETFs' level of stock concentration are equal to 21 evenly weighted stocks. The Divi ETF has a fairly high evenly weighted structure and Equally Weighted (EW) 40 has basically a perfect exposure to the number of stocks in the portfolio, but obviously the makeup of these two ETF portfolios will differ a lot from the ordinary market ETFs.
- Basically all ETFs have a 100% exposure to Top 40 stocks only, while Divi ETF has only 35% Top 40 stocks and the balance invested in Mid Cap stocks.
- The Top 40 ETF is dominated by resources, while the SWIX 40, RAFI 40 and EW ETFs have a dominant position in industrial stocks. The Divi ETF at the moment has a very low exposure to resources and is made up by financials and industrial stocks.

Building a more efficient (less concentrated) market index core portfolio

Objective: Create a portfolio of ETFs with an effective exposure of 30 stocks using 5 ETFs

My portfolio requirements	Min	Max
Sector Allocation: Resources	20	50
Sector Allocation: Financials	20	50
Sector Allocation: Industrials	20	50
Max weight per security	0	7.5
Top 40 exposure	80	100

- Within the large cap segment of my portfolio I am interested in using the different ETF structures. But what combinations or investments in each ETF should I consider?
- Say, I have certain objectives and specific portfolio requirements. For instance, I want to create a portfolio with an effective exposure of 30 stocks and want an overall weighting of at least 20% to each of resources, financials and industrial sectors of the market. Furthermore, I do not want more than 7.5% allocation per stock in the portfolio and overall I should have at least 80% exposure to Top 40 stocks.

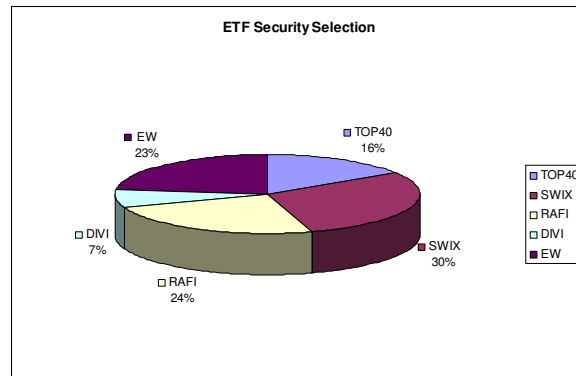
Model outcome



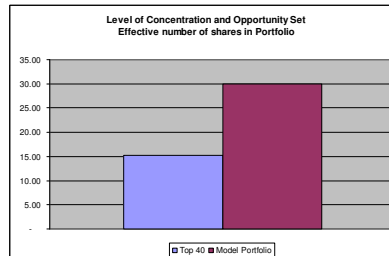
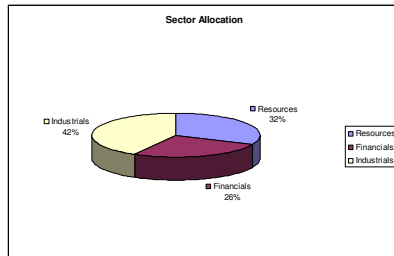
- Effective stock exposure in portfolio = 30 stocks evenly weighted
- Top 40 stocks exposure: 91% of portfolio

ETF	Top40	Swix40	RAFI40	Divi	EW40
Weight	16%	30%	24%	7%	23%

Model outcome ETF selection



Model outcome



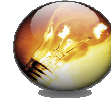
Top 10 holdings

My Portfolio	
Bhp Billiton Plc	7.5
Mtn Group Ltd	7.1
ANGLO AMERICAN PLC	6.6
SabMiller Plc	5.3
Sasol Ltd	5.1
STANDARD BANK GROUP LTD	4.2
COMPAGNIE FIN RICHEMONT	3.3
Naspers Ltd -n-	3.0
Impala Platinum Hlgs Ld	3.0
Firststrand Ltd	2.9

SWIX 40	
Mtn Group Ltd	12.3
Bhp Billiton Plc	7.4
Sasol Ltd	7.2
ANGLO AMERICAN PLC	5.8
SabMiller Plc	5.6
STANDARD BANK GROUP LTD	5.2
Naspers Ltd -n-	4.9
Firststrand Ltd	3.7
Impala Platinum Hlgs Ld	3.7
COMPAGNIE FIN RICHEMONT	3.1

- Top five holdings of “My Portfolio” equal 32% of total portfolio and top ten holdings equal 48% of portfolio.
- Top five holdings of SWIX 40 equal 38% and top ten holdings equal about 60% of portfolio.

Model outcome



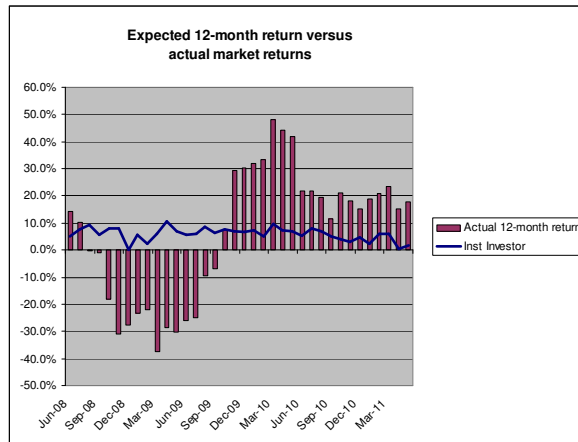
- A guideline
 - Retain some market characteristics, but also capturing the dynamics of RAFI and DIVI methodologies
 - More evenly weighted portfolio (enhanced opportunity set)
- Tracking error, volatility, cost benefits
- But not based on past performance
 - Backtesting = false sense of security?
- And not explicitly based on my or experts' predictions (what is going to happen next)...

Because we're not very good at it!

- A few comments: While it is interesting to talk about tracking errors and volatilities - perhaps even doing one's PhD studies or impressing your prospective clients - I am less concerned about such metrics (what is the difference between 20% and 25% volatility per annum really for investors – equity investing remains risky business at least over short-term intervals). The cost benefits of ETFs, however, are real – probably more than 50% cheaper than the alternatives - and will be an important consideration why I would be considering ETF investing.
- My model's outcome is based solely on meeting certain objectives like enhancing the effective exposure of stocks in the portfolio, i.e. to reduce the level of stock concentration within the ETF portfolio, but not based on past performances or predictions!
- A final thought: Predictions...No, collectively we as professionals are not very good at predicting future returns or how risky assets will perform, especially over shorter terms. For example, each month the *Institute of Behavioral Finance* is doing a survey among professional investors and financial planners to gauge their sentiment about stock market conditions at that moment and expectations about future returns, for example the next 12-month period.
- But some may argue that a 12-month period is not a realistic prediction period, yet even if you are a long-term investor we do form opinions about where to invest for the immediate future. Unless you are basically a robot such expectations will have a profound influence on your investment decisions!

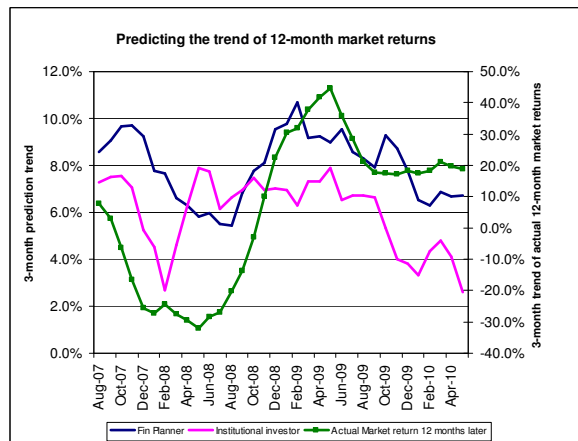
IBF (SA) survey

12-month Return expectations and actual returns
June 2008-May 2011



IBF, DRW Investment Research

IBF (SA) survey



IBF, DRW Investment Research

- The survey which started June 2007 has built up to date a three-year track record comparing 12-month return expectations with actual 12-months returns (June 2008 – May 2011). Clearly, we consistently underestimate outlier returns – both negative and positive return experiences!

IBF (SA) survey

- Correlation of 12-month return predictions with actual returns
 - Financial planners 0.38
 - Inst. Investors 0.02

“Far more money has been lost by investors preparing for corrections, or trying to anticipate corrections, than has been lost in corrections themselves.”

- Peter Lynch

- Surprisingly, professional investors thus far have done not very well in predicting the general movement of market returns 12 months forward.
- Maybe, it is really a case of too much information (information overload) or perhaps too many indicators/opinions. But it is not really about which group is the better, rather that we should be aware that we are not very good at predicting future returns!

Thank you!

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