[](https://www.google.co.za/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjMj873uuzTAhUXOsAKHZBCB54QjRwIBw&url=http://www.systemicrisk.org.za/&psig=AFQjCNG3WRjQBuC7H2FO-2AHyXP59Sz3ig&ust=1494750837555561)

**GROUP 2**

**Research Project Submission**

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**Table of contents:**

**<Bla Bla will insert later>**

**Perhaps a list of figures and a list of Tables as well?**

**< we will decide later>**

# **Introduction**

This project will focus on a financial product called Exchange-Traded Funds (ETFs) and specifically equity-based ETFs. These ETFs are often created to represent a certain sector or index in the market and they can tailored to target certain fundamental factors. The three factors that will be considered in the scope of this project is the value, momentum and size of the underlying equities.

The goal of this project is to construct three ETFs based on the above-mentioned fundamental factors and then to constrain these ETFs to three individual criteria (namely; Market Capitalisation (market cap), Minimum Variance and Maximum Number of Bets). The ETFs shall be created based on the data of the JSE Top40 equities between 01 July 2003 and 31 August 2016.

Once the 12 ETFs have been created, an in depth discussion on their economic viability and performance takes place. The discussion is from the point of view of a Risk Manager working for a market-maker company.

# **Literature review**

## Exchange Traded Funds (ETFs) and how they work

* Can hold a variety of stocks/bonds/commods but for this project we just look at equities
* Can track a certain sector or a certain aspect. E.g satrix Fini and JSE TOP40
* Creation units mechanism.
* Differences between ETF and mutual funds

Investing in too few stocks can often lead to a large variance in returns especially if the few selected equities all lie within the same sector of the market. For example if one were to invest in a few commodity based companies and due to a large strike on at a different companies mine, the market could have a sentimental shift on the commodity sector as a whole. This will lead to a general drop in share price for all the commodity-based companies.

A simple solution to this problem is the financial product called Exchange Traded Funds (ETFs). ETFs can hold a variety of underlying assets from equities, bonds, commodities and even derivatives. For the purpose of this project, we will only look at ETFs that hold a variety of equities.

These ETFs are typically based on a certain index, sector and/or aspect. An example of an ETF that is based on an index and a certain aspect is the JSE Top40. It represents the top 40 companies based on their market cap (number of shares in issue multiplied by the price of each share). An example of an ETF that is based on a sector and the same aspect is the Satrix Fini, which represents the top 15 financial companies by market cap.

One might think that since an ETF tracks a large number of shares that it would be very expensive (for the average individual) to but just one ETF, however this is not true at all. To understand why these ETFs do not cost a fortune one must understand the creation unit mechanism.

Looking at the JSE Top40 as an example, the ETF is weighted according to the proportions of each of the companies market cap’s relative to the market cap of all the top 40 stocks as a whole. This leads to arbitrary percentages such as 12.05% for a specific stock. In order to represent exactly 12.05% these ETF’s need to have thousands of shares within one ‘package’ (containing a fairly accurate proportion of each stock). This package is called the creation unit and is sold to an authorised participant (which is usually the market maker). The market maker then divides this creation unit into many segments, where each segment contains the correct proportions of the stocks (this leads to essentially selling fractions of shares). Since the creation unit has now been broken up into many smaller pieces, it can be listed on the stock exchange where it is bought and sold by investors/retailers. A depiction of this is seen in figure 1.

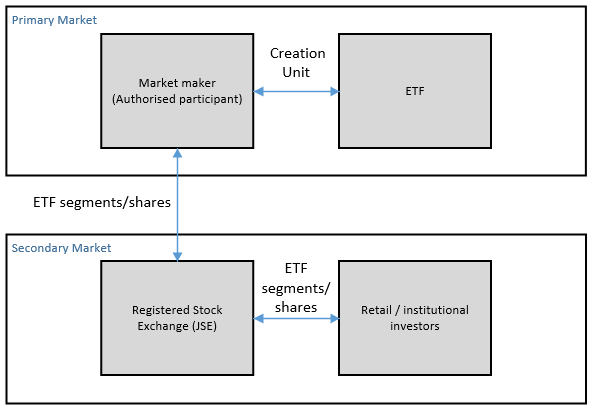


Figure - Diagram representing the flow of trade of an ETF

## Economic relevance and market mechanics of ETFs

* Helps retailers/individuals buy sectors without heavy transaction fees
* Convenience
* Tax benefits
* (Market mechanics) rebalanced every 4months
* Weightings (include how too much of one stock is a bad thing in terms of diversification)
* Weightings (too small weightings/ too many stocks leads to excessive trade costs)

# Theoretical Background

Whatever that is?

# Methodology

<description of work done>

# Results

# Conclusion and recommendation

<recommendations might not be needed>