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The effect of the Black Economic Empowerment Act of South Africa

Amended Codes of Good Practice 2013

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Abstract

The Black Economic Empowerment Act (BEE) was a direct government intervention programme to reconcile the people of South Africa and address the inequalities of the colonial history and Apartheid regime. Decennia's later, high poverty rates and slow progress of transformation pointed towards limited impact. As a result, the government decided to amend the Codes of Good Practice of 2007 in 2013. This thesis studies the shock in B-BBEE scorecard levels as a result of the transition from the 2007 to the 2013 Codes of Good Practise, providing an oversight of B-BBEE compliance between 2009 and 2021. The study uses a uniquely sampled dataset of 99 companies on the J203 index representative of Johannesburg Stock Exchange (JSE). The two-sample t-tests show firms experienced a significant shock in their B-BBEE scorecard of 1.8 levels after the implementation of the new codes. The effect is significantly smaller for firms previously invested in the equity ownership element, but the reduced effect does not extend itself to other priority elements. Above average ownership equity compliance in combinations with the elements skills development and preferential procurement strengthen the effect. The Oil & Gas industry experienced a significant larger shock than other industries. Additionally, the evolution of compliance efforts between 2009 and 2021 is analysed using two-sample t-test, ANOVA and Tukey honest least significance tests. The results point towards the gradual improvement of B-BBEE scores. Due to the increased focus on skills development and enterprise and supplier development, B-BBEE under the 2013 codes forms a more realistic proxy to drive widespread change and economic growth. Government's policy focusing on collaboration between the private sector for determining B-BBEE sector codes could enhance further compliance efforts. Future research studies will determine whether the current level of B-BBEE scores represent a plateau to which the costs of implementing are exceeding its benefits or will increase even further, forming a source of competitive advantage.

Keywords: BEE, J203, Codes of Good Practice, Apartheid, state of transformation, government policy

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Appendix

Abbreviations:

ABT	Arbitrage Pricing Theory
ANC	Afrikaans National Congress
ANOVA	Analysis of the Variance
B-BBEE	Broad-Based BEE Act
BEE	Black Economic Empowerment Act
BEEcom	Black Economic Empowerment commission
CAGR	Compound Annual Growth Rate
CAR	Cumulative Abnormal Return
CSR	Corporate Social Responsibility
DTI	Department of Trade and Industry
EME's	Exempt Micro Enterprises
GEAR	Growth, Employment and Redistribution
HSDA	Historically Disadvantaged South Africans
JSE	Johannesburg Stock Exchange
LFC	Petroleum and Liquid Fuels Charter
NDP	National Development Plan
Obs	Observation
OLS	Ordinary Least Squares
PPPS	Public-Private Partnerships
QSE's	Qualifying Small Enterprises
RDP	Reconstruction and Development plan
SMME	Small, Micro and Medium Enterprises
SPV	Special Purpose Vehicles
TEC	Top Empowered Companied
ZAR	South African Rand

1. Introduction

Since the inception of the Dutch arrival at the Cape in 1652 followed by the occupation of the British in 1795, the black indigenous population have been the victim of socio-economic exclusion and suppression. Many of the South African people today are the descendants of slaves brought to the Cape Colony from 1653 until 1822. In 1834, Britain abolished slave trade in all of its colonies, including the Cape. In reality however, many of these slaves continued to work on the farms of their former masters or in the gold mines, violently expropriated by the British (Lowe et al., 1999). This implicit segregation between cultural ethnicities was formalised under the Apartheid regime in 1948. Characterised by socio-economic exclusion, limited educational opportunities for black people and poor living circumstances, Apartheid increased and deepened the already present structural inequalities. In 1994, the South African government under the leadership of Nelson Mandela thus found itself with a major challenge of addressing the state of the countries socio-economic disparities.

The general consensus formed was that these inequalities could not be merely addressed and turnaround by natural capitalistic labour market outcomes. A harmonised policy needed to be installed to overcome the societal imbalance. The passing of the Black Economic Empowerment Act (BEE) in 1994 was a direct government intervention in the redistribution of assets and opportunity to right these historical injustices. The first phase of BEE was primarily concerned with transferring the ownership of white-owned businesses to black participants. Being heavily criticized by the people for only benefitting a few politically well-connected Black elites, this led to passing of the Broad-Based BEE Act (B-BBEE) in 2003, adding the Historically Disadvantaged South Africans (HDSA[1]). In 2004, the government developed a framework for the policy including the Codes of Good Practice, refined in 2007. The Codes of Good Practice specified standardized targets and weightings for companies to attain on the basis of 7 elements. B-BBEE became a process focusing on societal inclusion, enterprise and skills development and growth, not limited to the redistribution of assets. Firms either have the option to comply with the requirements of B-BBEE or be non-compliant. In case of compliance, companies receive a scorecard measuring the level of their contribution, rated from 1 (best) to 8 (worst).

In spite of acknowledgeable economic progress, decennia after the abolishment of the Apartheid regime, the country still found itself in a poor economic situation with increasing challenges in terms of overcoming the legacies of Apartheid (Oxford business group, 2021). According to the Government's commission report for Employment Equity in 2015, 70% of the workforce profile at the top management was dominated by white South Africans, compared to 14% Black, 5% Indian, 9% Coloured and 3,5% foreign national. In 2016, Black representation across the Johannesburg Stock Exchange (JSE) boards was 43% of which 20% were Black women whereas Black ownership in reporting companies stood at 32%. In 2017, President Zuma announced that only around 10% of commercial farmland had been redistributed or restored to black South Africans (State of the Nation Address, 2017). In addition, the country remained struggling with extreme forms of poverty. From 2006 until 2015, the number of people found to be living in extreme poverty only decreased from

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[1] The term Historically Disadvantaged South Africans (HDSA) refers to any person, category of persons or community, disadvantaged by unfair discrimination prior to the installment of the Constitution of the Republic of South Africa in 1993 (Act No. 200 of 1993).

28,4% to 25,2% (Chutel, 2017). Proponents of B-BBEE argue that poverty amongst black people is persistent because of a lack of B-BBEE compliance (Mathura, 2009; Morris, 2018).

As a result, the government decided to amend the 2007 Codes of Good Practice in 2013. Scorecards were from thereof analysed on the basis of a new scoring mechanism, focusing more on the elements ownership, skill development, and enterprise development, making it more difficult to obtain a high score. (Department of Trade and Industry, 2013 (DTI)).

The thesis analyses the impact of publicly listed companies' scorecard as a result of these new law amendments, how scorecards were affected and the evolution of compliance efforts. More specifically, the thesis aims to answer: what was the impact of the 2013 Codes of Good Practise and what is the subsequent evolution and state of B-BBEE transformation in South Africa? The study uses dataset from 2009 until 2021.

This thesis will add academic relevance by explaining the direct effect of the new amendment changes on companies B-BBEE scores and the evolution of the scorecards. Most of the literature surrounding B-BBEE focuses on share price performance after BEE transactions (e.g. ownership). The government of South African established a B-BBEE commission in 2017. This commission is, amongst other tasks, responsible to "Analyse reports concerning broad-based economic compliance from organs of state, public entities and private sector enterprises" (B-BBEE commission, 2021). Since their first report was only issued in 2017, there is a lack of general oversight into the evolution of compliance efforts before and after the new B-BBEE regulation (Mehta, 2016). This paper, to the best of my knowledge, will be the first to critically analyse publicly listed firm's scorecards before and after the 2013 new Codes of Good Practice.

The societal relevance relates to the increasing challenge the South African government is facing of attaining their Growth, Employment and Redistribution (GEAR), designed to achieve the alleviation of poverty, achieving gender equality, addressing high rates of unemployment and creating sustainable economic growth. Recognising the failure of the GEAR, the government introduced in 2010 the New Growth Path and National Development Plan (NDP). Like many other developing countries, the government of South Africa has resorted to the use of public-private partnerships (PPPS) as a strategy to deal with the socio-economic, fiscal, political and societal problems (Tetani & Sifuba, 2016). B-BBEE forms a centre piece of achieving the NDP. For this reason, it is crucial to understand the effect of the 2013 law amendments on public company's scorecard and the subsequent efforts to attain a better scorecard. The author specifically chose to analyse large public companies for they have a leading role in influencing macro-economic policy. Large firms achieve better innovation, organisation of production, management practices, investment in human capital, essentially representing a vehicle of change (The World Bank 2020). More compliance will lead to a stronger economic position as a means to address the countries underlying problems. The study uses a dataset from the top 160 companies by market capitalization on the JSE.

The outline of the thesis will be as follows: Section 2 will discuss the history and phases of the Black Economic Empowerment Act alongside the new amendment changes, section 3 will provide a literature overview. Section 4 and 5 specifies the research methodology and descriptive statistics. The results are discussed in Section 6 and 7, to conclude in section 8.

2. Phases of Black Economic Empowerment Act

2.1 Phase 1: Ownership transactions, 1994-2000

The first phase of BEE consisted of an uncoordinated policy including multiple ownership transactions. Although documented in the government's 1994 Reconstruction and Development plan (RDP), the first set of initiatives came from the private sector voluntary selling equity stakes to black business persons or black-owned businesses. In 1993, financial service company Sanlam spearheaded BEE selling 10% of its stake in Metropolitan life to Methold, a company with an 85% black shareholding consortium. The number of BEE deals began to grow rapidly reaching 132 in 2000, of which 50 transactions were conducted on the JSE with a total value of ZAR 3.4bn (Ernst & Young report, 2005). However, during this phase, BEE ownership deals were carried out in the absence of an overarching legislative framework. Since companies often sold part of their unissued equity to pre-identified black people who were well politically connected, the period is also called "Narrow Based Black Economic Empowerment". In addition, ownership transfers seldom translated into meaningful influence in board, management or functional levels (Beecom, 2001).

Sales were financed by loans usually secured by future cash flow streams of the company itself. The vulnerability of these Special Purpose Vehicles (SPV) used to finance early BEE deals, became apparent when the ownership patterns reversed with the Asian stock market crash of 1998, causing the number of BEE transactions to fall sharply (DTI, 2003).

In May 1998, Cyril Ramaphosa was appointed head of the Black Economic Empowerment commission (BEEcom). The goal of the commission was to publish a one-time report after which it ceased operating. The objectives, amongst others, were to:

- gain insight into the BEE process through empirical research and to make observations on the pace and results of BEE initiatives during the 1990s.
- draw conclusions on the obstacles to meaningful participation of black people in the economy.
- develop a powerful case for an accelerated National BEE Strategy and to make recommendations on policies and instruments required to guide a sustainable strategy.
- develop benchmarks and guidelines to monitor the implementation of the National BEE Strategy (BEEcom, 2001).

The BEEcom 2001 report outlined specific objectives for the South African government to achieve within a 10-year horizon frame. Some of the most notable were that Black South Africans should hold at least 30% of the productive land, 25% of the shares of companies listed on the JSE, 40% of executive and non-executive board positions on the JSE and 25% equity participation in each sector of the economy (BEEcom, 2001). The findings and recommendations of the BEEcom were based on 2 historical groundings. First, according to the BEEcom, the fundamental crises of the South African economy derives from the fact that black people remained excluded from financial and economic resources. BEE's initial impact was very limited, benefitted only a few and even deepened structural inequality (Mbeki, 2009). Second, that post-1994 South Africa would be situated in a world of globalization and neoliberalism policy making, meaning the structural inequalities would only reinforce itself in an unregulated free market, without the necessary governmental interference. The BEEcom concluded that BEE should be viewed within a broad scope of the empowerment process including land ownership, skill development, job creation, black women empowerment and poverty alleviation.

2.2 Phase 2: From industry charter towards a legal framework for BEE, 2000-2007

Early industry charters embedded this turn-around philosophy by making the act more inclusive. The Petroleum and Liquid Fuels Charter (LFC) was enacted in November 2000. The respective industry parties agreed that over a 10-year period, not less than 25% of the equity value of the companies should be transferred to HDSA (Department of Energy, 2000). In addition, the industry and government should work together to address the skill gap and invest in training programs. In 2002 the Mining charter committed to achieve 26% HDSA ownership in its industry in 10 years and a baseline of 40% HDSA participation in management within 5 years (Republic of South Africa, 2002).

The Mining charter in particular stood out as it was the first charter to recognise several key elements to enact change including Equity/ownership, Human Resource Development, Employment Equity, Beneficiation, Housing, Affirmative Procurement and Community Development. The government gazetted these acts in the Mineral and Petroleum Resources Development Act of 2002 (Government of South Africa, 2002). This act also recognised that South Africa's mineral and petroleum resources belong to the people of the nation and the state is the custodian thereof. In other words, mining rights are part of a countries national resources and cannot be privately exploited without the necessary governmental licenses. The act granted the minister power to suspend or cancel mining rights. This implied industry compliance with BEE would become more pressing in sectors where the government can exert leverage by means of the sale of state assets, permits or tender offers.

In 2003, the government put into place the first regulatory framework for BEE, broadening its beneficiaries as stated in the 2001 BEEcom report, which became known as the B-BBEE act of 2003. B-BBEE aimed at broadening the economic foundation of the country, stimulating economic growth and creating employment. As a result, "the BEE process will include elements of human resource development management, employment equity, enterprise development preferential procurement as well as investment, ownership and control of enterprises and economic assets". (Department of Trade, Industry and Competition, 2003). The Codes of Good Practice developed in 2004, refined in 2007 provided a common framework for the measurement of B-BBEE scores. Each enterprise can obtain a generic scorecard from an independent credit rating agency, rated on 7 different elements: ownership, management control, employment equity, skills development, preferential procurement, enterprise development and socio-economic development.

2.3. Phase 3: To B-BBEE or not to B-BBEE, 2007-2013

There are several arguments for firms to comply with these Codes of Good Practice. First, the hiring of black employees could directly increase the productivity of the firm if previous hiring decisions were influenced by stereotypes about the underlying quality of black labour. Second, the selling of equity could increase firm productivity if these assets would be used more efficiently by black people than whites who previously held them (Acemoglu, Gelb, & Robinson, 2007). However, it would be unlikely that B-BBEE compliance in such a manner would lead to first-order benefits in productivity. Under the Bantu Act of 1953, black schools' curriculums were aimed at preparing students for job opportunities related to semi- and unskilled labour (Meek & Meek, 2009). Language policy under Apartheid was designed to support ethnic identity, limiting the teaching of official languages in English and Afrikaans to black people, affecting post-apartheid literacy rates (Nkabinde, 2016). As a result, the majority of the black population in South Africa was only experienced in low-skilled jobs. In addition, international evidence on the influence of equity ownership on productivity outcomes is scarce (Acemoglu et al., 2007).

There are other more straightforward benefits to B-BBEE compliance. The scorecards form the basis for the South African government for assessing a company's B-BBEE status when granting licenses, concessions, sale of state assets, governmental contracts or when entering into a PPPS. (Republic of South Africa, 2004). Thus, for certain industries (e.g., Mining, Petroleum) B-BBEE compliance would become paramount to stay operational as a company. High B-BBEE scores could be a source of competitive advantage. Moreover, B-BBEE ownership deals exposed firms to a larger network of business partners as black South African consortia were often comprised of well-connected and influential business men or due to governmental relations (Andrews, 2008; Mathura, 2009; Nattrass & Seekings, 2010; Sartorius & Botha, 2008). Lastly, B-BBEE compliant firms enjoy favourable media attention as the top empowered firms are annually listed in the Financial Mail[2] Top Empowered Companies (TEC) list. Empirical literature concerning the effect of company's media coverage on financial markets is well established (e.g. Antweiler & Frank, 2004; Kleinnijenhuis, Schultz, Utz, & Oegema, 2015; Tetlock, 2007; Strycharz, 2017; Hullert and Ungeheuer, 2021).

In contrast to the Mining and Petroleum charter, later industry charters (Property, Tourism and Financial Services) were conducted on a voluntarily basis without any direct disadvantages in case of non-compliance. B-BBEE compliance can here be seen more as a framework of Corporate Social Responsibility (CSR) sending out a signal of actively contributing towards creating an economy for all the people of South Africa. The corporate image of the firm could improve, further influencing its cash flows and financial performance (Jackson et al., 2005).

Cost of B-BBEE compliance include the transfer of equity ownership to black South Africans. Sales of ownership transactions frequently took place at a considerable discount ranging from 15 - 40% of the market value of equity (Acemoglu et al. 2007). As B-BBEE partners are often not able to finance the loan, this is paid out of the firms' retained profits and paid-off by future dividends. Companies may be forced to install regularly dividend payments or increase the dividends in order to assist B-BBEE partners repaying debt. Regular dividend policy can cause firms to forgo on valuable investment policies and reduce investment below the optimal profitability level.

With respect to the management component of the scorecard, B-BBEE compliance could even reduce firms' profitability. Given the historical educational background of most of the black South Africans, B-BBEE employment equity and skill development could even cause the firm to hire black South Africans who are less qualified for the position and less productive than what the firm would otherwise have hired.

2.4 Phase 4: Problems with the B-BBEE Act of 2003

After 2003, the number of B-BBEE deals began to grow rapidly, from ZAR 15bn in 2002 to ZAR 75 bn in 2006 (Fauconnier & Mathur-Helm, 2008).

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[2] Financial Mail is a South African business publication focused on reaching the country's leading business people. Annually, the top 100 empowered firms are published in this journal.

Figure 1

Average B-BBEE deal value by sector 2003-2006

Average B-BBEE deal value by sector 2003 - 2006
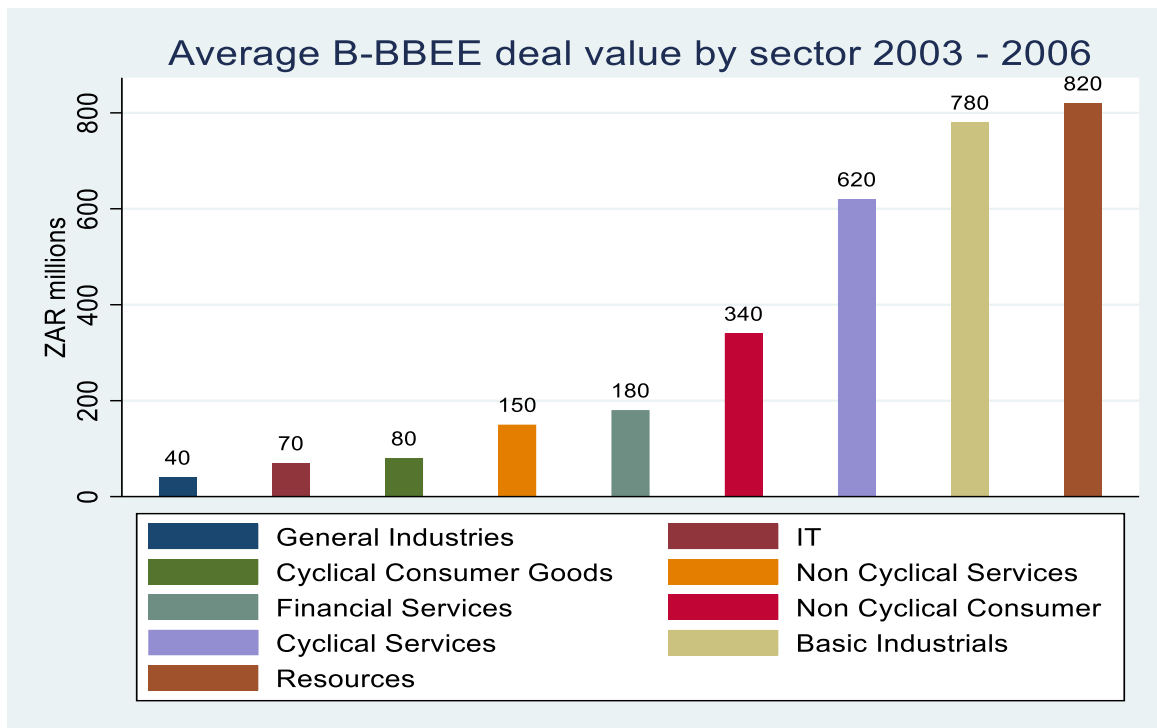
Source: Compiled by Author, data Businessmap Foundation, cited by Fauconnier & Mathur-Helm (2008)

Most of the BEE deal flow was driven by the Resource sector, followed by Basic Industrials. As the Mining sector charter was drafted in 2002 and contains considerable benefit of compliance, BEE deals in this sector seemed to be head and shoulders above other industries.

Figure 2

Number of B-BBEE deals 2004-2009

Number of B-BEE deals 2004 - 2009

Source: BusinessMap database (2004-2006) as cited by Patel & Graham (2012)

Patel and Graham (2012) analyse B-BBEE transactions between 2004-2009. Their research shows that of 327 deals in 2004, only 7,4% can truly be considered with broad-based partners. Again in 2005, only 6,4% of the deals was to be considered broad-based. Employees of the involved companies were the main beneficiaries in these deals, followed by women's group, community trusts and education trusts. After 2007, B-BBEE deals began to diversify more. However, due to the decreasing number of deals, this diversified beneficiary's impact was limited in size. Although, both critics and those in favour of B-BBEE acknowledge the establishment of a powerful group of black capitalists in the first 10 years after Apartheid, limited empowerment questions how broad the second phase of the empowerment truly was. Most activity occurred in resources, media and telecommunications and government procurement contracts (Iheduru, 2004). These industries are also characterised by the most empowering charters and where the government has had the most influence in terms of exerting leverage.

Sartorius and Botha (2008) analyse B-BBEE data from 62 companies on the JSE between 1999 and 2005. The results indicate that B-BBEE progress in terms of equity ownership has been limited and not very broad-based. The majority of the company's respondents only transferred between 5 and 15% equity as opposed to the goal of 25% by 2014. In 2009, political economist, Moeletsi Mbeki, argued that unless South Africa directs the B-BBEE policy more towards in favour of a broader skills development, the South African underclass who has seen little or no change, will eventually turn itself against the elite. By 2012, South Africa's unemployment rate was the 7th highest in the world at 24%, only coming down from 27,1% in 2003. The bulk of which is concentrated in the Black population (29,1%), followed by Coloureds (23,9%), Indians (9,3%) and Whites (6,1%) (Statistics South Africa, 2012). The DTI noted that many firms were achieving high B-BBEE ratings without engaging in any meaningful transformation of their organisation (Mzilikazi, 2015).

In addition, multiple companies were charged with fronting. Fronting is the deliberate or attempted circumvention of the B-BBEE act and Codes. This primarily occurred by claiming black South Africans were in charge of directorship positions but in reality, were paid-off to comply or positioning black employees as executives but with a considerably lower pay. Before 2013, fronting was treated in court under the common law offence of fraud. Chairing a meeting of the Black Economic Empowerment Advisory Council in 2011 President Zuma stated: "Fronting and tender abuse is an unintended consequence of an overemphasis on diversity of ownership and senior management in implementing broad based black economic empowerment (B-BBEE)". With the enactment of the 2013 codes, fronting was treated as a criminal offense under the common law.

The result of South Africa's slow progress of attaining its long-term growth plan and the limited amount of change in the lives of HDSA, caused the government of South Africa to revise the 2007 B-BBEE Codes of Good Practice.

2.5 The B-BBEE Act of 2013

The Amended B-BBEE Codes of Good Practise were gazetted October 2013 and scheduled for implementation August 2014. The deadline was however extended to April 2015. Figure 3 provides an oversight of the B-BBEE rating system prior to the new amendments.

Figure 3

B-BBEE Scorecard elements of 2007

B-BBEE 2007

- Ownership (+3 bonus pts)
- Management (+ 1 bonus pts)
- Employment Equity (+3 bonus pts)
- Skills Development
- Preferential Procurement
- Enterprise Development
- Socio-economic Development

Total   107
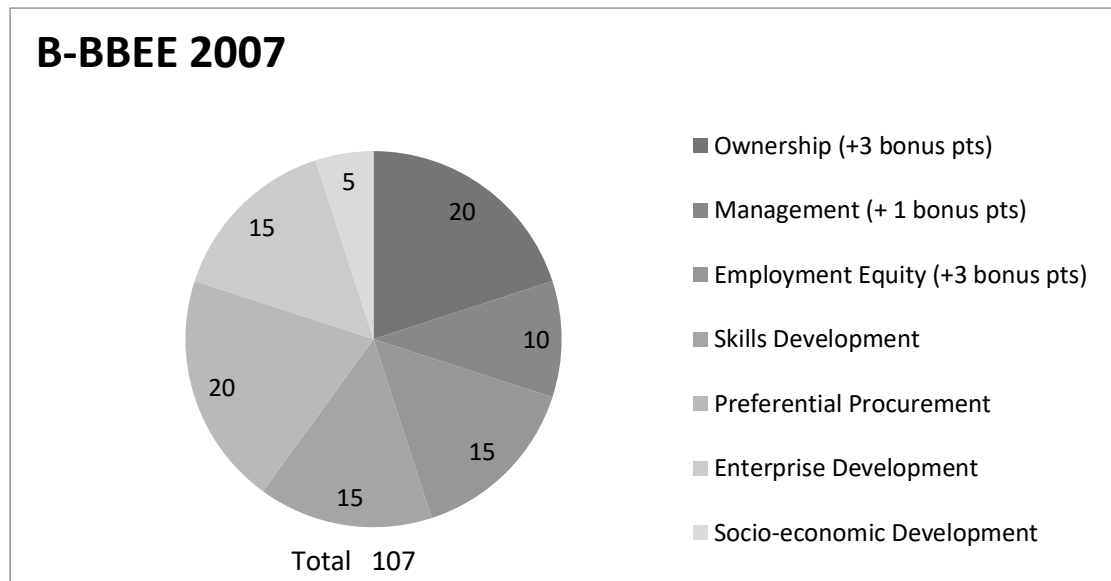
Source: DTI (2007). Interpretive guide to the Codes of Good Practice.

The primary focus of this scorecard system was based on 7 different elements, with a strong focus on ownership. The 2013 Amendments reduces the number of elements to 5, allocating different weights and shifting the focus more towards skills, enterprise and supplier development.

Figure 4

B-BBEE Scorecard elements of 2013

B-BBEE 2013

- Ownership
- Management Control (+ 4 bonus pts)
- Skill Development (+ 5 bonus pts)
- Enterprise and Supplier Development (+ 4 bonus pts
- Socio-Economic Development

Total   118
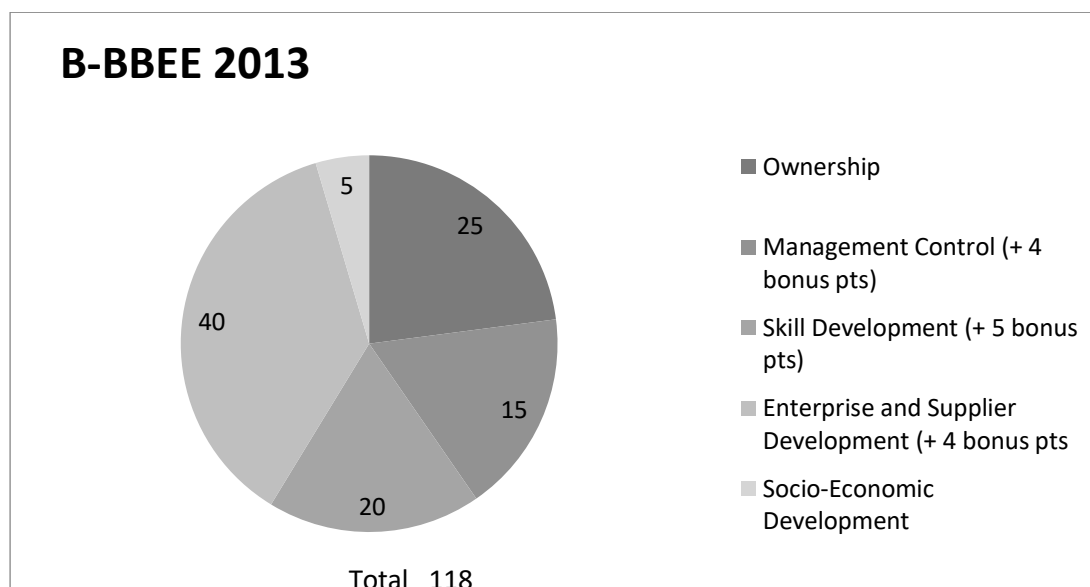
Note: Enterprise and Supplier Development and Enterprise Development are used interchangeably. *Source:* DTI (2013). Government Gazette, 11 October 2013

The 2013 Codes of Good Practice form a more rigorous source of measuring transformative practice and increase its focus on investments in important elements besides ownership transfer as well.

Ownership refers to the amount of equity hold by HDSA participants. As will be outlined in part 3.1, literature findings have had mixed results with respect to shareholder returns.

Management control refers to the positions surrounding black management and the control/decision making within the entity. From an inclusive perspective, more board diversity, demographical as well as cognitive, would lead to better firm performance (Manyaga & Ammar, 2019). Having multiple ethnicities in management functions to match the demographic make-up of the firms customers could deliver a competitive edge (Cox, 1994). Van der Merwe and Ferreira (2014) studied the relationship between the 7 elements of B-BBEE and share price performance between 2005-2011. They find a significant positive relationship between management control and B-BBEE share returns but a negative relationship for ownership.

Skills development is arguably one of the most important elements of the B-BBEE scorecard. It has become essential for companies to play a role in the increasing unemployment rate by investing in training programmes as a way of fast-tracking and closing the gap between skills shortages in the economy. Early research suggests investing in skills development helps to achieve increased employee productivity and more than offsets the cost of training (Ballot, Fakhfakh and Taymaz, 2006). Furthermore, it aids developing long standing business relationships while gaining a competitive edge over your competitors (BEE Online, 2021). Skills development serves as a critical vehicle to drive economic growth and address the inequality gap caused by differences in past education. Other components (e.g. ownership transactions) from a viewpoint of the owners are harder to justify.

Enterprise and supplier development includes sourcing from local firms and achieving social goals by actively doing business with people previously marginalised under the Apartheid regime. A trickling down effect of doing business with public sector entities, causes small black business entities to be sought after. By sourcing goods and services from black-owned businesses or businesses with a high B-BBEE score, firms increase their own score. Van der Merwe and Ferreira (2014) find that preferential procurement, as part of the current enterprise and supplier development element, was strongly negatively correlated to share price returns. The cost of supplying from B-BBEE compliant businesses may not offset cheaper or more efficient alternatives. In contrast, Sibiya and Barnard (2019) examine the impact of B-BBEE enterprise and supplier development for Small, Micro and Medium Enterprises (SMME's), as a growth and development mechanism. By means of a qualitative study approach, the authors find that parent firms offer both financial and non-financial (e.g. markets, network, skills training) benefits to SMME's. The most significant contribution of SMME's to the parent firm is the improvement of the participating companies' scorecard. In the long-term, enterprise and supplier development compliance causes the development of a competent black business value chain.

Socio-economic development refers to facilitating sustainable access to into the economy for HDSA's. Measured entities receive scores for monetary or non-monetary made contribution. Examples include offering discounts, cost-free professional services, grant contributions etc.

The South African government put in place priority elements that have to be met. Companies must attain a minimum of 40% in each of the targets of ownership, skills development and enterprise and supplier development. Enterprises (more than ZAR 50 million turnover) failing to comply with any of the minimum sub-requirements, will have their score discounted by 1 level.

3. Literature review

3.1 B-BBEE deals and share price performance

B-BBEE literature primarily focused on the relationship between shareholders reactions and B-BBEE transactions. Jackson, Alessandri and Black (2005) analyse stock market (JSE) reactions of South African firms to BEE transactions between 1996 and 1998. Using four variables: stake, union, discount and value, the authors aim to determine whether deal characteristics impact the cumulative abnormal return (CAR). They find significant and positive CARs of 1,8% over a 5-day event and 1,3% over a 3-day window for BEE transactions, but none of the aforementioned deal characteristics turned out to be related. JSE firms, engaging in BEE deals, also did not experience negative post-announcement share return. In contrast, an equally-weighted portfolio of their BEE firms outperformed the JSE index by 30,76% over a 1-year period after the BEE announcement. This supports that BEE, at least in the beginning, was viewed positively by the market but not through which mechanism.

Sartorius and Wolmarans (2009) use an event study to analyse the CARs associated with the public announcement of B-BBEE deals from JSE companies between 2002-2006. The authors frame their study and the benefit of B-BBEE transactions in the context of Corporate Social Responsibility (CSR) by engaging in equity ownership B-BBEE transactions. On average, they find a positive abnormal return of 4,5% and 3,9% over a -2 to +2 and -1 to +1 days window, respectively, but only in 2006. No significant differential impact with respect to the different type of transactions was found. As B-BBEE announcements in 2006 only produced positively significant CARs, it could be the case investors became more cautious in evaluating the impact of B-BBEE transactions after the Asian crises of 1998. This could potentially explain the results of Strydom, Cristison and Matias (2009) and Jackson et al. (2005). Strydom et al. (2009) did not find any positive or negative share price reaction of B-BBEE announcements between 1996-2006. In a follow-up study, Wolmarans (2012) investigated the long-term price performance of 63 out of the 95 JSE companies engaging in B-BBEE transactions during their previous study. They find that although the average performance of these firms was lower than the market, the average decrease in value during the financial crises (-27,3%) was also significantly less than the market (-46,6%). After the crises, B-BBEE firms did not perform significantly different than their counterparts. In spite of mixed findings with respect to different years, these results could hint shared characteristics between companies engaging in B-BBEE transactions.

Ward and Muller (2010) use an event methodology to study the long-term share price reaction of JSE companies after B-BBEE announcements related to equity ownership from 2001 until 2008. Following the same approach as Mordant & Muller (2003) and Mutooni & Muller (2007), the researchers find significant positive results for smaller companies with a market capitalisation of less than ZAR 3.5 bn whilst larger companies experienced slightly negative abnormal returns. The CAR for smaller companies was 20% over 180 trading days. One possible interpretation is that smaller firms might have more to benefit from being B-BBEE compliant as they are able to increase their performance by gaining access to governmental contracts. Large firms are likely to have already been well established. Therefore, asymmetry with respect to B-BBEE compliance benefits could not only be present in different industries, but extend to other characteristics (e.g. market capitalisation) as well. Since the majority of the sample included international resource companies, these firms might not have gained exponential benefit from B-BBEE compliance. Ward & Muller's (2010) research finds contradicting evidence to Sartorius and Wolmarans (2009) with respect to the CARs surrounding the day before and after the announcement, but confirms CARs following the deal announcements were more positive for transactions after 2005. The authors put forth a different explanation where

shareholders have come to view B-BBEE in a more positive daylight, after the establishment of the Codes of Good practice in 2004, rather than during the narrow-phase of B-BBEE (Ponte, Roberts & Van Sittert (2007); Ward and Muller, 2010).

Mathura (2009) uses a cluster sampling method to analyse B-BBEE scorecard compliance on a range of financial measures reflecting firm performance from 2003 until 2008, including the compound annual growth rate (CAGR), price-to-book ratio and price/earnings ratio. Using k-means clustering algorithm per individual sector, the study did not find any significant relationship between the company's 2009 scorecard rating and any of the three measures of profitability. One potential argument is the majority of the companies only started implementing B-BBEE in the latter half of 2007. In spite of effects being long-term, the financial crises of 2008 might have eroded and significantly skewed the profitability measures.

Chipeta and Vokwana (2011) use a more elaborate Arbitrage Pricing Theory (ABT) than the one used in Strydom et al. (2009) and cover a period from 1999 until 2009. Their research provide evidence of JSE inefficiency as B-BBEE announcements are already incorporated into the share price 20 days prior to the announcement day. However, the CARs do remain negative for the entire period. Their results are consistent with the findings of Sartorius and Botha (2009) and Mathura (2009) with the exception that the returns announcement surrounding -2 and +2 days are also insignificant.

Mzilikazi (2015) takes a different approach by grouping B-BBEE compliant firms according to their score and compares the operating performance of JSE listed firms to their respective average industry performance. The study uses cash flow deflated by total assets as a measure of operating performance. The author finds significant positive results of 2,31% abnormal returns whereby the effect is concentrated in the years before the financial crises (2004 - 2007). Basic Materials, Financials and Oil & Gas showed significantly higher excess returns. The study however suffers from endogeneity problems: B-BBEE can be complementary to operating performance as a broad set of factors can affect operating performance (Hansen and Wernerfelt, 1989).

Mehta (2016) finds CARs with a cumulative peak of 4% at day 50 of all B-BBEE score upgrades from 2009 until 2015. The study further analyses 1 and 2 levels upgrades both associated with a 5% and 8,5% CAR respectively. Downgrades appear to generate larger significantly negative CARs. The research further employs a long-term buy and hold strategy of shares with different B-BBEE scores and compared them against the J203 index. The results coincide with Mzilikazi (2015) who finds that higher B-BBEE scores do not necessarily translate into better returns.

Dreyers et al. (2021) comes closest to our research. Their study analyses JSE listed firms B-BBEE compliance and individual elements against a wide range of profitability measures from 2004 - 2015. The researchers find a significant increase in firms B-BBEE compliance over the years 2004 - 2012. The study uses a dataset of the top empowered companies annually published by Empowerdex[3]. The panel regression found significant negative relationships between the market-based P/E ratio and total B-BBEE score, but a significant positive relationship for the cost of equity. A possible explanation could be that investors were not willing to pay more for B-BBEE compliant firms. On the other hand, earnings per share are susceptible to manipulation and may therefore not provide an adequate measure for accounting-based performance (Dreyer et al. 2021).

The literature findings seem to indicate mixed results with respect to the effect of B-BBEE on share prices. During the first phase, B-BBEE was seen positively by the market. After documenting the

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[3] Empowerdex is one of the largest independent economic empowerment rating and research agencies founded in 2001. They annually publish a list of the most empowered publicly listed B-BBEE companies.

narrow-based impact and limited beneficiaries, the positive effect eroded between 1998 and 2007. The development of a regulatory framework and refinement the Codes of Good practice in 2007, caused B-BBEE deals to be associated with positive returns once again. B-BBEE level up and downgrades cause market reactions as well. Lastly, gradual improvement of B-BBEE compliance levels seem to at least indicate some importance for firms to comply.

3.2 B-BBEE and economic growth

Acemoglu et al. (2007) lay out a conceptual framework for evaluating B-BBEE impact on economic growth between 2004-2007. Their analysis tries to predict to which extent a firm engages in B-BBEE and B-BBEE ownership shares through several sources of variation. The regression shows that B-BBEE seems to have very little impact on firm behaviour. It could be that firstly at the time of research, it was too early to test the empirical implications of B-BBEE, and secondly, the costs and benefits of B-BBEE might cancel each other out.

Andrews (2008) finds that B-BBEE can be used as a growth catalyst to drive economic change in South Africa. By means of a qualitative study of JSE listed companies, B-BBEE has seen an upward trend in broadening economic access for HDSA. The proportion of black directors on JSE listed firms as well as certified accountants increased. However, firms do face the growing challenge of complying with the Codes of Good Practice due to the limited amount of qualified people causing firms to fish out of the same talent pool. Simultaneously, firms find it hard to keep investing in training and skill programs. The findings of the paper lead to the discussion of what could be done to improve the policy into becoming a catalyst for growth. Andrews (2008) argues that B-BBEE efforts should be allowed to arise out of an economic and decision free space. Firms should not be forced to follow rigid quota's but instead be allowed to set their own measurable targets. Patel (2012) describes this suggestion as the pluralist approach, whereby the policy making is open to a variety of groups including civil organisations, businesses, trade unions and the government in order to represent the best interest of the public. Early industry charters were based on such partnerships. The fact that these industries were also amongst the top transformative in Mzilikazi's (2015) paper, may suggest that this form of social policy is the most efficient for B-BBEE.

After 2003, B-BBEE has aimed to include a broader group of beneficiaries, but the Codes of Good Practice of 2007 were primarily steered by the government. With that, B-BBEE closed itself from other influences and tilted more towards the elite approach, whereby policy is developed through a group of influential individuals or elites in a society namely the top group of politicians within the Afrikaans National Congress (ANC) party. Much like in Acemoglu et al. (2007), Andrews (2008) argues B-BBEE should focus less on the top of the economy, where firms face skills constraints but more towards the middle and end economy, motivating large firms to reach down and invest in training programs. The 2013 Codes of Good Practice certainly addressed some of these issues by placing more weight on enterprise and supplier developments and skills.

4. Research Methodology

4.1 Methodology

To the best of the authors knowledge, this research will be the first to analyse publicly traded firm's scorecard changes before and after the new legislation of 2015 and its subsequent evolution. The study will first employ a series of comparative t-tests identifying scorecard shocks after the introduction of the 2013 codes. This method proves to be efficient to directly put-off the change in

scorecards after the new legislation with previous scorecard changes. Ordinary Least Squares regressions (OLS) are used to identify determining factors for the scorecard changes. Analysis of the variance tests are used in conjunction with Tukey honest significance test for the subsequent evolution of the scores. Non-parametric tests are performed to control the validity and robustness of the results.

4.2 Population, Sample Selection and Sampling Method and Time Frame

The study focuses on the J203 index[4]. The equities of the J203 were chosen as they collectively represent 99% of the market value on the JSE. The dataset is thus representative of South Africa's largest stock exchange, representing more than 442 stocks.

The study uses a timeframe from 2009 until 2021. The reason thereof is twofold. First, abnormal variation in the firm's scorecard needs to be due to the new amendment changes, not because of annual scorecard fluctuation resulting from increased/reduced compliance efforts. Second, as firms obtained their first scorecards rating with respect to the 2013 codes in different years, enough data needs to be available to analyse the subsequent scorecard evolution. B-BBEE levels measurement is done by an independent rating agency and valid for 12 months. As a result of inconsistent verification dates, some companies already obtained their new scorecard in 2016, while others in 2019. Therefore, each companies' scorecard will be analysed individually with respect to the year in which the first score under the new regulations was received.

4.3 Data collection process

Professor Michael Ward from the University of Pretoria and Erasmus University Rotterdam was kind enough to provide me access to the Bulletin database. This database retrieves information on shares listed on the JSE. A list of all the J203 constituents between 2009 and 2021 was made, including the list and de-listings. Firms of which the industry was already well-covered, but got de-listed from the J203 before receiving a new score under the 2013 codes, were dropped from the dataset. Few companies still trading on the JSE after being de-listed from J203, were included in order to have a more accurate image of the different industries' scorecard shock. These occasions were so minimal they do not influence the dataset but provide a richer type of analysis. A robustness check was done with and without these instances that confirmed these results.

A thorough and lengthy screening process was conducted whereby each individual company's scorecard between 2009 and 2021 was viewed on the Mpowered Beagle Database website[5]. Although a great amount of the companies scores were listed on this website, more often than not only a couple of years were mentioned or in the worst case no scores were to be found. The Government of South Africa only obliged publicly listed companies to publish their B-BBEE score after 2017. Due to the lack of oversight in B-BBEE compliance, this caused a challenge in identifying the state of transformation in South Africa (Shava, 2016). The establishment of the B-BBEE commission in 2017 was formed for that purpose. Since their first annual report only covers B-BBEE data starting in 2017, it is difficult to interpret a wider image of the transformation in South Africa after the implemented law.

In case the information was not available on the Mpowered Beagle website, annual reports of firms were screened to identify the scorecards and the year in which the firm received its first new score. Where this information was not available on the website nor in the annual reports, the company

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[4] The J203 index, also called the South Africa's all share index, is comprised of the 160 largest companies by market capitalisation on the Johannesburg Stock Exchange (JSE).

[5] Mpowered Beagle is a free independent website storing historical BEE scores of publicly listed South African companies.

was directly contacted. By contacting the firms directly, the study mitigates the availability bias against firms that voluntarily disclosed their scores online vs firms that chose to reserve their B-BBEE scores for internal purposes. This has resulted in a unique B-BBEE score dataset of 99 J203 listed firms.

4.4 Research hypothesis

From an economic perspective, there are 5 ways in which the new amendments might affect publicly listed firms. First, given the previous high levels of fronting and the new stricter scoring mechanisms, the majority of the firms will experience a negative shock in their scorecard rating.

- H1: The majority of the firms will experience a downward rating from their previous level after the 2013 scoring mechanism.

Second, it could be the case that firms already anticipated the new scoring mechanism and implemented the changes necessary to maintain their score. The implementation of the 2013 codes was extended until 2015 and some firms only adopted new scorecards measurement latest 2019. These firms might have purposely delayed transforming to the new codes to prepare themselves better against potential scorecard changes.

- H2: Firms will experience no shock in their scorecard from their previous level after the 2013 scoring mechanism.

Third, the new scoring mechanism focuses primarily on ownership, skills development, preferential procurement and pro-actively investing in enterprise and supplier development. It could be that only firms previously not engaged in these activities, experience a downward rating.

- H3: Firms previously not engaged in ownership, skills development, preferential procurement and enterprise and supplier development experience a downward rating from their previous level after the new scoring mechanism.

Given the literature findings in asymmetric B-BBEE compliance benefits (Ward & Muller, 2010; Mzilikazi, 2015), some industries find it more important to obtain a good scorecard. From this perspective, one would expect certain industries to increase their compliance efforts and install transformative practices to protect against the 2013 codes.

- H4: The scorecard shock is industry dependent.

Lastly, given that firms will experience a scorecard shock and the importance of B-BBEE, the research studies the subsequent evolution of the score with the 2013 codes. Benefits to B-BBEE could cause compliance efforts to increase after the implementation of the new codes. However, observed high levels of fronting before the 2013 codes, easily obtainable scores without driving transformative practices and limits to B-BBEE compliance benefits, could translate into B-BBEE scores not recovering after the implementation of the new law.

- H5: B-BBEE compliance scores improve after the implementation of the 2013 codes.

5. Descriptive statistics

5.1 Index composition

In case the mark-up of the analysed J203 index would become too diverse, it would be difficult to interpret the change in firm scores as a proxy for the index over the years. Not only is it important that the industry composition of the J203 index is stable, but that the distribution of the J203 index is and remains representative of the total JSE. First, the industry make-up of the J203 index in 2009 was analysed. Second, the author changed its proportions alongside its list and de-listings. Out of the 162 companies present in the J203 index October 31st 2009, only 34 equities completely left the JSE index by the end of 2020. Out of those 34 firms, 7 firms left the index before the new law implementation of 2015. Table 1 compares the demographic make-up of the J203 index constituents from October 31st 2009 until the end of our analysis October 31st 2020.

Table 1

J203 Industry composition 2009-2020

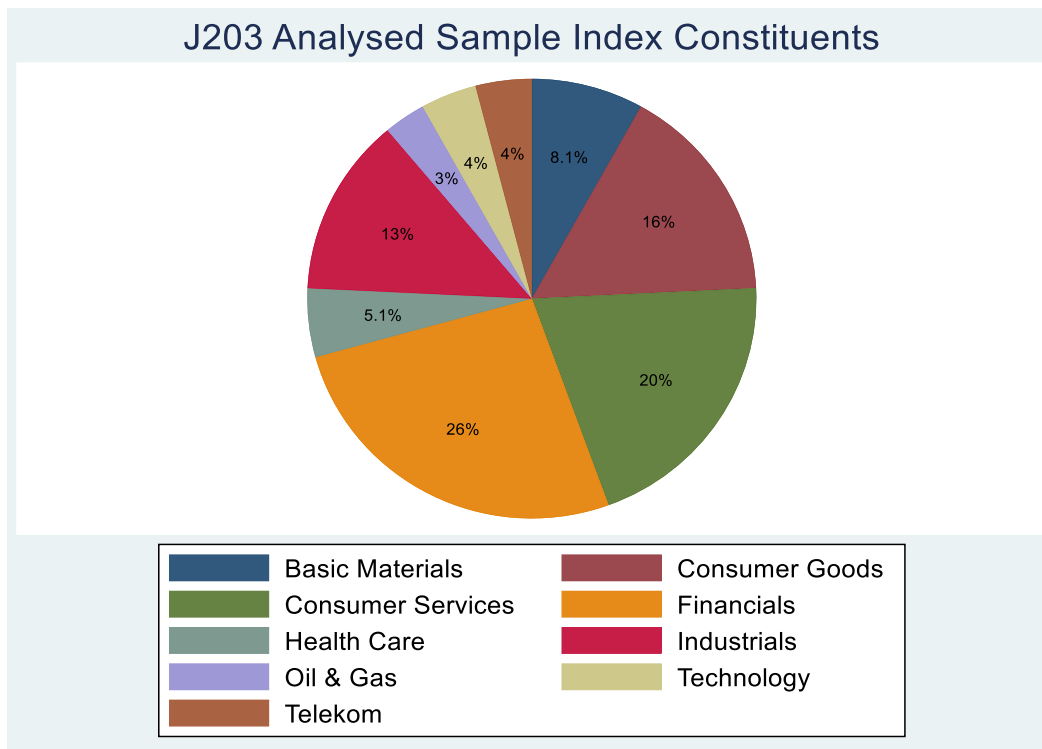| Industries J203	Percentage		Cumulative change
	2009	2020	
Basic Materials	16%	16%	0%
Consumer Goods	9,9%	7,8%	- 2,1%
Consumer Services	16%	16%	0%
Financials	30%	41%	+11%
Health Care	3,1%	2,8%	-0,3%
Industrials	16%	9,9%	-6,1%
Oil & Gas	3,1%	0,7%	-2,4%
Technology	4,3%	2,8%	-1.5%
Telekom	2,5%	2,5%	0%
Total equities	161	141	-20

Source: Compiled by author, data J203 index

Financials form the bulk category of the J203 equities in 2009 followed by Basic Materials, Consumer Services and Industrials. The same composition is found in 2020, with a decrease in the Industrials sector and increase in Financials. In addition, less firms are present in the Oil & Gas and Technology sector. To conclude, the J203 industry composition seems to be fairly stable over a period of almost 11 years.

Figure 5 provides the industry composition of the analysed dataset. In spite of some constraints in terms of companies having a non-disclosure agreement with respect to publicly issuing their scores, the industry composition is representative of the J203 index change over the years. The bulk of the equities are as well concentrated in Financials followed by Consumer Services, Industrials and Basic Materials. We managed to obtain a representative sample for the Oil & Gas and Technology industry as well, which has seemed to leave the J203 index in the last couple of years.

Figure 5

J203 Analysed Sample Index Constituents

J203 Analysed Sample Index Constituents

Legend:
- Basic Materials
- Consumer Goods
- Consumer Services
- Financials
- Health Care
- Industrials
- Oil & Gas
- Technology
- Telekom

Slices: 8.1%, 16%, 20%, 26%, 5.1%, 13%, 3%, 4%, 4%
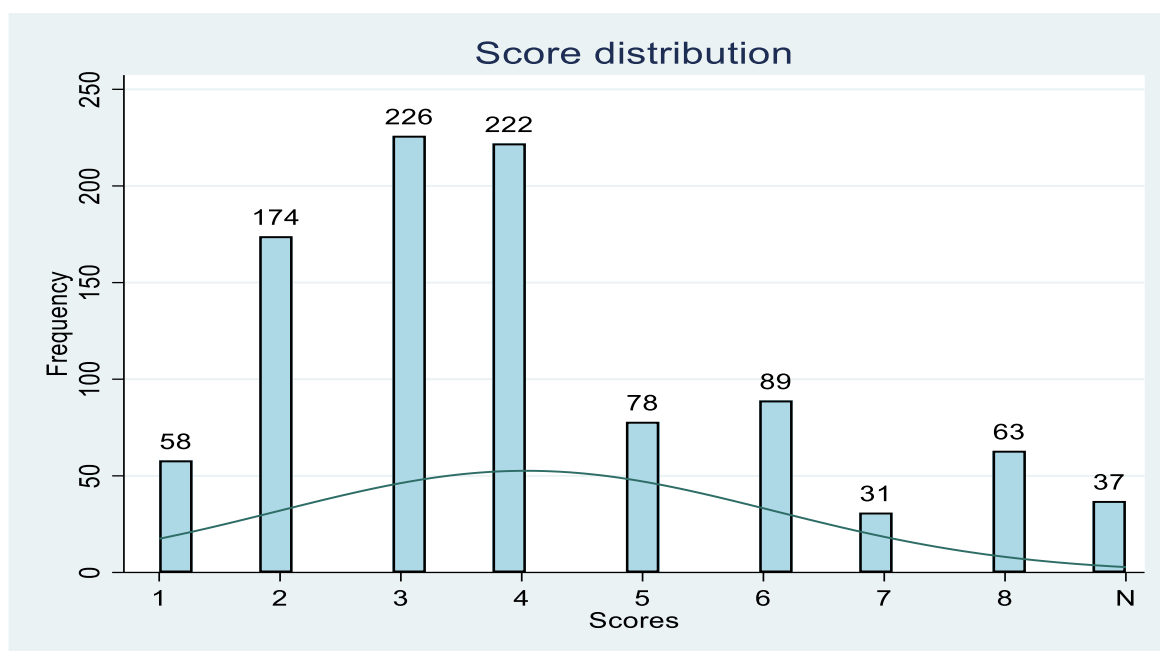
Source: Compiled by author, data J203 index

Moreover, comparing our sample data industry coverage to the 2020 JSE total index, the majority of the equities are concentrated in Financials (36%), Industrials (17,1%), Basic Materials (15,6%) and Consumer Services (13,6%). Our analysed sample is not only representative of the J203 over the years but, equally important, mirrors the industry proportions of the JSE.

5.2 Time-frame analysed scorecards

For the robustness of the analysis, enough data of each firm before the new legislation needs to be obtained. Due to the unavailability of some firms scores or missing data, this was not always possible from its earliest inception in 2009. However, the most important data specification is enough subsequent past data, preferably where scores did not fluctuate at all or marginally with only 1 or 2 levels up or downgrades per year. Figure 6 lists the aggregate score distribution for the collected data.

Figure 6

Score distribution

Source: Compiled by author, data J203 index.

Level 1 to 8 represent the B-BBEE level of the analysed scorecards. N stands for non-compliant. These are the observations of firms that underwent the B-BBEE verification process but did not qualify for a score. The y-as represents the total number of observations for each scorecard level. Most of the observations are centred around the mean. In addition, there are enough observations for the outer ranges (1 and 8) as well. Table 2 provides an overview of the covered years and annual scorecard observations.

Table 2

Yearly score observations

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
No of Obs	13	31	60	65	75	86	98	98	99	99	96	92	68	983

Source: Compiled by author, data J203 index.

At first glance, 2009 and 2010 seem to be somewhat under covered. However, as stated, it is more important to have enough score observations before and after the implementation of the 2013 codes to proof that the underlying scorecard shock is due to the new regulation, not a result of annual scorecard fluctuation. Secondly, enough score observations after the implemented law are needed to meaningfully analyse the evolution of the scores. On average, 6 years of subsequent score observations before the new legislation are gathered. Since some firms obtained a new score latest 2019, the average number of observations after stands lower at 3 years.

5.3 Annual scorecard fluctuation pre-law amendments

Standard deviations of firm's scorecards before receiving a new score, were estimated. The less variation there is in each firms' past scorecards, the more certainty the incorporated scorecard shock is due to the new regulatory environment. As all firms have different past scores, it could be that scorecard variation itself is dependent on the level of previously attained scores. As such, each firm was grouped according to its mean scores before the new law. Equal variation around the respective mean scores was first tested. The results of the B-BBEE score variation can be found in Table 3.

Table 3

B-BBEE scores variation

Mean score	1	2	3	4	5	6	7	8	Non-compliant
Standard deviation	0	0.41	0.70	1.04	1.23	0.64	1.31	0	0
Number of Obs	0	15	29	30	11	7	4	0	1

In spite of a relative high number of observations for firms obtaining a level 8 score (Figure 6), no firms obtained a level 8 mean score. Hence, the number of observations in this score category is zero. It appears that the higher a firm's score, the more variance its collection of scorecards displays. Therefore, it could be that firms with a better overall B-BBEE score are more successful in retaining and maintaining their score.

To conclude, firstly, the sample set of the J203 index is highly representative for not only the underlying demographic change of the J203 but also for the JSE index. Industry percentages resemble the larger of proportion of the total J203 and JSE population. Secondly, the data set covers a wide range of companies whereby the majority of the scores are centred around the mean. Lastly, a preliminary analysis of the pre-law change score data shows that firms with higher B-BBEE scores are more likely to experience fluctuation in their scorecards than firms with lower B-BBEE scores.

6. Results

6.1 Hypothesis 1

Hypothesis 1 dictates firms will experience a downward rating from their previous level after the new scoring mechanism. In other words, the score change in the first year of the new scoring mechanism is different than the previous score year changes. The new focus of certain scorecard's elements and the instalment of minimum requirements could have influenced firms rating in a negative manner (Dryer et al. 2021). A two-sample t-test with equal variances was performed. Each year's score change is calculated by subtracting the score in $t + 1$ from t, whereby t equals the year. As not all firms obtained the new rating in the same year, a variable event year that always equals the first year of the new score change, was created. Table 4 lists the results of the two-sample t-test.

Table 4

Scorecard analysis before and after new law

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (before & after)	787	-0.301	0.042	1.189	-0.384	-0.218
1 (event)	99	1.798	0.207	2.055	1.388	2.208
Combined	886	-0.067	0.049	1.470	-0.164	0.030
Diff		-2.099	0.140		-2.374	-1.824

Diff=Mean(0) - Mean (1)		t = - 14.984
Ho : Diff = 0		degrees of freedom = 884
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.000	P-value = 0.000	P-value = 1.000

Note: Two-sample t-test with equal variances. Group 0 refers to the score changes before and after the new law. Group 1 represents the scorecard change in the year of the firms first new rating.

The null hypothesis that the mean difference is equal to zero is rejected. The two-sided alternative hypothesis stating the difference between the score changes of the new groups is not equal to 0 and highly significant with a p-value of 0.000. Hypothesis 1 stating the difference between mean (0) and mean (1) is negative, is highly significant at a p-value of 0.000. In other words, firms have experienced a downward rating shock (note that this is interpreted as positive score change in the score change variable) in the first year after the new law implements. The mean change is equal to 1.8 levels compared to -0.3 levels increase in the years before and after the law. Firms experienced an average scorecard shock of 1.8 levels after the introduction of the 2013 codes. These results confirm the hypothesis that the stricter and minimum requirements caused turbulence in the scorecards of companies.

Although it is unlikely, given the frequency distribution of our scores before and after the new law and the significance of our results, it could be that the nature of the new law caused scores to be fairly stable afterwards, cancelling out the variance of the score changes before and after the new law, forming the source of the significant results. Therefore, Table 5 repeats the analysis only with scorecard changes before the new law.

Table 5

Scorecard analysis before the new law

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (before)	474	-0.160	0.044	0.949	-0.246	-0.075
1 (event	99	1.798	0.207	2.055	1.388	2.208
Combined	573	-0.178	0.059	1.420	-0.061	0.295
Diff		-1.958	0.134		-2.222	-1.695

Diff=Mean(0) - Mean (1)		t = - 14.613
Ho : Diff = 0		degrees of freedom = 571
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.000	P-value = 0.000	P-value = 1.000

Table 5 does not show any particular difference with respect to the inclusion of the new law scorecard changes. Repeating the analysis with year fixed effects yields in the same results. Therefore, the significance of our results does not depend on the nature of the new law affecting the variance of the scorecard but is due to the difference between the new and the old scoring mechanism. Not only was it harder for firms to maintain their score, it in some sense confirms the notion previous compliance efforts were not attaining to transformation unwinding a shock in firms B-BBEE levels.

6.2 Hypothesis 2

The second hypothesis states firms already anticipated the new law amendments and thus did not experience a shock in their scorecards after the new ratings. On the basis of Table 4 and 5 the means between the scores before and the first score after the new law are significantly different. Therefore, even though some firms might have experienced no shock, the majority of the firms did. The analysis does not help determine whether the type of companies that experience a shock are arbitrary divided. In order to dissect this puzzle piece, we turn towards hypothesis 3.

6.3 Hypothesis 3

The most drastic changes with respect to the new scorecard implies the increased focus on ownership, skills development and enterprise development. It could be that the results under Table 4 and 5 are driven by firms previously not investing in these priority elements of the scorecard. As preferential procurement is combined with enterprise development after the new law and given substantial weight beforehand, this element is included in the analysis as well. Unfortunately, not all scorecards' certificates were available. As stated before, many data were acquired by directly contacting the firm or tracing each annual score back from the annual reports database. Moreover, some certificates only show the level of B-BBEE compliance but not the scores of each specific element. In spite of these challenges, a dataset of 88 companies out of the original 99 with over 1400 data points on all the elements between 2009 until 2021, was sampled. Firms with a scorecard certificate availability of less than 2 consecutive years before legislative change were excluded from the analysis. In some cases, scorecards only show the score level (1-8) of each element, not the associated score. The respective level in such instances was converted to an average score. In order to categorise the firms, the scores for each element for each company were equally weighted over the years and averaged. The equally weighted average score of each specific firm was subsequently equally weighted and calculated over the entire set. Table 6 provides the summary statistics.

Table 6

Summary statistic key elements

| Element	Maximum points	Average	Median	Minimum	Sample Maximum
Ownership	20	15.24	15	0	25
Skills Development	15	9.24	9.40	0	18
Preferential Procurement	20	16.09	16.30	0	25
Enterprise Development	15	14.42	14.36	0	18.75

Note: Maximum points refer to the maximum attainable points in that element. The maximum can exceed the maximum points due to bonus schemes. These instances are rare.

Extreme solitary event cases whereby score points drastically exceeded the maximum for a single observation year only, were seen as outliers and removed from the dataset. Figure 7 to 10 provide a frequency distribution for each element. The attained points are divided in intervals of 5. The element enterprise development includes a score interval of 14 and the maximum of 15. As became apparent by analysing the data, many firms obtained a 15/15 for enterprise development consistently throughout the years.
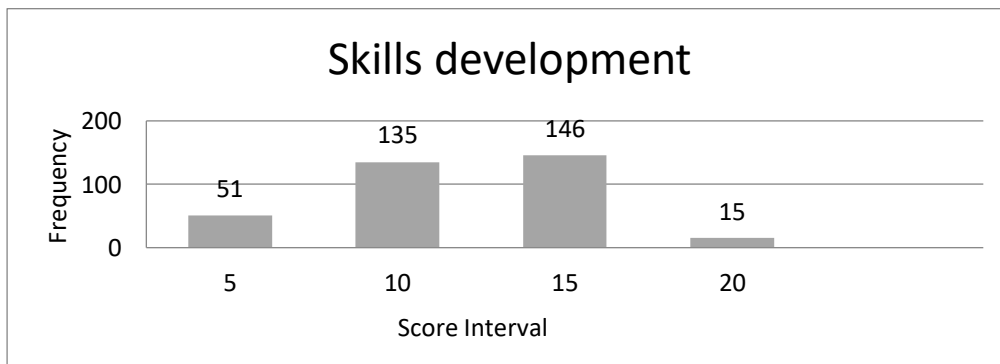
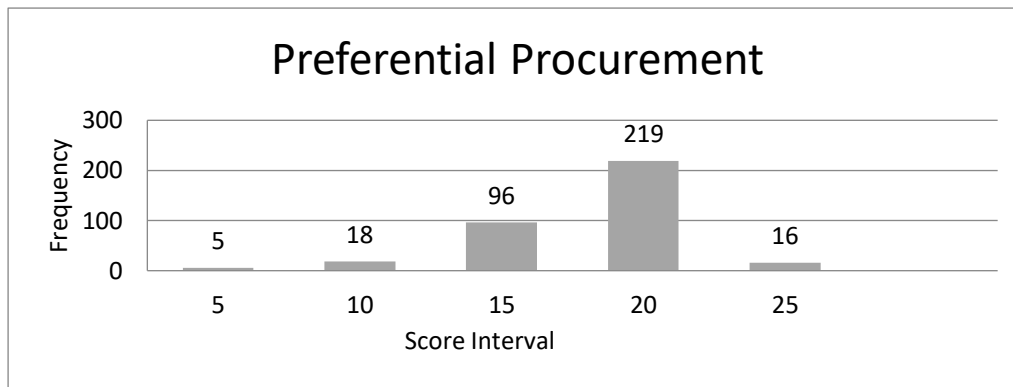**Figure 7**

Ownership score distribution
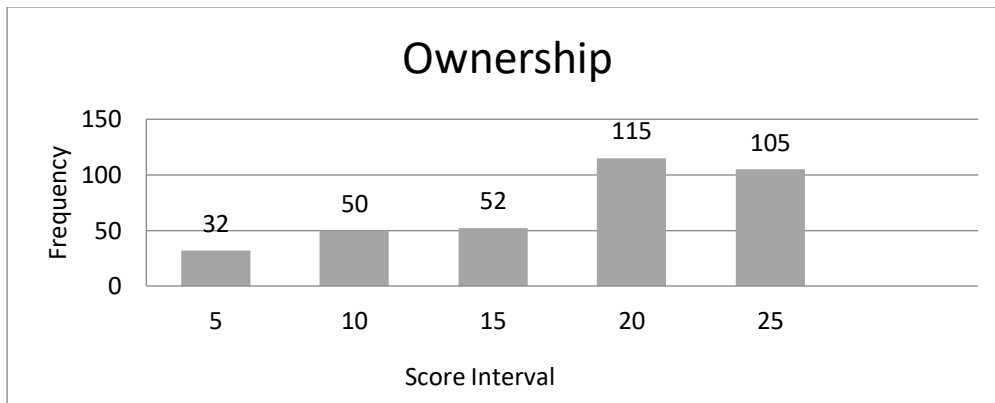
Figure 8

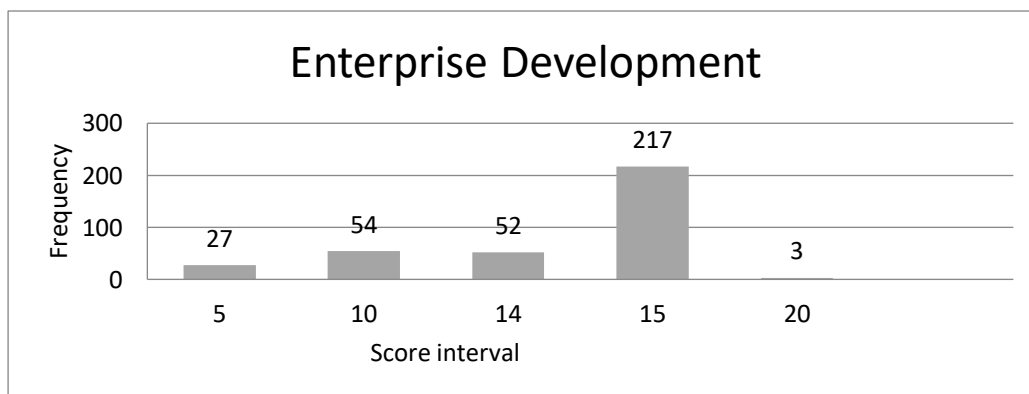*Skills development score distribution*

Figure 9

Preferential procurement score distribution

Preferential Procurement

Figure 10

Enterprise development

Enterprise Development

Enterprise development is comprised with supplying goods and services from black-owned businesses. These include direct costs incurred supporting black-owned businesses, discounts in addition to normal business practices to interest-free loans to black-owned Exempt Micro Enterprises (EME's) or Qualifying Small Enterprises (QSE's). We cannot infer whether true transformative practices have actually taken place but many firms have seemed to consistently obtain a perfect score of 15/15 in this element. It could be the case that these easily obtainable perfect scores are an indicator of poor compliance, resulting in a larger scorecard shock after the 2013 codes.

6.3.1 Hypothesis 3a: Ownership

For hypothesis 3a, each firms' score with respect to the sample set mean was categorised. Firms with means below the aggregate mean are classified as being "low" whereas firms above the mean are "high". Previous papers either tested for abnormal returns surrounding B-BBEE announcements or the share price performance with the associated B-BBEE score. Mathura (2009) provides a research recommendation into the challenge of analysing the 7 scorecard elements and financial performance. Mzilikazi (2016) explores the link between B-BBEE scores and financial performance and acknowledges that it remains unknown which of the 7 elements contribute to

financial performance. The author explains such information would incentivize companies to become more compliant as empirical evidence would suggest the benefits associated with each of the scorecard elements. Dreyers et al. (2021) research the different elements compliance evolution over the years leading up to the new law. This thesis takes a different approach testing for the robustness of firms B-BBEE scores against the amendment law by looking at the most important elements of the new scorecard. Table 7 list the results of the two-sample t-test.

Table 7

Ownership

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	34	1.294	0.265	1.548	0.754	1.834
1 (low)	32	2.25	0.424	2.396	1.386	3.114
Combined	66	1.758	0.252	2.046	1.255	2.261
Diff		-0.956	0.494		-1.942	0.030

Diff=Mean(0) - Mean (1)		t = - 1.937
Ho : Diff = 0		degrees of freedom = 64
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.029	P-value = 0.057	P-value = 0.971

Note: Two-sample t test with equal variances. Group 0 represents the scorecard change in the first year after the new law for firms with an above average ownership score. Group 1 represents the scorecard change for firms with below average ownership scores.

The mean represents the average scorecard change of the two groups. If the hypothesis is significant, the difference between these 2 should be negative. Firms heavenly invested in the ownership element have incurred a smaller scorecard shock than firms which were not. The means significantly differ from each other with an associated p-value of 0.057. In other words, firms which on average obtained high ownership scores, relative to other J203 index constituents, were more robust against the new law reform, experiencing smaller scorecard changes. This is a striking result as high ownership does not necessarily translate into high scores on the other element scorecards. In the next analyses, we aim to discover whether the effect is to be found in other major elements as well or strengthens in combinations.

6.3.2 Hypothesis 3b: Skills Development, Preferential Procurement, Enterprise Development

Table 8 repeats the same analysis for the element skills development. Skills development allocates points for funds spent on learning programmes for black people or people with disabilities in general, internships, learner ships or bursaries for black students pursuing a higher education. Bonus points can be achieved for the number of black people who are actually hired after such apprenticeships. Similarly, as in hypothesis 3a, the means were categorised and a two-sample t-test was performed.

Table 8

Skills Development

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	41	1.683	0.301	1.929	1.074	2.292

Group	Obs	Mean	Std. Err	Std. Dev.	95% Conf.	Interval
1 (low)	36	1.806	0.331	1.983	1.135	2.477
Combined	77	1.740	0.221	1.943	1.299	2.181
Diff		-0.123	0.446		-1.012	0.767

Diff=Mean(0) - Mean (1)			t = - 0.275
Ho : Diff = 0			degrees of freedom = 75
Ha : Diff < 0	Ha : Diff ! = 0		Ha : Diff > 0
P-value = 0.392	P-value = 0.784		P-value = 0.608

Note: Two-sample t test with equal variances. Group 0 represents the scorecard change in the first year after the new law for firms with an above average skills development score. Group 1 represents the scorecard change for firms with below average Skills Development scores.

The null hypothesis stating that the means of the scorecard change between these two groups are negatively different from each other, cannot be rejected. Skills development as a standalone element does not seem to be a predictor for scorecard change robustness. Table 9 and 10 repeat the analysis for preferential procurement and enterprise development.

Table 9

Preferential Procurement

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	39	1.410	0.324	2.022	0.755	2.066
1 (low)	39	2.077	0.337	2.107	1.394	2.760
Combined	78	1.744	0.235	2.079	1.275	2.212
Diff		-0.667	0.468		-1.598	0.265

Diff=Mean(0) - Mean (1)			t = - 1.425
Ho : Diff = 0			degrees of freedom = 76
Ha : Diff < 0	Ha : Diff ! = 0		Ha : Diff > 0
P-value = 0.079	P-value = 0.158		P-value = 0.921

Note: Two-sample t test with equal variances. Group 0 represents the scorecard change in the first year after the new law for firms with an above average preferential procurement score. Group 1 represents the scorecard change for firms with below average preferential procurement scores.

Preferential procurement refers to supplying goods and services from other B-BBEE compliant firms or wholly black-owned businesses. The null hypothesis of a mean difference in scorecard change cannot be rejected. However, looking at the p-value (0.079) of the alternative hypothesis, there is some indication of significance with respect to preferential procurement but not strong.

Table 10

Enterprise Development

Variable	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	37	1.568	0.294	1.788	0.971	2.164
1 (low)	36	1.611	0.368	2.207	0.864	2.358
Combined	73	1.589	0.233	1.992	1.124	2.054
Diff		- 0.044	0.470		-0.980	0.893

Diff=Mean(0) - Mean (1)		t = - 0.093
Ho : Diff = 0		degrees of freedom = 71
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.463	P-value = 0.926	P-value = 0.537

Note: Two-sample t test with equal variances. Group 0 refers to firms with above average enterprise development. Group 1 refers to firms with below average enterprise development.

We fail to reject the null hypothesis of equal means for enterprise development. Being B-BBEE compliant and highly invested in enterprise development did not predict robustness against a score change shock after the introduction of the new codes. Perhaps unsurprisingly as many firms consistently achieved a perfect score for this element over the years. This raises questions about the standards and verification process of enterprise development before the new law change. It will be interesting to view the evolution of this element after 2015 as preferential procurement and enterprise development are combined into the priority element enterprise and supplier development comprised of preferential procurement (25 points weighting), supplier development (10 points weighting) and enterprise development (5 points weighting).

The results point towards significance evidence of mean difference for firms heavenly invested in the ownership element and somewhat doubting results for the element preferential procurement. It could be that due to the unequal spread around the mean, high and low classifications are an accurate way to find significant results for ownership, but not for the other elements. Therefore, Figure 11 provides scatter plots for the different elements. The x-as refers to the maximum attainable score for each element, the y-as to the incurred scorecard shock under the new codes.

Figure 11

Scatter plot of the priority elements including preferential procurement

Ownership seems to have some indication of a linear relationship with respect to score changes. However, the observations are much more spread out around the mean compared to the other elements. Skills development and preferential procurement do not seem to convey a particular pattern with score change. The mean of enterprise and supplier development gravitates toward the upper end of the score interval, but firms still seem to incur a high scorecard change regardless. As noted above, firms in this element consistently obtained high scores without predicting any robustness against scorecard changes. In order to analyse the effect of pre-2013 codes elements compliance, Table 11 lists the regression results.

Table 11

Linear regression results for the relationship between score change and the 2013 codes priority elements

	Linear regression	
Variable	Basic linear regression Model 1	Including fixed year effects and robust st.errors Model 2
Ownership	- 0.12***	-0.12***
	(0.36)	(0.03)
Skills development	0.11*	0.08
	(0.07)	(0.05)
Preferential Procurement	-0.09	-0.07
	(0.81)	(0.09)
Enterprise Development	-0.05	-0.04
	(0.06)	(0.05)
Year		
2016		2.8***
		(0.66)
2017		2.8***
		(0.43)
2018		2.03***
		(0.45)
2019		2.13***
		(0.65)
Constant		2.22*
		(1.27)
Observations	71	71
F-statistic	4.74	3.1
R-squared	0.22	0.29
Adj. R-squared	0.18	

Note: Standard errors are in parentheses; *significant at the 10% level, ** significant at the 5% level, *** significant at the 1% level.

The regression includes 2 models: a basic linear regression (1) and a linear regression model including fixed-year effects (2). The author argues the latter model is the most appropriate form of testing our coefficients as firms implemented the 2013 codes in different years. A control test was performed to exclude the chance of specification errors surrounding the independent variables following Tukey's and Pregibon's methods for generalised linear models. Model 2 yields in a R-squared

of 29%. Looking at the coefficients, ownership yields in having a significant coefficient of -0.12 at the 1% level as it appears in model 1 as well. The ownership coefficient is economically meaningful. If average B-BBEE ownership scores increase by one standard deviation, the incurred scorecard shock decreases by 0.71 levels. A decrease by 0.71 levels equals a decrease in the average scorecard shock of 39%. The fixed-year effects provide more robust coefficient estimates. As the scatter plot pointed out, the other elements are not significant. Our model suggests that the element ownership is a significant predictor in partially explaining the scorecard shock. This is an interesting result as ownership only counts for 25% of the total scorecard calculation under the new codes. Ownership alone is thus unlikely to provide the significant result. It could be the case that high ownership scores serve as a proxy or predictor valuable for other variables that together explain the significance of our findings.

6.3.3. Hypothesis 3c: Ownership vs Skills Development, Ownership vs Preferential Procurement, Ownership vs Enterprise Development.

This part aims to identify whether the previous significant findings, with respect to ownership, are strengthened if combined with other elements. The first analysis relies on the combination of companies scoring above average high on ownership and skills development. Both elements receive decisive weight under the new law and form part of the three priority elements. Naturally, the combination of both higher average ownership and skills development has resulted in a lower sample. The sample compares companies scoring high ownership and skills development to companies that either score below average on both elements or only higher than average on the ownership element. Table 12 lists the results.

Table 12

High ownership and skills development vs high/low ownership and low skills development

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (above)	23	1.522	0.344	1.648	0.809	2.234
1 (below)	24	1.625	0.380	1.861	0.839	2.411
Combined	47	1.574	0.254	1.741	1.063	2.086
Diff		-0.103	0.514		-1.138	0.931

Diff=Mean(0) - Mean (1)		t = - 0.201
Ho : Diff = 0		degrees of freedom = 45
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.421	P-value = 0.842	P-value = 0.579

Note: Two-sample t test with equal variances: Group 0 refers to firms with above average ownership and skills development. Group 1 refers to firms with above and below average ownership and below average skills development.

The null hypothesis testing for the mean different equal to zero cannot be rejected. This confirms the notion high ownership scores do not necessarily lead to high scores in skill development. Table 13 repeats this analysis for combinations of low ownership and skills development only.

Table 13

High ownership and skills development vs low ownership and skills development

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	21	1.571	0.375	1.720	0.789	2.354
1 (low)	8	3.375	0.375	1.061	2.488	4.262
Combined	29	2.069	0.325	1.751	1.403	2.735
Diff		-1.804	0.655		-3.147	0.460

Diff=Mean(0) - Mean (1)		t = - 2.755
Ho : Diff = 0		degrees of freedom = 27
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.005	P-value = 0.010	P-value = 0.995

Note: Two-sample t test with equal variances. Group 0 refers to firms with above average ownership and skills development. Group 1 refers to firms with below average ownership and skills development.

Significant evidence to reject the null hypothesis at the 1% level of equal means was found. On average these firms incurred a mean scorecard change of 3.38 B-BBEE levels compared to 1.57. A larger dataset would be required to truly confirm the strengthening effect of above average ownership and skills development scores. Appendix Table 1 & 2 list the results for combinations of ownership with preferential procurement and ownership with enterprise development. Only extreme combinations to test for significance (high-high vs low-low) were included. Ownership and preferential procurement were found to be significant with respect to the mean difference at the 1% level as well. However, combinations of ownership and enterprise development was found to be insignificant.

The result of average combinations of ownership and enterprise development, do not seem to translate in smaller scorecard shocks. It could be the case, as noted above, that firms easily obtaining a perfect score for the element enterprise development, were not developing meaningful transformative practices within their company. Therefore, scoring high on ownership as a legitimate way of seeking transformation is indicative of a company's scorecard change, but not necessarily if the firm also engages in above average enterprise development practices. Enterprise development compliance in this case could serve as an indicator for weak transformation practices within the firm.

Given our significance in the ownership element however could mean that firms engaging in B-BBEE compliance ownership element are more committed towards transformative practices. Transferring equity of the firm is arguably the hardest and most costly way of B-BBEE compliance. On the one hand, by means of such commitment, these firms might have had more intrinsic motivation to adhere to the new measurements. These firms already installed transformative practices causing their scorecard shock to suffer less from the amended law. On the other hand, the ownership element might serve as a proxy or indicator variable for such B-BBEE compliance. Specific type of firms considering it important to be B-BBEE compliant, share the common statistic of scoring high on the ownership requirement. It is to this analysis this thesis now turns its attention to.

6.4. Hypothesis 4

For some industries, the B-BBEE scorecard forms the basis when concurring for governmental contracts, the sale of state assets or any type of private-public partnership. In addition, the link between CSR in the form of B-BBEE compliance could increase firm performance. The paper first argues that the competitive advantage reasoning would be concentrated among certain type of

industries. We categorised our sample according to the JSE industry denominations. Figure 5 displays the industry coverage of our analysed sample, comparing each respective industry with each other. Table 14 lists the results.

Table 14

Industry analysis

Industry	Average Scorecard shock	Average total	P-value Test	P-value One-sided alternative diff > 0	Number of Obs
Basic Materials	1.13	1.81	0.37		8
Consumer Goods	2	1.71	0.61		16
Consumer Services	2.14	1.65	0.33		22
Financials	1.36	1.88	0.29		25
Health Care	2.33	1.81	0.66		3
Industrials	1.85	1.76	0.9		13
Oil & gas	3.67	1.69	0.1*	0.05**	3
Technology	1.25	1.81	0.60		4
Telecom	2	1.76	0.82		4
Total					98

Note: *Significant at the 10% level, **significant at the 5% level and ***significant at the 1% level

Column 2 and 3 refer to the average incurred scorecard shock of each industry. The fourth column refers to the tested mean difference of the covered industry and the rest of the sample. The majority of the industries did not experience a significant mean difference in their scorecards with the notable exception of one industry: the Oil & Gas. The mean scorecard shock for this industry was 3.67 B-BBEE levels compared 1.69 for the other industries. The one-sided alternative positive mean difference is significant at the 5% level. Unfortunately, we do not have more observations in this category. In spite of the already skewed presence on the JSE (4 companies), the Oil & Gas industry was also one the least responding industries amongst participating companies.

However, in 2003 the LFC was among the first to voluntarily agree with B-BBEE compliance. The charter included the objective of transferring 25% ownership or control of all facets to HDSA. In 2010, the department of energy commissioned an audit to assess the state transformation. With respect to ownership, the average effective black shareholdings stood at 18.91% but the majority of these black shareholders were passive. Black women representation was 6.72%. Management control was the highest scoring element in the LFC and B-BBEE. Other LFC elements include capacity building, employment equity and supportive culture, procurement and access to joint infrastructure & wholesaling. The average performance rate for the LFC was 48% compared to a 62% compliance rate for the B-BBEE framework. The weakness of the LFC as compared to the B-BBEE framework is that weights, targets (except ownership and management control) and categories were not clearly defined. In addition, the LFC does not include priority elements such as crude procurement and special enterprise development initiatives. The 4 biggest bottom performing elements in both the LFC and B-BBEE were enterprise development, skills development, employment equity and preferential procurement. This has resulted in a slow transformative progress with respect to transferring skills and job training. Through the element enterprise development, black entrepreneurs have missed out on the opportunity to meaningfully participate in this part of the economy (Department of Energy, 2017). The highest scoring elements only involve a narrow phase of beneficiaries, resembling limited

transformative practices as in the first phase of BEE. Part of the equation in low compliance levels could lie in that the industry is more comprised with attaining sustainability goals, potentially explaining the larger shock with respect to the scorecard of the Oil & Gas industry.

In 2017, the government formed several committees with the aim of harmonising the LFC and B-BBEE to create a future framework ensuring rewarding compliance on sectoral agreement and dis-incentivising non-performance. The author repeated the industry sample analysis to each individual industry shock, yielding in the same significant results. All other industries do not seem to have experienced a significant differential scorecard shock to the average. In spite of our analysis coinciding with the state of transformation in this sector published by the government in 2010, these results have to be taken lightly with respect to the limited coverage of this industry in our dataset.

7. Evolution of the B-BBEE compliance scores

7.1 Evolution of the scores between 200-2021

This part analyses the evolution of the scorecards before and after the implemented law. Dreyers et al. (2021) paper studied JSE listed firms B-BBEE scores from 2004 until 2015 and find a positive trend. The authors did not include the 2016 observations due to the 2013 new codes. On the one hand, as the 2007 and 2013 codes are based on a different scaling, comparing both over the covered period would not provide an accurate image. On the other hand, analysing the scores from the start of the 2013 codes would only convey the evolution of the scores after the law, without a reference framework towards previous compliance levels. This thesis therefore attempted to provide a rescaling model that makes it possible to compare the total evolution of the scores under both frameworks. Table 15 compares the score distribution per element for the 2007 and 2013 codes.

Table 15

Comparison of the 2007 and 2013 Codes (points allocated per element)

Element	2007 Weighting pts.	2013 Weighting pts.
Ownership	20 + 3 bonus points	25
Management control	Management control 10 + 1 bonus pts Employment equity 15 + 3 bonus pts	15 + 4 bonus pts
Skills development	15	20 + 5 bonus pts
Supplier development	Preferential procurement 20 Enterprise development 15	40 + 4 bonus pts
Socio-economic development	5	5
Total available	107	118

Source: Werksmans (2014). Amendments to the B-BBEE Act and the codes explained.

As there are more observations before the legislative change then after, the scores are rescaled to the 2007 codes. This proved to be more reliant than attempting to change old scores with the new scoring mechanism. For the purpose of analysing the evolution of the scorecards, the total scores were included, not the corresponding B-BBEE levels. As can be seen from Table 16, B-BBEE scores can fluctuate within one interval corresponding to the same level of B-BBEE compliance. Analysing solely integer B-BBEE level values could therefore hide results. Meaningful transformation can occur by achieving higher scores within the same B-BBEE level.

With the implementation of the 2013 codes, some firms were able to receive a high score, but were subsequently punished with a one level decrease if they did not attain the minimum requirements. The author argues in this case the attained score is a better reflection of the transformative practices than looking at the discounted B-BBEE level. Where scores were not available but B-BBEE levels were, the average value between the scale corresponding to the level was chosen. Non-compliance and level 1 scores, unless specifically mentioned, were taken as the maximum (30) and minimal value (100). Therefore, these scores provides a minimal bound for both levels.

Table 16

B-BBEE compliance levels (2007 vs 2013)

	Codes of Good practise	
B-BBEE contributor level	2007	2013
1	≥ 100 points	≥ 100 points
2	≥ 85 but < 100 points	≥ 95 but < 100 points
3	≥ 75 but < 85 points	≥ 90 but < 95 points
4	≥ 65 but < 75 points	≥ 80 but < 90 points
5	≥ 55 but < 65 points	≥ 75 but < 80 points
6	≥ 45 but < 55 points	≥ 70 but < 75 points
7	≥ 40 but < 45 points	≥ 55 but < 70 points
8	≥ 30 but < 40 points	≥ 40 but < 55 points
Non – compliant	< 30 points	< 40 points

Note: The first column refers to the level of B-BBEE compliance. Column 2 and 3 both refer to the scorecard intervals under each of the respective codes. *Source*: Werksmans (2014). Amendments to the B-BBEE Act and the codes explained
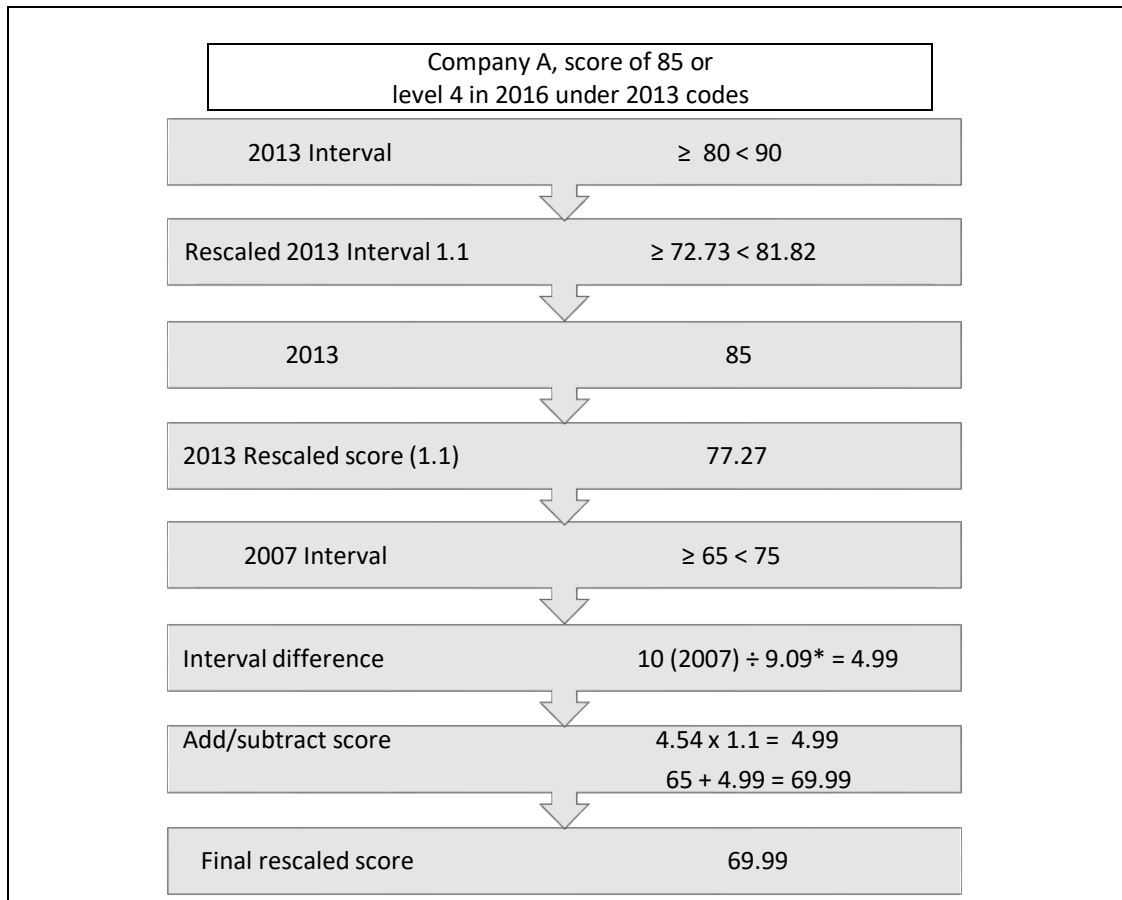
The rescaling involves 3 elements:

o   rescaling the scores based on the 2013 codes
o   rescaling the intervals
o   rescaling the rescaled 2013 scores to the correct interval distribution.

First, as the 2013 and 2007 maximum attainable points were 118 and 107 respectively, the 2013 scores were rescaled by 1,1. Similarly, the 2013 intervals were rescaled by the same factor. This causes the scores as well as the intervals to be rescaled to 107. The next step was to equal the distance between the level intervals. For this purpose, the difference between the rescaled intervals of 2013 and the distance of the 2007 interval corresponding to the same level, was calculated. Dividing the difference between the interval in 2007 by the rescaled 2013 interval difference yields in the interval scaling factor. The last step was to take the rescaled score of 2013, subtract the lower rescaled bound of the 2013 interval, multiply the difference with the interval scaling factor and add the result to the 2007 lower bound of the interval.

To illustrate, company A receives a score of 85 in 2016 under the new 2013 codes.

Table 17

Rescaling example

Company A, score of 85 or level 4 in 2016 under 2013 codes	
2013 Interval	≥ 80 < 90
Rescaled 2013 Interval 1.1	≥ 72.73 < 81.82
2013	85
2013 Rescaled score (1.1)	77.27
2007 Interval	≥ 65 < 75
Interval difference	10 (2007) ÷ 9.09* = 4.99
Add/subtract score	4.54 x 1.1 = 4.99 65 + 4.99 = 69.99
Final rescaled score	69.99

*Note: * Difference between the rescaled 2013 interval. Source: compiled by author*

The rescaling method proves to be robust. Not only does it reflect the relative level of compliance on the 2007 scale, it also adequately reflects the yearly score changes of the 2013 codes but on the 2007 scale.

By rescaling the 2013 codes, a comparison between the relative increased/reduced level of compliance before and after the legislative change became possible. Figure 12 shows B-BBEE compliance over the covered years.

Figure 12

B-BBEE (mean) compliance scores 2009-2021
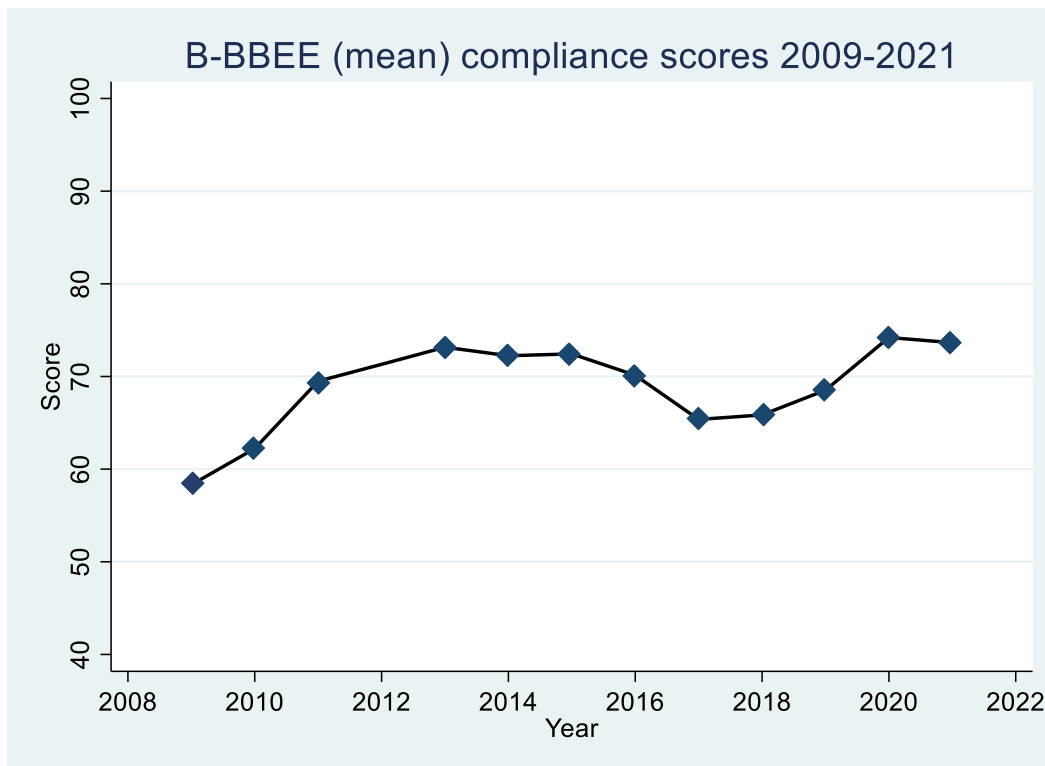
B-BBEE scores increased from 2009 until 2012. The average B-BBEE compliance score in that period increased from 58.31 to 72.24 or from a corresponding level 5 to the higher bound of the level 4 interval. As hypothesis 1 proved, firms experienced a shock in their scorecard after the 2013 codes. It is this examined shock, rescaled on the 2007 codes that can be seen in Figure 12 between 2015 and 2017. The average B-BBEE compliance score in this period decreased from 72.44 to 65.37.

The years 2012 until the end of 2014 are characterised by a plateau in the evolution of B-BBEE compliance scores. This could potentially be explained as the 2013 Codes of Good Practise were first scheduled for implementation in August 2014, but was extended until 2015. Firms are likely to have stopped investing in transformative practices as a result of uncertainty of the new verification practices. International literature has shown that uncertainty affects multinationals speed of international expansion, internationalization paths, entry mode choices, and level of commitment (Sniazhko, 2019). The transition period towards the 2013 B-BBEE codes is likely to have impacted the firm's environmental uncertainty. As firms operating performance (some more than others) through one form or another could depend on obtaining a high B-BBEE score, uncertainty about the economic impact of the regulations and verification standards could have halted firm's further compliance. In spite of the systematic nature of the 2013 codes scorecard shock, some firms appeared to have been better robust (see point 6.3.1) against scorecard changes. This robustness of firms was not confounded in any particular type of industries except for the Oil & Gas industry, experiencing a statistically significant larger shock than the other industries. As a consequence of these idiosyncratic differences in scorecard shocks, firms might have feared to lose part of their market share to industry peers, experiencing a relatively smaller scorecard shock. Therefore, firms delayed further compliance until the first score with the 2013 codes.

Besides the environment, government uncertainty could have simultaneously caused levelling B-BBEE efforts. These include the inability to predict regulatory developments such as reforms and regulations. As the scoring mechanism was already published in 2013, firms were to a certain degree able to prepare for the scorecard changes. Of course, uncertainty remained due to the independent rating agencies B-BBEE audit and specifications of the 2013 model, extending further compliance until the first rating under the new codes. After 2018, scorecards scores improved from 65.85 to 73.65 in 2021, pointing towards a removal of government uncertainty surrounding amendments in the transition period.

An alternative explanation for the plateau could be because firms were already content with the attained level of B-BBEE for their own purposes. Mzilikazi (2015) finds that there seems to be a peak for compliance benefits, after which compliance costs exceed compliance benefits.

As stated earlier, not all companies verified their B-BBEE score with the 2013 codes directly in 2015. In fact, the majority of the sample postponed their verification to the years 2016-2017. In order to analyse the evolution of the compliance even further, Figure 13 provides the split sample with respect to the first years of transition to the new codes. Since observations in 2009 were too small in each sample, our dataset starts in 2010.

Figure 13

B-BBEE (mean) scores 2010-2021
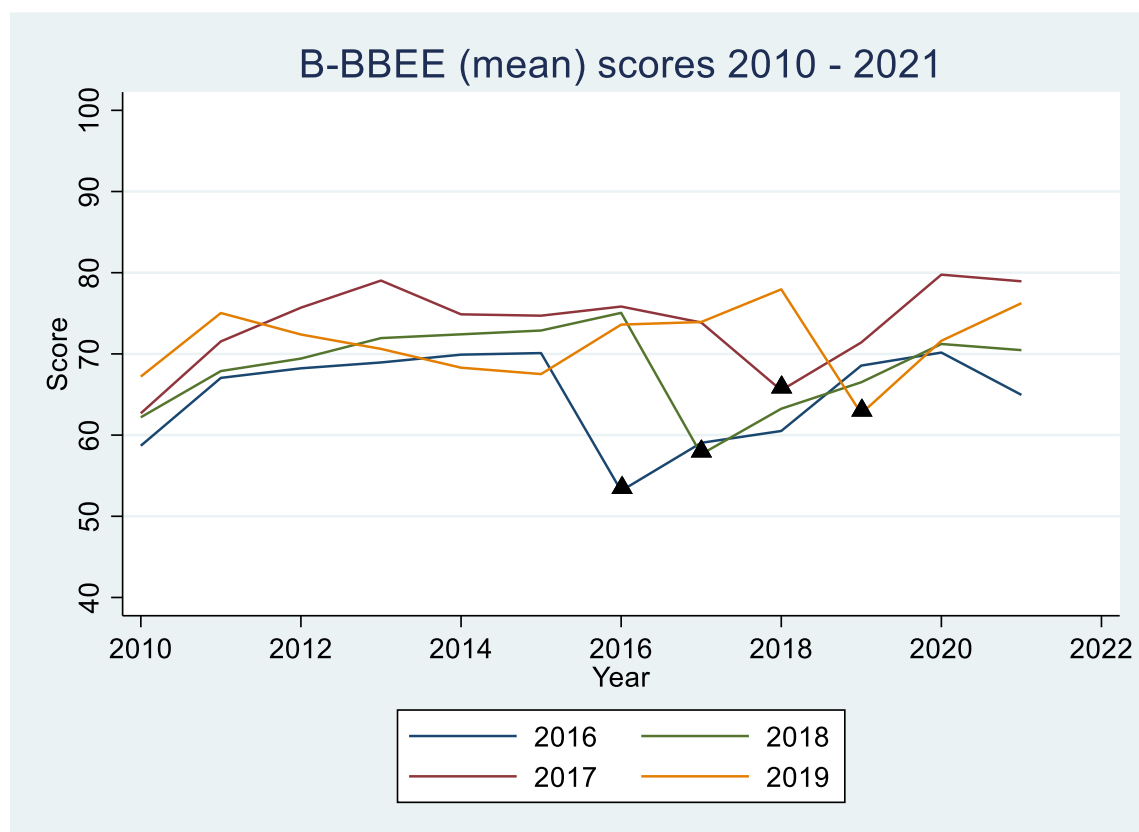
Note: 2016 to 2019 refers to the year in which companies received their first rating under the 2013 codes.

The graph points towards the same stagnating plateau after 2012 until the first implementation of the new score except for firms adopting the 2013 codes in 2019. This group seems

to have been increasing their compliance efforts with the 2007 codes in the years leading up to the change. One potential explanation is the competitive advantage argument mentioned above. After the respective firms in 2016, 2017 and 2018 received their new rating, they immediately increased compliance efforts in the following years. Since obtaining a score under the 2013 codes is more difficult, the 2019 firms compensated the competitors earlier increase in compliance efforts by increasing their own compliance efforts as well but under the 2007 codes. This could simultaneously explain why the 2019 firms did not experience a smaller shock than the rest of the sample. By increasing compliance levels on the 2007 codes, they did not protect themselves against the more rigorous requirements of the 2013 codes. The level of the shock is not dependent on the year in which firms decided to adopt the 2013 codes. Late 2013 codes adopters did not use the time to install transformative practices against the new codes. After the shock, all firms corresponding to all years increased their compliance efforts.

Note that the rescaled scores increase after the new law are actually lower estimates of the true increases in B-BBEE compliance. Since obtaining a high B-BBEE score under 2013 codes is more difficult (DTI, 2013), score increases after the shock in reality represent more transformative practices and steeper compliance increases.

7.2 Testing for increases in B-BBEE scores

Hypothesis 5 states that the evolution of the scores after the implementation of the 2013 codes is positive. However, due to the high levels of fronting and minimum requirements, firms could have halted B-BBEE compliance or adopt levelling scores. The results convey information about the degree of implemented change after the introduction of the new codes and state of transformation. The paper first tests the evolution of mean B-BBEE scores from 2009 until 2021. Table 18 lists the analysis of the variance (ANOVA). The Tukey tests is used as a post-hoc ANOVA test in case of significant results. This test finds whether the year-on-year means are significantly different using a pairwise single-step multiple comparisons. The Levene's test of equality of the variances between the mean scores of the years was first calculated to not violate the normality assumption of the Tukey test. Table 18 posts the ANOVA results the respective years from 2009 until 2021 with the rescaled 2013 codes B-BBEE scores after the year of each firm's respective implementation.

Table 18

Analysis of mean B-BBEE score variance between 2009 - 2021

Effect	Source	Sum of squares	*Degrees of freedom*	F	P
2016	Between groups	77440.5	11	2.2	0.0156
	Within groups	66813.3	217		
2017	Between groups	8373.4	11	2.15	0.0173
	Within groups	106755.2	301		
2018	Between groups	5247	11	1.33	0.2107
	Within groups	88540.5	246		
2019	Between groups	858.5	2	1.43	0.2525
	Within groups	10180.8	34		

Note: Effect corresponds to the year in which firms received their first scores under the 2013 codes. Source: compiled by author

The F-value of the ANOVA results for firms adopting the 2013 codes in 2016 and 2017 equals 2.2, 2.15 in combination with a p-value of 0.0156 and 0.0173, respectively. The ANOVA tests for the years 2018, 2019 yield in less significant results. A considerable larger sum of squares is explained by the between groups mean difference in B-BBEE scores in the years 2016, 2017 than in 2018 and 2019. The corresponding p-values of the years 2016 and 2017 are significant enough to reject the null hypothesis. However, used in conjunction with a relatively low F-statistic, there is not significant evidence to suggest a yearly mean difference in B-BBEE scores. The Tukey honest significance test for mean increases in the year 2016 and 2017 confirm our suspicion and does not find any significant increases. As expected from the low ANOVA results in 2018 and 2019, the Tukey test does not find meaningful year on year mean increases for these years either. This both contrasts and confirms the results found in Dreyers et al. (2021). On the one hand, the Tukey test does not find statistical year on year difference between 2009 and 2011. On the other hand, the test, as in the researchers' paper, finds insignificant results from 2012 until 2015, represented by the plateau in B-BBEE scores. One potential explanation for the significant findings in Dreyers et al. (2021) could be due to the early inception of B-BBEE compliance. Over the covered years 2004-2011 firms were obtaining higher scores until satisfactory levels or until the point where it became difficult to increase scores without actually implementing transformative practices. The results in this paper point towards the gradual but certain increase of B-BBEE after the adoption of the new codes. Given the more rigorous 2013 codes standards, these scorecard changes are more likely to result in actual transformative practices.

We repeated the analysis (ANOVA and Tukey) but this time with the actual scores from the 2013 scorecards. As mentioned above, the rescaled scores provide a lower estimate of the true increase in compliance scores. The ANOVA results are comparable than the ones for the total sample, with the notable exception for companies that implemented in the year 2016. Therefore, only the Tukey test results for the mean increase per year from 2016-2021 is listed. Table 19 lists the single-step multi-comparison procedure test results for the yearly mean B-BBEE score difference.

Table 19

Tukey honest significant difference test mean B-BBEE scores for firms implementing the 2013 codes in 2016

Years	Mean B-BBEE Score Change	P-value
2017 vs 2016	5.88	0.91
2018 vs 2016	10.14	0.5
2019 vs 2016	17.61**	0.034**
2020 vs 2016	17.61**	0.034**
2021 vs 2016	16.7	0.18
2018 vs 2017	4.25	0.98
2019 vs 2017	11.72	0.36
2020 vs 2017	11.72	0.36
2021 vs 2017	10.8	0.66
2019 vs 2018	7.5	0.8
2020 vs 2018	7.5	0.8
2021 vs 2018	6.56	0.94
2020 vs 2019	0.00	1.00
2021 vs 2019	-0.91	1.00
2021 vs 2020	-0.91	1.00

Note: The second column refers the mean scorecard change between the respective years. *Significant at the 10%, **significant at the 5%, ***significant at the 1%.

Significance results for hypothesis 5 with respect to the mean B-BBEE scores appear for the year 2019 and 2020 compared to the first score in 2016 using the actual scores. The average mean score increase for these years was 17.61 between 2019, 2020 and 2016 (the year in which firms adopted the 2013 codes), statistically significant at the 5% level. The results confirm firms increased their respective B-BBEE score from their bottom levels (at least for the companies that implemented the new codes in 2016) in the years 2019 and 2020. As can be seen from Figure 12, the mean B-BBEE scores decreased from 2020 to 2021, most likely, as a result from the COVID-19 crises. Therefore, the test does not find significance mean difference between 2021 and 2016. In spite of the firms receiving their first rating in 2017, 2018 and 2019 improved their respective compliance efforts over the years as well, the yearly scores do not significantly differ from each other to support these findings using multiple mean comparison tests.

The results provide evidence that B-BBEE compliance increases gradually. It takes time before the effects become statistically significant under the multiple comparison test. Significant results appear for the difference in mean B-BBEE scores between the year 2016 and 2020, 2021 but not for the other years.

7.3 Mean B-BBEE score difference analysis from the first year of implementation

The author repeats the analysis for significant mean difference between the 2021 scores and the first score under the 2013 codes using a two-way sample t-test. The results are listed in appendix under Tables 3 to 6. The mean score changes from the 2021 level for the firms that underwent their first new score in 2016 and 2017 is statistically significant at the 1% and 5% level, respectively. Firms have increased their compliance scores from their bottom levels after the implementation of the 2013 scores. For firms receiving their first score in 2018, the effect is only statistically significant at the 10% level for the one-sided alternative hypothesis. The 2019 firms score change was not significantly different from each year's change. This supports the notion that B-BBEE scores have increased gradually after the implementation of the 2013 codes. Through one mechanism or another, B-BBEE compliance remains an important aspect of conducting business. In spite of the more rigorous 2013 codes, B-BBEE scores have increased from their bottom levels. B-BBEE scores thus add value for the firm operating business practices.

8. Conclusion

B-BBEE forms a major part of South Africa's NDP, overcoming the legacies of the colonial history and Apartheid to form an economy in which all the people of South Africa can meaningfully participate. As part of the history of South Africa, the largest ethnic group has been excluded in building the country. B-BBEE is a growth strategy, targeting the South African economy at its weakest point: inequality. Compliance of large firms to the codes is essential for B-BBEE to install change and become common practice at the heart of the business economy. This thesis aimed to provide an answer to the question: what was the effect of the 2013 Codes of Good Practise on B-BBEE compliance and the evolution of the state of transformation in South Africa?

Firms on average experienced a shock in their scorecard of 1.8 levels upon the adoption of the 2013 codes. Above average scores on the priority element ownership seems to be a predictor for firms experiencing smaller scorecard shocks. The regression output confirms the statistical and economic significance of ownership. A one standard deviation increase in ownership compliance yielded in a 0.71 level smaller score change. Given the r-squared of the model, the author argues

above average ownership is seen as a proxy for B-BBEE compliance. These companies are more committed to install transformative practices. In contrast, high compliance levels in enterprise and development management are a weak predictor of scorecard robustness and B-BBEE compliance as a whole. Firms were able to consistently obtain high scores in this element, boosting B-BBEE compliance levels without adding value.

The industry analysis confirms that the shock in B-BBEE levels was not confounded in any particular industry except for one, the Oil & Gas industry. In general, firms in this category incurred a scorecard shock of 3.7 levels vs 1.8 for the rest of the sample. The Oil & Gas industry still has a long way to go before attaining the same level of B-BBEE compliance as the other industries. The harmonisation of the LFC and the B-BBEE framework could impact regulatory oversight and incentivize firms' compliance in this industry.

In contrast to the research of Dreyers et al. (2021) B-BBEE levels did not significantly increase from 2009 until 2011. From 2012 until 2015, B-BBEE levels were levelling as a result of uncertainty surrounding the new 2013 codes. After firms received their first score under the new law, B-BBEE scores annually increased from its previous levels.

Although the transformation is gradually, this sketches a positive image for the state of transformation in South Africa overcoming the colonial and Apartheid economy. Slowly, the public sector, as a vehicle of change, is making an impact to support the once envisioned Rainbow Nation. B-BBEE policy could focus on making the act more inclusive allowing various parties to participate in the drawing of the codes. This will increase compliance for industries where the government cannot exert leverage. The use of public-private partnerships has potential in emerging markets, facilitating economic growth and reducing inequality. Large firms play a major role in facilitating this transition.

The establishment of a broad based black South African middle class still has a long way to go. Economic integration programmes are not new, but South Africa is unique in the international context. The Black and Hispanic population in the United States of America account for 31%. Australia's indigenous population equals 3.4%. The uplifting of poverty for Malaysians (50%) went hand in hand with increasing wealth gaps, benefitting an elite population (Sartorius and Botha, 2008). In 1996, the HDSA consisted of 88.6% of the population. Therefore, the hurdle to establish equality and economic participation, is a unique situation. Investing in the skills and education of the South African can be a catalyst for organic economic growth for the country to move forward. Increasing competitiveness will lead to more transformation, facilitating a quicker scaling journey. With time, the legislative push of B-BBEE to create equality will fade away and become part of the inclusive economy as the skills gap between ethnicities resolves. The results of this paper point towards increased B-BBEE compliance to drive this change.

9. Limitations and future research

The paper researches a sample from the J203 index. Representative of the JSE index, more observations of individual firms will lead to richer results. Especially, the study of B-BBEE compliance in the Oil & Gas companies and the private sector will advance B-BBEE literature. The research argues ownership is a powerful predictor for B-BBEE compliance. Extending the literature by finding other common characteristics can help policy shaping identifying the convincing strengths of B-BBEE. Related to the former point is the study of why companies are engaging in B-BBEE. Qualitative survey data could convey insights through which mechanism (Profitability vs CSR) B-BBEE is influencing firm compliance. In June 2020, president Ramaphosa addressed parliament stating: "BEE is here to stay". Qualitative studies could simultaneously help define obstacles to B-BBEE compliance. Through

collaboration between the public and private sector, open to initiatives from multiple parties, B-BBEE can become more inclusive, creating a broader support base.

Follow-up studies should delve into the further evolution of B-BBEE scores. This can help distinguish whether there are limits to B-BBEE compliance benefits. An inclusive study into the priority elements compliance could convey meaningful insights into whether the new Codes of Good Practice are attaining their goals focusing more on skills development and enterprise and supplier development.

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Appendix

Table 1

High Ownership and Preferential Procurement vs low Ownership and Preferential Procurement

Variable	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	28	1.321	0.326	1.722	0.654	1.989
1 (low)	16	2.938	0.528	2.112	1.812	4.063
Combined	44	1.909	0.303	2.009	1.298	2.520
Diff		- 1.616	0.586		-2.799	-0.433

Diff=Mean(0) - Mean (1)		t = -2.756
Ho : Diff = 0		degrees of freedom = 42
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.004	P-value = 0.009	P-value = 0.996

Note: Group 0 refers to firms with above average ownership and preferential procurement. Group 1 refers to firms with below average ownership and preferential procurement.

Table 2

High Ownership and Enterprise Development vs low Ownership and Enterprise Development

Variable	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0 (high)	29	1.414	0.360	1.937	0.677	2.151
1 (low)	23	2.217	0.541	2.593	1.096	3.339
Combined	52	1.769	0.314	2.263	1.139	2.399
Diff		- 0.804	0.628		-2.065	0.459

Diff=Mean(0) - Mean (1)		t = -1.280
Ho : Diff = 0		degrees of freedom = 50
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.103	P-value = 0.207	P-value = 0.897

Note: Group 0 refers to firms with above average ownership and enterprise development. Group 1 refers to firms with below average ownership and enterprise development.

Table 3

Mean score change for firms adopting 2013 codes in 2016

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0	68	5.390	1.705	14.062	1.986	8.793
1	21	14.686	2.390	10.952	9.700	19.671
Combined	89	7.583	1.475	14.913	4.652	10.514
Diff		- 9.296	3.348		-15.951	-2.641

Diff=Mean(0) - Mean (1)		t = -2.777
Ho : Diff = 0		degrees of freedom = 87
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.003	P-value = 0.007	P-value = 0.966

Note: Group 0 refers to the yearly mean changes and group 1 refers to the mean change between 2021 and 2016.

Table 4

Mean score change for firms adopting 2013 codes in 2017

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0	85	4.628	2.315	21.344	0.024	9.231
1	33	13.328	3.697	21.236	5.798	20.858
Combined	118	7.061	1.987	21.582	3.126	10.995
Diff		- 8.700	4.372		-17.359	-0.041

Diff=Mean(0) - Mean (1)		t = - 1.990
Ho : Diff = 0		degrees of freedom = 116
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.025	P-value = 0.049	P-value = 0.976

Note: Group 0 refers to the yearly mean changes and group 1 refers to the mean change between 2021 and 2017.

Table 5

Mean score change for firms adopting 2013 codes in 2018

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0	45	7.022	1.580	10.599	3.838	10.206
1	27	10.924	2.720	14.133	5.333	16.515
Combined	72	8.485	1.426	12.099	5.642	11.329
Diff		- 3.902	2.929		-9.745	1.940

Diff=Mean(0) - Mean (1)		t = - 1.332
Ho : Diff = 0		degrees of freedom = 70
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.094	P-value = 0.187	P-value = 0.906

Note: Group 0 refers to the yearly mean changes and group 1 refers to the mean change between 2021 and 2018.

Table 6

Mean score change for firms adopting 2013 codes in 2019

Group	Obs	Mean	Std . Err	Std. Dev.	[95% Conf.	Interval]
0	12	8.231	3.443	11.928	0.652	15.810
1	13	9.053	3.129	11.283	2.235	15.871
Combined	25	8.658	2.272	11.360	3.969	13.347
Diff		- 0.822	4.642		-10.425	8.781

Diff=Mean(0) - Mean (1)		t = - 0.177
Ho : Diff = 0		degrees of freedom = 23
Ha : Diff < 0	Ha : Diff ! = 0	Ha : Diff > 0
P-value = 0.431	P-value = 0.861	P-value = 0.570

Note: Group 0 refers to the yearly mean changes and group 1 refers to the mean change between 2021 and 2018.

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