Black Economic Empowerment and economic performance in South Africa*

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Non-technical Policy Brief

We lay out a conceptual framework for evaluating the impact of BEE on economic growth, both directly through its effects on firm behavior and indirectly through its impact on political stability. We emphasize that because of the way the phenomena of BEE has evolved since its inception in 1993, the extent and form of BEE are unlikely to be optimal from the point of view of economic growth. This suggests that there may be possibilities for making growth enhancing reforms.

A priori, there are good arguments that suggest that several of the components of BEE could have positive and/or negative effects on productivity and investment and hence on growth. Which of these effects are stronger is an empirical question. We use data on the BEE ratings of companies from Empowerdex along with a dataset of companies listed on the JSE to examine the effects of the aggregate BEE score of a company (according to the BEE scorecard) and the BEE Ownership score, on investment, labor productivity and profitability. The heart of this analysis are two firm level identification strategies using the allocation of the investment portfolio of the PIC and the presence of a single shareholder with 50% or more of the equity, as sources of variation in BEE across firms. Both of these variables strongly predict the extent to which an individual firm engages in BEE, and the second plausibly predicts the BEE ownership share. The main result of these regressions is that so far, BEE seems to have had very little impact on firm behavior. If anything there is weak evidence that both BEE in general, and the BEE ownership score, has a negative effect on investment and labor productivity, though this is not statistically significant at standard confidence levels.

There are several possible interpretations of these findings: (1) Data problems make inference difficult to impossible. (2) It is too early to empirically test for BEE's implications for the economy, (3) The economic costs and benefits of BEE cancel each other out so that the aggregate effect is zero, (4) The big issue may be the aggregate effects (avoidance of populism) which we cannot estimate at the firm level, (5) BEE actually does not have large effects on firm behavior though it does influence distribution.

Even though it is difficult to say which of these views is correct, there exists a solid basis

to make some policy recommendations on BEE. This is because it is clear that some aspects of BEE are quite unsatisfactory and there clearly are areas where the policy needs to be clarified and amended. The arguments in this paper suggest three main policy conclusions.

The first follows from the fact that a priori arguments suggest that while the emphasis on the transfer of ownership in BEE may have been important in the decade after 1994 for provisionally securing property rights, it is unlikely to have large positive effects on firm productivity or economic growth. Moreover, enduring property rights security certainly requires a broader base than can be provided by such a policy. We therefore believe that the policy needs to be changed to de-emphasize ownership and increase the focus on aspects of it more clearly linked to increased productivity and the broader transformation of the economy. A simple policy to achieve this would be:

- The weights in the BEE Codes should be changed to downgrade ownership and increase the importance of enterprise development and skills development.

The second clearly problematic nature of the policy at the moment is that it is both open ended and there is no mechanism in place for evaluating its impact on any of the outcomes it is supposed to influence. While industry charters set various targets for future dates, they do not say what happens after this. This creates uncertainly in the minds of businessmen and investors. Though basic economic analysis suggests that BEE ought to be only a transitory policy, we also note that it may not be desirable for the government to announce a terminal date. The appropriate response is to immediately create an institution that can properly evaluate the policy by 2014 when many targets are supposed to be met and be in the position to make a rational decision about the future of the policy. To this end a second BEE commission ought to be formed now. This leads to our second policy conclusion:

- Announce BEECom2.

Nevertheless, to evaluate a policy properly, one must have good information about it. There is at the moment widespread scepticism about the existing data on the extent of compliance with BEE. It is therefore crucial that the government creates a mechanism to establish credible data collection. We believe there is a simple solution to this.

- Link BEE verification with financial auditing.

1 Introduction

After the transition from Apartheid in 1994, the government of the African National Congress (ANC) considered that the creation of greater political equality in itself, though necessary, was not sufficient to unwind the inherited social and economic inequalities. To deal with the legacy of Apartheid, direct intervention in the distribution of assets and opportunities was deemed desirable and the central pillar of this intervention became Black Economic Empowerment (BEE, now B-BEEE – Broad-Based BEE). BEE was defined in 2001 by the BEE Commission as follows (BEE Commission Report, p. 2):

> "It is an integrated and coherent socio-economic process.
>
> It is located within the context of the country's national transformation programme, namely the RDP (Reconstruction and Development Programme)
>
> It is aimed at redressing the imbalances of the past by seeking to substantially and equitably transfer and confer the ownership, management and control of South Africa's financial and economic resources to the majority of the citizens.
>
> It seeks to ensure broader and meaningful participation in the economy by black people to achieve sustainable development and prosperity."

In essence, BEE is about attempting to create a degree of economic equality which would not itself be a natural market outcome of the changed political environment. Such a policy has been a commitment of the ANC at least since the formulation of the Freedom Charter in 1955 which stated

> "The national wealth of our country, the heritage of South Africans, shall be restored to the people; The mineral wealth beneath the soil, the Banks and monopoly industry shall be transferred to the ownership of the people as a whole; All other industry and trade shall be controlled to assist the wellbeing of the people;"[1]

Such a goal was also confirmed by Nelson Mandela after his release from prison and during his first public address to South African big business in May 1990

[1] http://www.anc.org.za/ancdocs/history/charter.html

> "it is quite obvious that the economic power relations represented by the excessive concentration of power in a few white hands have to change ... one of South Africa's imperatives is to end white domination in all its forms, to deracialise the exercise of economic power".

In this paper we provide a preliminary analysis of BEE with a particular eye on the impact of the policy on firm behavior and performance and economic growth. In section II of the paper we give an overview of the history and phases of BEE (and B-BBEE) and discuss how the policy operates at the moment. In section III we address the question of the relationship between BEE and economic growth. We analyze what sorts of problems BEE has been designed to solve and whether there exist other instruments which could have been used to achieve the same aim. There can be many ways to evaluate such a policy and the criteria for evaluation is not necessarily the impact of the policy on the rate of economic growth. Nevertheless, our focus is on the impact on economic growth. We provide a careful discussion of the potential mechanisms linking BEE to economic growth and the likely costs and benefits of the policy for firms. There is a large amount of uncertainly about the magnitude and even the sign of various effects and the next three sections therefore attempt to develop a credible empirical strategy for estimating the effect of BEE on firm performance. Section V discusses the empirical problems of estimating the effects of BEE on firm performance and describes our empirical strategy. Section VI discusses the data we use and section VII presents various types of econometric estimates of the impact of BEE on firm profitability, labor productivity, and investment. Section VIII concludes with a discussion of what policy implications can be drawn from our study.

2 The Phases of BEE

2.1 Phase 1: Uncoordinated policy, 1993-1999.

The origins of BEE are at the moment of transition from Apartheid. Though the notion was referred to in the government's 1994 Reconstruction and Development Programme, it was in fact the private sector which created the first wave of initiatives. These involved almost wholly the transfer of equity from a white company to a black person or black run company. As early

as 1993 the financial services company Sanlam sold 10% of its stake in Metropolitan life to a black owned consortium led by Nthato Motlana a former secretary of the ANC's Youth League and one-time doctor to Nelson Mandela and Desmond Tutu.

After 1994 the number of these deals began to grow rapidly, reaching 231 by 1998 (BEE Commission Report, 2001, p. 24) and by this time some estimates suggest that as much as 10% of the Johannesburg Stock Exchange (JSE) was owned by black businesses. As Gelb (2004, p. 2) puts it

> "The first phase of BEE, involved white companies selling a proportion of their unissued equity to a few pre-identified black purchasers. The sales were financed by loans which were often provided by the vendor and usually secured by future earnings flows of the company itself, meaning that loan repayments assumed rising dividends and share prices ... In many instances, the purchaser was a consortium assembled by one or two black individuals, usually with a high political profile but limited experience in business."

Interestingly, these exchanges often took place at a considerable discount over the market price with BusinessMap analysts suggesting that the normal discount was somewhere in the 15-40% range over the market value of equity. Although at this stage there was little government intervention in deals involving the transfer of shares or the promotion of black people onto boards of directors, the government did pass affirmative action legislation in 1996, which began to impact management and other skilled occupations soon afterwards and it also undertook a number of initiatives to promote black enterprises. All of these separate policies have now been brought into the BBEEE 'rubric' via the codes of good conduct though initially they were not linked to ownership changes directly.

At the same time as this market driven uncoordinated BEE was evolving, with a focus on the transformation of ownership and boards of directors, the government also engaged in diverse enterprise development initiatives.

2.2 Phase 2: Big Push to Overcome the Apartheid Legacy, 2000-2014.

This 'first wave' of BEE came unstuck with the stock market decline in 1998 which led many of the financial deals to unravel. In response to a growing sense that BEE had to be expanded and institutionalized in 1999 the ANC government supported the creation of the BEE Commission under the chairmanship of Cyril Ramaphosa. Beginning with the report of the BEE commission, which was issued in 2001, the government moved not only to bring the process of asset transfer within a legal framework to promote BEE, but also to greatly broaden the nature of BEE. This "Broad-based Black Economic Empowerment" was intended to encompass "elements of human resource development, employment equity, enterprise development, preferential procurement, as well as investment, ownership and control of enterprises and economic assets." (Government of South Africa, 2002, p. 12). Interestingly, this approach proposed by the BEE commission harkened back to the 'pre-history' of BEE, specifically the '3-4-5-6' plan proposed by NAFCOC (National African Chambers of Commerce) in the early 1990s, which argued for a ten-year time frame within which corporations listed on the JSE should have 30% black directors; 40% black share ownership; 50% black suppliers for production inputs; and 60% black management (which was 4% in 1990).

The BEE commission Report has been very important for the development of the initiative since it was made public. In short, the report recommended a much more active and interventionist role for the state in promoting black empowerment. Mainly through new legislation (the commission recommended the promulgation of a BEE Act), the government should point out key sectors, finance specific investment projects and formalize procedures, indicators, targets, etc., with which economic agents could be much more informed about BEE achievements. The commission believed that the government had not provided the required institutional and financial support required for sustainable black empowerment, and had chosen the wrong targets for its action. (BEE commission, 2001). The commission also suggested the creation of public entities in charge of specific BEE tasks which could centralize and concentrate policy action and procedures, such as a procurement agency and public financial enterprises as the National Empowerment Funding Agency (NEFA). It also recommended the privatization of

public enterprises in such a way as to direct them to black buyers. As Southall (2006, p. 465) puts it, "... these proposals constituted a major bid to shift government towards concerted intervention within the economy in favor of BEE."

The Commission also stated a series of specific objectives that the South African Economy should achieve in the 10 year horizon. Among the most important where the transferal of at least 30% of productive land to black peasants and collective organizations, an increase of the black equity participation in the economy to 25%, 25% of black ownership of JSE listed shares, 40% of non-executive and executive directors in JSE listed companies, 50% of government procurement directed to black owned companies, 30% of private sector procurement directed to black owned companies, 40% of black executives in the private sector, 50% of the borrowers from public finance institutions should be black-owned companies, 30% of contracts and concessions made by the government should involve black companies and 40% of government incentives to the private sector should go to black companies.

For the BEE commission, the proportion of shares owned by black people was not a good way of assessing the degree of advancement of BEE, something which seemed clear after the results of the financial crisis of the late nineties. A clear problem was that since black people did not have sufficient wealth to buy shares outright, they were often highly leveraged. Hence, the BEE commission suggested that full ownership, understood as "... a situation where the BEE company has paid for its full portion of an equity stake" (BEE commission, 2001) should be the appropriate way of measuring BEE success; a company shouldn't be considered as black until its owners had paid the debts incurred in buying assets. As a result BEE objectives would take longer to be achieved. For the first time the commission proposed a series of specific criteria to measure the degree of ownership of BEE companies, which have been used since then:

Black company: More than 50.1% owned and managed by black people.

Black empowered company: At least 25.1% owned and managed by black people.

Black influenced company: 5 to 25% owned and managed by black people.

Just as private sector firms were quick to respond after 1994, the wake of the report of the BEE commission saw a series of industry charters issued in anticipation of forthcoming

legislation and typically after negotiation with the government. The first of these, issued at the start of 2002 was for the liquid fuels sector committing itself to having 25% black ownership by 2010. The formulation of the mining charter caused the greatest stir. When a draft version of the Chapter which committed the industry to 51% black ownership within 10 years, was leaked to the press, share prices on the JSE plummeted. In addition the next six months saw a capital outflow of 11 billion Rand. The subsequent negotiations led to a charter where companies in the sector would be 15% owned in 5 years and 26% owned in 10 years. The mining industry also agreed to raise 100 billion Rand to finance these transfers (Southall, 2005, p. 467). The financial sector charter, released in October 2003 was important in introducing indirect ownership of firms as part of BEE. Since institutional investors, such as pension funds, hold large amounts of equity, and since many black people may invest in such funds through their pensions, an important issue has been the extent to which this can count as black ownership. The early discussion of BEE opposed this, but the financial services charter committed the industry to be 10% directly black owned by 2010 with the stipulation that if this target were achieved, then an additional 15% indirect ownership would qualify as true ownership. Another creative attempt by white business to shape the form of BEE was the Brenthurst initiative launched by the Oppenheimer family in 2003.[2]

The process set in motion by the formation of the BEE Commission first came to real fruition in 2003 with the publication of the document "A Strategy for Broad-Based Black Economic Empowerment." This document was particularly notable for paying out for the first time the generic scorecard showing the relative weights attached to seven basic dimensions of BEE. From this process the scorecard has emerged to clarify exactly what it takes for a company to be in compliance with BEE and the government committed itself to using its purchasing and licensing power to force companies to comply. In essence, if a company wishes to bid for a government contract, renew a license, or enter into a partnership with the public sector, it has to prove that it is BEE compliant. BEE criteria are also to be used in the case of privatization and sale of state owned assets and enterprises. This gives the government huge leverage in some sectors, such as mining, though much less in others, like manufacturing. The B-BBEE process

[2] http://www.thebrenthurstfoundation.org/Files/BrenthurstInitiative.pdf

culminated was the passing of the Broad-Based Black Economic Empowerment Act which was signed into law by President Mbeki in January 2004. The Act empowered the Minister of Trade and Industry to issue codes of good practice with respect to BEE. The aim of these codes was to clarify the conceptualization and measurement of B-BBEE, to outline the qualification criteria for procurement and other economic activities, to determine the weights attached to different elements of B-BBEE and to also clarify the status of the Industry Charters. The Codes were gazetted in February 2007. The Act also created an Advisory council whose role was to oversee the functioning of BEE and provide advice to the government.

The B-BBEE process over the last 8 years has created a much broader and more systematic basis on which to transform the economy inherited from the Apartheid period.

2.3 Phase 3: Self-Sustaining Empowerment?

We believe, for reasons discussed in more detail in the next section, that B-BBEE should best be conceptualized as a 'Big Push'. As we argue in detail shortly, the desire to promote B-BBEE stems from the recognition that there are many market and political failures that South African society faces which we cannot expect to be solved without government intervention. Yet the logical arguments in favor of this intervention also suggest that it only needs to be transitory - a Big Push aimed at breaking up the initial conditions inherited from Apartheid and pushing South Africa towards higher levels of productivity, equality and social welfare. Though conceptually appealing, at current the future of B-BBEE appears to be very unclear. In particular, it is not clear what happens in the future after the various targets (laid out in industry charters, for instance) have been met.

In the Big Push view of the world, for example, once companies in the financial sector have reached their target of 25% black ownership by 2010, further laws governing such ownership would not be necessary because the transfers of assets from whites to blacks would have irreversibly taken place. Similarly, with respect to the target in the financial services sector charter that by 2008 33% of the board of directors should be black people. Once these targets have been met, the Big Push view suggests that the structure of management ought to have been inexorably changed to that future affirmative action programs would not be needed to

guarantee black representation at the management level.

At root, the view here is that there is no intrinsic reason that black people would not hold assets or managerial positions in proportion to their relative weight in the population (though of course there is always inequality in any society). The only reason they do not do so now is that they were discriminated against during the Apartheid era. This implies that in the long-run there is no need for a policy such as BEE or B-BBEE to generate self-sustaining empowerment. Once the economic legacy of Apartheid has been thrown off, black people will empower themselves. This perspective is important to emphasize however because though the need for B-BBEE may be transitory, the policy can easily become permanent because it can become captured by special interests or generate opportunities for rent seeking.

3 What Problems is BEE Intended to Solve?

3.1 A Presumption of Inefficiency

At some level it is easy to answer this question. For over a century, South African society was based on an economic and political model where whites structured institutions in order to repress blacks and extract resources from them. In the process, they created probably the most unequal society in the world. The extraction of rents from black people created a massive misallocation of resources. These were not just human, but also physical. Blacks had no access to land or capital and the Colour Bar blocked them from upward social mobility and removed the incentives to invest in human capital. Bantu education removed their ability to accumulate human capital. The attempt by the National Party to placate the World and its black citizens in the 1980s and the transition to democracy removed the laws which kept this system in place, but it is obvious that the legacy of Apartheid massively structured the initial economic conditions that the society faced in 1994.

Basic economic theory suggests that here are potentially huge productivity benefits to be had from overcoming this misallocation of human and physical resources. This is because Apartheid left a mismatch between the distribution of ownership of assets and the abilities of those that can use them. During Apartheid, this miss-match was deliberately created in order to distort market prices and create rents for whites. Whites were happy to sacrifice social

efficiency in order to make themselves better off at the expense of the blacks (put simply, they were happy with a big slice of a relatively small pie). One cannot expect the market to naturally remove the misallocation of resources left by Apartheid. In a perfect, frictionless world, those who could use assets more productively more would simply buy the assets from others. Blacks with farming skills, who had previously been unable to own land, would simply buy the land from whites. Blacks with talent would acquire an education and get the jobs justified by their productivity. These processes would naturally tend to lead the initial conditions to unravel. Though inequalities exist in any society, the international evidence suggests that the equilibrium level of inequality is far below that which currently exists in South Africa.

Unfortunately, markets are not perfect or frictionless and the presence of market failures can lead the initial conditions of Apartheid to reproduce themselves over time, even after the laws and structures of political power which created them have been changed. There are many reasons for this but we emphasize three. First, capital markets are highly imperfect. A black person may be able to use an asset more efficiently than a white person, but to buy the asset he must have wealth or access to capital markets or financial institutions. Most black people have neither wealth nor access to capital so exchanges which would have made everyone better off do not take place. Second, solving these problems requires the provision of public goods, such as an improved education system for blacks. As is well understood, markets will not efficiently supply such public goods. Third, racial stereotypes undoubtedly persist. Even in the United States there is strong evidence that such stereotypes influence hiring decisions (Bertrand and Mullainathan, 2006), in South Africa, a society based for many decades on an institutionalized doctrine of white racial superiority, the situation can only be much worse. Even were a black person to acquire the education and qualifications for a particular job, he may not be hired because of perceptions that black people are less productive than white people.

One interesting aspect of all of these economic problems is that they can be solved by a "Big Push". In principle a transitory push can create enough social mobility and asset accumulation by blacks that the underdevelopment trap in which they find themselves will be broken (though we recognize that it may take quite some time to dissolve racial stereotypes, as the US evidence clearly suggests).

This discussion of economics does not exhaust the nature of the problems BEE is attempting to address because these are also political in nature. In particular, South Africa is a young democracy attempting to consolidate itself. The extent of inequality in South Africa has the potential to destabilize democracy because it can make populist policies attractive to the majority of voters. Populist policies may not just be a disaster for economic performance, but they can also undermine democracy as those who are punished by such policies try to overthrow the system that generates them. This is a major lesson from the experience of democratic consolidation in Latin America, for example. Thus addressing the inherited inequalities of Apartheid is not simply about promoting the efficient allocation of resources, it is also about promoting political stability, good long-run policies, and guaranteeing that democracy endures in South Africa.

In addition to positive reasons for BEE, the policy can be justified on normative grounds. Indeed, most of the rhetoric surrounding BEE is normative rather than positive. Apartheid society was not just exploitative in the sense that blacks were paid much less than their productivity, but it was also highly unjust, unfair and discriminatory. Nevertheless, our focus in this paper is on the economic costs and benefits of the policy.

3.2 Potential Policy Responses

What sorts of policies could be used to reverse the economic inefficiencies inherited from Apartheid? Unfortunately, economic theory does not provide simple answers to all of these problems. With respect to education and schools, the natural solution is for the government to allocate more resources to improve the quality of education, which it is doing. If capital markets are imperfect then one solution would be to attempt to make them work better. Nevertheless, there are well known theoretical problems with this (Lancaster and Lipsey, 1956, Hart, 1974).

An alternative would be to directly use income redistribution via the fiscal system to relax the wealth constraints facing blacks so that they could accumulate and acquire assets themselves. Such a policy has at least three problems. First, taxes create deadweight losses so that one cost has to be weighted against another. Second, if the third mechanism mentioned above, racial stereotypes, is important, then such a redistribution of income may not lead to

the upward social mobility of blacks. Third, this policy may take a long time to work and political stability may require a much more rapid solution to the problem.

An alternative policy to income redistribution would be to directly redistribute the assets themselves. This policy has several of the same problems as income redistribution. For example, it may lead to deadweight losses since the government does not know who values the assets most and those who receive the assets may be less able to use them productively. This policy also has potential problems not shared by income redistribution. The first is that while taxation by a democratic government is seen as legitimate, asset redistribution is often regarded as an unconstitutional violation of property rights. Ideally, asset redistribution would be done once, without announcement, and with commitment to no more asset redistribution in the future. Yet such a policy is obviously not feasible in a democracy. This can imply large losses and reduced investment due to expectations that property rights will be insecure in the future. The second new sort of problem is that redistribution of titles to existing produced-capital assets, rather than the accumulation of new capital (whether produced or human) or the redistribution of land to the tillers, may lead to the proliferation of opportunities for massive rent-seeking with consequent deadweight losses.

Nevertheless, the policy of asset redistribution has advantages over income redistribution. First, in South Africa, as we discussed, there is a clear presumption that assets are inefficiently allocated so concerns about redistribution leading to less productive use may be mitigated. Second, the policy has the potential to remove inherited inequalities much more rapidly that coupling income redistribution with a reliance on market driven social mobility. Third, in the context of the political transition asset redistribution can be regarded as far more politically legitimate than it might otherwise be. In addition, confiscatory asset redistribution was excluded by the transitional process in South Africa, and as a result the Constitution explicitly excludes it (which does not mean it can never happen obviously) and the government is committed to a compensated and incremental approach.

A final policy to remove inequalities and improve social mobility would be affirmative action. This has quite a large amount in common with asset redistribution in the sense that it recognizes that a purely market based approach to social mobility may not be successful (for

example because of racial stereotypes) or may too long to be consistent with political stability.

One can argue therefore on both positive and normative grounds that asset redistribution and affirmative action are socially efficient policies. This leaves open however the exact details of how such policies should operate. How does the form of BEE measure up when evaluated against the criteria of improving the allocation of resources and political stability?

3.3 Actual Policy Responses

In saying that resources are misallocated, or the inequality in South Africa needs to be removed because it is a threat to political stability, or that asset redistribution and affirmative action may be socially desirable policies, we are arguing in terms of social welfare. To make the jump to policy we need to be sure that the political system will actually choose policies that are efficient. Unfortunately, there is a great deal of evidence that political institutions in a democracy do not necessarily create the incentives for the adoption efficient policies or efficient means to a particular end. Thus even if social welfare and economic growth can be increased by removing inequality in South Africa and in principle even if BEE has efficiency enhancing effects, one cannot assume that it is because of these effects that it has been adopted or that, simply because it has been adopted, it must be the best policy (as some would argue, for example Whittman, 1989). In addition, one cannot assume that the form BEE takes is the best one to achieve its aims. These issues are important because they form the basis for our claims that though in general BEE is desirable, some of the specifics of the policy are quite possibly not.

Both the government and the private sector have their own interests which they try to pursue. To a greater or lesser extent, these interests coincide with social welfare. To illustrate this in a simple way consider the issue of political stability and the stability of property rights. We argued above that one of the efficiency reasons for undertaking BEE is to promote political stability. But political stability is a public good which is likely to be underprovided when individuals make decentralized decisions whose aggregate outcome is the extent of stability. Recall that BEE, at least that part of it emphasizing share transfers and the promotion of blacks into managerial positions, was initiated not by the government, but by white capitalists.

Imagine that the desire of white capital to promote BEE, by selling shares to blacks or putting blacks on their boards of directors, was to help guarantee their property rights. How could it do this? One way would be to reduce the probability that populist economic policies come onto the political agenda. But would capitalists have the right incentive to take individual actions to promote this? The answer to this is not necessarily. First, to the extent that this process did make populism less likely, an individual firm is protecting not just its own property rights, but those of all capitalists. Thus when they do BEE, an individual capitalist generates a public good for all capitalists. Clearly any individual capitalist has an incentive to free ride of the actions of others and they will therefore tend do too little BEE from the point of view of the capitalist class and society (Poulantzas, 1973, Acemoglu, Gelb and Robinson, 2007).

Second, the form of BEE that is in the interests of white capitalists may not be socially optimal. Imagine there are two ways to promote political stability. Firstly, one can undertake B-BBEE in order to increase the opportunities, skills and welfare of black workers. This makes the political majority in society, essentially poor black workers, better off, reduces inequality, and ameliorates the threat of populism. Alternatively, one can attempt to buy off not the majority of voters, but the political elite using N-BBEE (Narrow-Based BEE). In a country like South Africa with a clearly defined political elite and little organized political opposition, such a strategy may be feasible. This may still create a higher probability of populism than the alternative but it has compensating advantages. In particular, buying off the political elite gives access to government contracts, favors and regulations and can help to gain competitive advantage. In either case, we would not expect a BEE (either B-B or N-B) policy generated by the private sector to be the socially desirable one. Importantly, the policy chosen in a decentralized way by capitalists will not even maximize the collective welfare of the capitalist class due to all of the externalities involved. This is clear in the B-BBEE strategy, but it is also the case in the N-BBEE strategy, which is probably even worse for the capitalists jointly. To see this note that the attempt to curry favor with politically connected blacks is basically a zero-sum gain for the capitalists so in the long-run equilibrium few competitive advantages will accrue (it is like a classic prisoner's dilemma) but property rights will be more insecure than in the B-BBEE equilibrium.

The evidence so far is definitely that N-BBEE has dominated. To examine this we collected information from McGregors on the board members of all the companies listed on the JSE. We then collected information on all members of the ANC executive committee since 1994 and all elected ANC politicians both at the national and regional level. We then looked for matches in these two sets of names. We found 56 ANC politicians who were on the boards of directors of these firms. Figure 0 shows the inter-relationships between the companies and the ANC politicians. The politicians are numbered, while the firms have their real names. What Figure 0 shows is that there are a number of politically connected people who serve on the boards of many JSE listed firms. This evidence certainly seems consistent with the notion that white firms have been trying to match with politically connected people in order to secure their property rights, or influence government policy more generally. The dominance of politically connected people on boards of directors suggests that inspite of the rhetoric about B-BBEE, the reality is that N-BBEE is the norm.

It is worth emphasizing here that if the goal of BEE is to reduce inequality than it appears unlikely that N-BBEE will achieve this goal. Currently, though many Africans have benefited from BEE, this is somewhat narrow elite and this has had no noticeable impact on inequality in general, though it has increased the share of national income which accrues to black people. It is also possible that N-BBEE, by creating resentment at the wealth acquired by a few, may make populism even more likely than if BEE had never happened at all. The evidence so far, however, suggests that this is not the case.

In reality, the different motives of white capitalists have evolved over time and the issue of timing is important. For instance, N-BBEE may actually be a much more reliable way to secure property rights in the short run. The first phase of BEE, starting in 1993 was focused on providing assets to a sufficiently large/powerful group within the black political elite to ensure that the immediate anxiety with respect to property rights was allayed. Notwithstanding the collapse of the deals, this was achieved in the sense that by 1998, no-one was concerned that the existing ANC government would expropriate assets. In the second phase, since then, the problem has likely been that the rent seeking incentives have stopped a transition to a more collectively rational form of BEE (collectively for white capitalists and social welfare and

possibly even for the ANC government).

We note that another factor impeding the development of key parts of BEE, such as asset transfers, were financing difficulties which particularly became clear after the 1998 stock market crash when the financing of many early deals unwound. It is significant, for instance, that the Brenthurst proposal was put forward after the 1998 crash, not before and focused a lot of attention on the financing of BEE deals and instruments, such as write-offs, that would stimulate such deals.

This analysis of the emergence of BEE leads to a clear presumption that government intervention can lead to social improvements in the BEE policy and probably explains why capitalists have not shown a huge amount of reluctance at the increasing role of the government in shaping and legislating the BEE process (though there are certainly some exceptions to this). There are two margins on which government policy can operate. The form of BEE (for example, N-B or B-B) and its extent. We have argued that capitalists on their own do not have the incentives to either choose the socially desirable form of BEE or its intensity, though they certainly have some incentive to engage in BEE.

Does the government have the correct incentives? There are several key issues. First, it is clear that the government does have strong preferences for improving the welfare of poor black people, including the majority of voters. Secondly, the current ANC leadership wishes to be re-elected and to continue to implement its' favored policies. This implies that, like white capitalists, it is also threatened by the spectre of populism. Both of these arguments suggest that the ANC leadership has the incentives to adopt the socially desirable policy. However, there is a third factor which mitigates against this. Policy outcomes are not simply the result of the preferences of incumbent politicians or the executive, but respond to societal influences. Some of these influences certainly push towards socially desirable BEE, but others do not. We argued above that white capitalists may favor N-BBEE, even if socially inefficient compared to B-BBEE. It is plausible to believe that this preference will lead to pressure on the government to follow exactly this strategy. Even if the government as a whole would prefer and indeed be better off in term of B-BBEE, the gradual and decentralized evolution of the policy, particularly in the early days, and the great extent to which politically connected people have

benefited from BEE deals, makes it quite likely that the government itself faces a collective action problem in adopting the right policy. If this is true, then there is a clear potential basis for BEE policy reform.

One can imagine many other potential channels via which the policy chosen will not be the optimal one. For example, as we emphasized above, many of the interventions associated with BEE have a 'Big Push' flavor, meaning that a transitory push is what is required to change the equilibrium allocation of resources to one more favorable to blacks and more efficient. But as is well understood from the literature on industrial policy, governments may have difficulty committing to transitory policy and interests that benefit from such policies, for example temporary targets for the extent of equity held by blacks in firms, may try to exert pressure to make a temporary policy permanent.

4 The Impact of BEE on Economic Growth: Conceptual Issues

In the last section we discussed the problems that BEE is trying to solve and whether or not the design of the policy is sensible, given feasible alternatives. We now develop a more explicit theory of the impact of BEE on firm behavior which we can use as the basis of our empirical strategy.

The simplest positive theory of BEE focuses on its costs and benefits to firms. Obviously the costs and benefits to firms cannot capture all of the effects of BEE since there are many externalities involved and these can be an important motivation for the policy. For instance, forcing firms to hire black managers may stimulate black entrepreneurship generally in the economy with large positive benefits. Even if this is the case, however, the government is effectively forcing white firms to pay the costs of this and it is this cost which is relevant for developing a positive theory which can guide empirical work.

There are several obvious benefits in terms of firm value. First, it is possible that forcing firms to engage in BEE activities such as hiring black executives and managers may directly increase firms' productivity if previously firm behavior was dominated by incorrect racial stereotypes that Africans were less productive or less good at their jobs. Second, since capital markets are imperfect, forcing firms to sell equity to blacks may improve efficiency if these

individuals can use the assets more productively than whites who previously held them. These two mechanisms may be distinct possibilities in post-Apartheid South Africa. Nevertheless, one might doubt that they would generate first-order changes in firm productivity. For one, the nature of 'Bantu education' means that there is a dearth of qualified black people with the training and skills necessary to fill managerial positions, despite of their intrinsic talents. For another, there is not much international evidence that the distribution of ownership of the equity of the firm has a large impact on company behavior. In addition, as we suggested above, many of the benefits which might come from these policies will not accrue to the specific white firm which undertakes them, so for its perspective, they will not represent benefits (though they may be to society as a whole).

There are other possible benefits however. The first is that BEE may help to preserve the property rights of firms if they fear expropriation. The second is that being BEE compliant gives firms greater access to government contracts or the determination of regulations that might influence their profitability. The fact that both of these benefits may be important is attested to by the huge involvement of politically connected people in BEE deals (see Acemoglu, Gelb and Robinson, 2007). The most plausible rationale for this is that this is an attempt by firms to influence government policies and gain access. More recently, firms who interact with the government regularly are forced to engage in BEE to be eligible to bid for government contracts. A third factor on the 'benefit' side of the equation is that shareholders of a firm may sometimes have an intrinsic preference for BEE, for instance when the government's Public Investment Commission in a major shareholder.

Overall, the balance of these factors suggest that we would be unlikely to see large productivity effects of BEE in the short run, but BEE may be consistent with sustained profitability and even increased investment if the impact of the individual property rights of individual firms are sufficiently large. Note however, that if by undertaking BEE firms are producing a public good of greater property rights security, the extent of this greater security may not depend very closely on the amount of BEE and individual firm does and so it will be difficult to estimate this effect with firm level data.

The costs of BEE are less clear but they may certainly exist.[3] Since firms could have engaged in BEE on their own, but did not in many cases until pressured or faced with legislation, one could argue that by revealed preference BEE must make firms worse off, at least subject to the caveat that due to racism, firms were not initially giving up profitable opportunities. Nevertheless, since much of BEE involves the provision of public goods, the fact that individual firms may not rationally wish to engage in it does not in fact imply that if all firms were forced to do it they would be worse off.

Let's examine more specific channels and their likely cost. First, consider the costs of share transfers to blacks. One clear cost to shareholders is that the preponderance of these share transfers take place at a discount over the market price of the share (exactly what you would expect to happen when blacks are liquidity constrained, see Acemoglu, Gelb and Robinson, 2007). There is therefore an element of pure transfer in the transaction. Still, this transfer may just be a pure redistribution of income from existing shareholders to black BEE entrepreneurs with no implications for resource allocation. BEE share transfers will not represent pure redistribution in two cases. First, if the ownership structure of the firm matters for productivity. The literature on corporate finance suggests that this may be true when there is an agency problem between the shareholders and the directors who generally have less interest in maximizing the value of the firm than shareholders. If the redistribution of ownership to blacks via a BEE deal makes it more difficult for the shareholders to monitor or control the directors then this will tend to reduce the productivity of the firm. We have already expressed some scepticism that this channel has large effects on productivity one way or the other. Second, when firms are liquidity constrained and the BEE deal commits them to a higher level of dividend payments than would be optimal from the point of view of investment. There is a large amount of evidence that capital markets and imperfect and that decisions by firms, particularly investment decisions are liquidity constrained (e.g., Fazzari, Hubbard and Petersen, 1988). Firms must invest out of retained profits. However, since black entrepreneurs

[3] One example of this is Sasol which got into a confrontation with President Mbeki over saying that BEE was a risk factor when they were listed on the New York stock exchange. More recently Barloworld's reluctance to engage in BEE led to the resignation of Chairman Clewlow and his replacement by a new black CEO, after which they announced major BEE initiatives.

lack wealth, firms often lend the money to buy the BEE shares with the black entrepreneurs using future dividends to service the loan. Given the target level of black ownership and the date by which this is to be accomplished, this strategy may force firms to pay much higher dividends than they would otherwise have done. The effect of this may be to reduce investment below the profit maximizing level for the firm.

Even if diluting share ownership and paying high dividends does not cause large efficiency costs, another channel via which BEE may generate costs is that it may force firms to hire black workers who are less qualified and less productive than workers that the firm would otherwise have hired. Though in principle there may be many black people who are more productive than potential white employees there are obviously practical problems connected to the legacy of poor education for Africans. By forcing firms to engage in skill formation it may also force firms to misallocate resources which could have been productively used (though there are of course counter-arguments to this since much research suggests that firms tend to under-train workers relative to the socially optimal level – see Acemoglu, 1997, Acemoglu and Pischke, 1999). All of these channels suggest that BEE might reduce productivity, investment, profits and the share price.

In discussing the benefits of BEE we included the social benefit of the avoidance of populism and noted that individual firms could not benefit from the whole extent to which they helped to provide a social benefit. In addition to social benefits however, there may be social costs of BEE. A clear one is that N-BBEE via the forging of links between firms and politically connected people may lead to rent seeking and the introduction of regulations and policies that favor existing incumbents. This can reduce market competition and innovation and it can also distort government policy. This may appear as benefits on firms balance sheets because it increases profits, but it is obviously a cost for society and likely reduces economic growth.

We could list here many other potential costs and benefits which will be very difficult to quantify with existing data, but may nevertheless be first order. Though we cannot use the data we have at hand to analyze these questions, their potential importance is clear. For example, if a firm must be BEE compliant to bid for government contracts and since the government weighs BEE credentials as well as the price when evaluating bids for contracts,

BEE clearly has the effect of reducing competition in procurement and increasing the costs of the government. Since resources spent this way have an opportunity cost, this is clearly a potential cost for BEE. Also potentially costly are the resources that firms have to spend in order to be evaluated. The evaluation process seems at the moment to be quite chaotic with many companies offering to certify that firms are BEE compliant and this is an area where there may be large gains from policy reform. In our discussion we have also focused in some sense on the costs and benefits for the 'big players' in BEE. But what about the small players? Though small firms (in terms of turnover) are exempted from BEE, the prospect of having to implement BEE may act as a deterrent to the expansion of small firms. Such a deterrent may be significant if it is the entry of small firms which is crucial for innovation and the emergence of new ideas and industries. Relatedly, a priority topic for research is the extent to which BEE, as currently constituted, creates positive externalities for black entrepreneurship in the economy at large. Finally, another crucial area is Foreign Direct Investment. Though foreign firms wishing to invest in South Africa are exempt from the ownership part of the BEE scorecard, they do have to be BEE compliant and for example this implies that they have to purchase inputs from BEE accredited firms. If BEE is costly to foreign firms then this may create a first-order disincentive effect of BEE on FDI. The evidence we examine in the next sections cannot address these questions, but we hope articulating them will stimulate the collection of data which will enable them to be studied.

4.1 A Summing-Up

There are two potential linkages between BEE and economic growth with either positive or negative effects. The first linkage is that BEE influences property rights which has a first-order effect on incentives to invest and innovate and thus the rate of economic growth. The second linkage is that BEE may influence directly the productivity of firms. However, we have also seen that the impact of BEE on property rights may be positive, if it leads to the avoidance of populist economic policies, or negative if the uncertainly about the future evolution of the policy becomes large. In terms of productivity we outlined both potentially positive and negative impacts.

It is useful to consider these issues in the context of our characterization of the three phases of BEE presented before. Phase 1 was characterized by N-BBEE and this seems to have had the effect of provisionally securing property rights. Interestingly, this probably happened *because* of the narrowness of the beneficiaries and despite the fact that there was a partial unravelling of some early deals. The way to secure property rights quickly was to give the new political elite a vested interest in secure property rights, and this is exactly what N-BBEE did. We would argue therefore that relative to the relevant counterfactual, the effects of N-BBEE in Phase 1 on economic growth were positive. The lack of data from Phase 1 of BEE makes it impossible to judge the impact on productivity. In Phase 2 however, and inspite of the creation of B-BBEE, the emphasis on ownership persists. Contrary to Phase 1, it seems likely that enhancing the security of property rights necessitates a full move to B-BBEE and a complete re-focusing of the policy. In the long-run N-BBEE will not secure property rights because new political elites will emerge and enter politics. To enduringly secure property rights the lives of at least a majority of blacks South Africans must be transformed so that they too have a vested interest in the security of property rights. What have the effects of Phase 2 BEE been on firm behavior and productivity? We now turn to an empirical investigation of this issue.

5 The Impact of BEE on Economic Growth: An Empirical Strategy

Is BEE good for growth? Bad for growth? As yet, nobody actually seems to know, though one certainly hears arguments in both directions. We now focus on developing and testing a framework which can help to clarify the impact of BEE and its impact on firm behavior and performance and ultimately economic growth. BEE is not one, but a vector of policies, which features most prominently the transfer of assets from white firms to blacks and the appointment of black company directors and senior management, but it also involves affirmative action and training/skills development and human capital aspects. It is very difficult to independently estimate the effect of these different components of BEE on firm behavior since they are all highly correlated and simultaneously chosen. Nevertheless, we can present some simple evidence which throws light on questions such as, to what extent are things such as skills

development and equity ownership complements or substitutes? Does distributing some of your shares to high profile politically connected BEE entrepreneurs really lead a company to change its behavior? Though we examine the relationships between the different components of BEE later and examine to some extent the impact of ownership on firm performance, we focus most intensively on the aggregate BEE behavior of firms, as measured by the Broad-Based BEE scorecard. Why ownership in addition to this? Even though ownership only gets 20% of the weight on the Broad-Based BEE scorecard, and in principle a firm may be in compliance with BEE Codes of Good Practice by substituting other instruments for equity transfer, the issue of asset transfer has been at the heart of BEE since its inception and continues to loom large in the existing industry charters, public discourse and government attitudes.

To develop a convincing empirical strategy for evaluating the effects of BEE on firm performance one needs a theory of the origins of BEE and why it varies across firms and industries. To see why, consider the most naive empirical strategy for estimating the impact of BEE. This would involve taking some measure of company performance, such as the investment and regressing this on a measure of BEE, such as the % of equity in black hands, or the firm's total BEE score from the BEE scorecard. We are interested in estimating the causal effect of BEE on investment to ask such questions as: does BEE create incentives for a firm to expand its scale of operations? We might be interested in many other dependent variables such as profitability, employment, productivity or dividends. Regressing the investment on a measure of BEE would not however estimate the causal effect of BEE because the extent to which a firm engages in BEE is endogenous and chosen by the firm itself. From an econometric point of view, there is a large problem of omitted variables bias. Other variables, particularly characteristics of the firm or maybe industry, will determine both the extent to which it becomes involved in BEE, and the amount of investment it undertakes and this means that the estimated coefficient on BEE will be both biased and inconsistent.

It is useful to use some hypothetical examples to emphasize this point and to do so we will consider the impact of BEE on share prices. Consider a firm that was closely connected with the Apartheid state which had previously been implacably opposed to majority rule. Such a firm might be very concerned with its property rights following the transition to democracy and

would therefore be very concerned to engage in BEE to offset its negative image. It may not be a coincidence, for instance, that the first BEE deal was done by Sanlam, one of the largest Afrikaner controlled companies. The threat to the firms' property rights would tend to depress its share price so one might find BEE associated with lower share prices. Nevertheless, the real effect of BEE on the share price would be positive and without controlling for the omitted factor (former political affiliation) the coefficient on BEE would be biased downwards. To consider another example, a firm in a highly concentrated industry may be earning monopoly rents. Such a firm may engage in BEE in order to give access to the government and keep in place barriers to entry and thus profits. Here we will find BEE associated with a high share price (since the share price will take into account the present value of future monopoly rents) and there will be an upward bias on the estimated effect of BEE unless we control properly for the omitted factors that simultaneously drive profitability and the incentive to engage in BEE.

How can we solve this problem? One approach is to try to control for all of the factors that might be omitted. In practice, this is very difficult to do. The attractive alternative is to find a source of variation in BEE which is not itself a determinant of the firm outcome we are trying to explain, be it share price, investment or whatever. Using the language of econometrics, we need an instrument. How do we find an instrument? To do this it is crucial to have a theory of where BEE comes from.

This theoretical framework we developed in the previous section implies that BEE will vary across firms according to differences in the costs and benefits that they face. Many of the factors that influence these will not be attractive candidates for instruments because they will themselves be determinants of firm performance. Nevertheless, we can extract from this framework a series of potential instruments.

1. The extent to which firms are dependent on government contracts for their business will help to determine both the incentive of the firm to engage in BEE and the extent of leverage that the government has over the firm. Greater dependence, other things equal, ought to lead to greater BEE.

2. Another factor determining the leverage of the government over firms would be the extent to which institutions such as the Public Investment Commission holds equity in the firm.[4] The greater the fraction of shares owned by the PIC, other things equal, the more we should see a firm engage in BEE.

3. The initial ownership of the firm ought to matter. For instance a company where one family, individual or firm owns 50% or more of the shares should be more threatened. Thus firms where one entity owns 50% or more of the shares ought to engage in less BEE, other things equal.[5]

4. A firm which is in an industry with a charter ought to face very different incentives from firms in an industry without a charter. We hypothesize that other things equal, a firm in an industry with a charter will be more likely to engage in BEE.

Though we can think of instruments 1,2, and 3 as predicting BEE in general, one might hypothesize that 3 would predict ownership transfers. The fact that a controlling individual/entity is relatively uninclined to make share transfers does not imply that he/it is unwilling to invest in skills development, for example. Unfortunately, since we have so far been unable to find data on the extent to which individual firms transact with government, we do not develop strategy 1 at the moment. Though we do have data from the input output tables at the industry level, since it is not of sufficiently high frequency, this variable would be time invariant. In this case to use this data would be really akin to using an industry dummy.

To use these variables as instruments it is important to exploit the periods before the inception of BEE. WE know that before 1993 BEE was zero in all firms and so an important part of the identification of the causal effect of BEE must exploit the fact that BEE was zero and then it took off at different rates in different firms. Note that the instruments we have

[4] For example, the PIC seems to have played an important role in changing the attitudes of Barloword towards BEE.

[5] We recognize of course that it is possible to effectively control a firm while holding less than 50% of the equity. In South Africa, the Oppenheimer family famously exerted corporate control while holding a much smaller stake. Nevertheless, there is something rather salient about 50% when decisions are taken by majority rule. We did experiment with a variable which was the proportion of shares held by the largest shareholder and this in fact gives similar results, though weaker and less robust. In ongoing work we are using information from Who Owns Whom to develop a richer theory of firm control and how this influences the incentives to engage in BEE.

above are time invariant so the actual instrument we will use is the interaction between these time invariant variables and a dummy variable which =0 for before 1993 and =1 afterwards.[6]

How ideal are these variables as instruments? Opinions on this can differ. Clearly, 1 could be endogenous since firms which were better equipped to take advantage of BEE re-organized themselves to transact more with the government since BEE could give them a competitive advantage. Thus 1 could be thought of as to some extent endogenous. 2 also has the potential to be endogenous since the decision of the PIC to invest in one firm rather than another could be driven by the desire to influence BEE. If the coefficient on PIC is biased however, it is not clear in what direction it is biased. We are currently investigating the determination of the PIC's investment strategy. Of all of the instruments 3 has the greatest potential to be econometrically exogenous. Though this is subject to ongoing research, our impression is that firms which have controlling interests of 50% or more have had them for a long time and that this is independent of the evolution of BEE and indeed long predates it. 4 could also be though of as problematic. Why do some industries have charters and not others? This is a complex issues which we are currently investigating. Note also that since this instrument only varies at the industry level and not the firm level it is the least satisfactory approach in any case.

Despite the claims that BEE is complementary to sustained growth and indeed part of the growth strategy of the government in South Africa, there seems to have been no proper empirical analysis of the possible connections between any aspect of BEE and firm behavior and growth. The discussion do far is on the level of the research by Empowerdex (2007a) which simply looks at the correlation between the extent to which firms and sectors engage in BEE and their profitability and shows that sectors with greater BEE do not have lower profits and in many cases even have higher profits. Unfortunately, one can learn almost nothing from such an exercise. There are many factors that influence both BEE and profits and which may lead them to be correlated, but this tells one nothing about the causal effect of BEE on profits. In addition this calculation does not take into account that both variables may be trending over time, or that there may be reverse causality from higher profitability to more extensive BEE.

[6] We tried other strategies as an alternative for this time dummy. For instance we used an aggregate measure of the intensity of BEE which was the average BEE score for our sample of firms and interacted this with our time invariant instruments. This gave roughly the same results but was much less robust.

6 The Impact of BEE on Economic Growth: The Data

We now describe in more detail the data we use in this paper. The first issue is the measurement of BEE across firms and industries. Our main source of data on various BEE outcomes comes from Empowerdex over the periods 2004-2007 (Empowerdex, 2007b). We use the data 2004-2006 for which we have firm level economic data. Empowerdex collected information from firms on all of the information relevant to constructing their score according to the BEE scorecard and have published for 4 years the top 200 companies ranked according to BEE score. We focus only on companies listed on the Johannesburg stock exchange for which we have other firm level data, which reduces the basic sample to 159 companies at most. Since some of the economic data is incomplete we also have to drop some firms for some regressions. For each of these firms we have their total BEE score, the proportion of shares held by blacks, the proportion of management which is black, spending by firms on skills development as a % of turnover, extent of investment in enterprise development etc. We focus on the total BEE score of the firm and the ownership score as our main independent variables. In general, it would be interesting to unpack the vector of BEE policies, but since the components of BEE are all positively correlated, we are not confident that we can identify the effect of individual components. The exception to this, as we discussed above, is the ownership score, and this is why we also include this as an independent variable. We also look at some of the correlations between these headline scores and the other facets of BEE, which, as we shall see, is quite revealing.

We matched this data on BEE scores of firms to firm level data which we get from Who Owns Whom in South Africa who compiled this from published company accounts for companies listed on the JSE. This data includes information on the share price, dividends, turnover, profits, fixed assets and employment. We focus on three main dependent variables, profitability, defined as profits divided by turnover, investment and labor productivity (unfortunately we do not have sufficient information on inputs to construct total factor productivity). To construct investment we used data on the prices of capital goods from the South African Reserve Bank to deflate the stock of fixed assets and then constructed an investment series assuming

a 5% rate of depreciation. To construct labor productivity we used disaggregated data on the output prices of different sectors to deflate turnover and get a measure of real sales and we then divided this by employment (we do not yet have data on how hours vary across sectors).

The data that we used to construct out instrumental variables comes from various sources. Our measure of the extent of leverage that the government has over a firm is the proportion of equity in the firm owned by the PIC which comes from the 2007 edition of Who Owns Whom in South Africa[7] and which we have for all companies listed on the JSE. From data on the ownership of equity from this source we also coded a dummy variable which was =1 if there was an individual, family, entity or firm which owned 50% or more of the equity in a company. Our final approach to instrumentation involves using the industry charters. We used this data in the following way: we constructed a dummy variable =1 if the firm is in an industry with a charter and =0 otherwise and use this as an instrument for the BEE score of a company.

7 The Impact of BEE on Economic Growth: A Panel Data Approach

The basic linear empirical panel data model that one would wish to estimate is

$$y_{it} = \alpha d_{it} + \mathbf{x}'_{it}\boldsymbol{\beta} + \mu_t + \phi_i + u_{it}, \tag{1}$$

here y_{it} is some measure of the performance of company i and time t, d_{it} is a variable measuring the extent of BEE in firm i at time t, $\mathbf{x}'_{it}$ a vector of relevant covariates, μ_t a time effect, ϕ_i a firm fixed effect, and u_{it} a disturbance term with the standard properties. The main coefficient of interest which we wish to estimate is α which is the causal effect of BEE on firm performance. Though this model is unidentified in the sense that d_{it} is an endogenous variable, the use of fixed effects to focus on the within variation at least implies that we ought to be able to control for the presence of time invariant omitted variables. For y_{it} we will use firm investment, labor productivity and profitability. For d_{it} we shall use the aggregate BEE score and also the BEE ownership score. In this version of the paper we shall present only very parsimonious models without covariates.

[7] http://www.whoownswhom.co.za.

As discussed extensively above, the heart of a convincing empirical strategy is modelling BEE. The first stage equation which does this has the form

$$d_{it} = \boldsymbol{\gamma} I_i \times \mathbf{D}_{1993} + \mathbf{x}_i' \boldsymbol{\delta} + \boldsymbol{\rho}_t + \zeta_i + \varepsilon_{it} \tag{2}$$

In (2) we model the determinants of BEE. These depend on the same vector of covariates included in (1), and we include firm level (ζ_i) fixed effects, time effects $\boldsymbol{\rho}_t$, and ε_{it} is a standard disturbance term. Here I_i is one of our instrumental variables and $\mathbf{D}_{1993} = 0$ for $t < 1993$ and $\mathbf{D}_{1993} = -$ for $t \geq 1993$.

Although we have firm level data from the 1970s onwards we only have comprehensive BEE data for 2004-2006. Thus we shall estimate a panel model using the years 1985-1993 and then 2004-2006 dropping the intermediate years for which we do not have values for BEE. As long as we do not include a lagged dependent variable this does not present econometric problems.[8] We shall also only show results for an unbalanced panel of firms. Though there may be concerns of selection here, when we tried to estimate a balanced panel over the same periods we lost so many firms that we could have little confidence in the results. We leave the modelling of this selection process for future work.

Before getting into the regressions in more detail it is useful to look at some of the data. Table 1 presents some basic descriptive statistics of the data for the period 2004-2006. The first column looks at all firms while the next two separate the average values of the variables into those for companies with low and high BEE scores, where low and high is determined by the median BEE score. Some interesting facts come out of this table. One is that comparing high and low BEE firms there do not seem to be large differences in labor productivity and investment. Profitability does seem to larger in firms which are high BEE, but it turns out this is driven by a single outlier. Even the raw numbers tell an important story. Other things which emerge are that firms which are in an industry with a charter do not seem to have much higher BEE scores. As we will shows shortly, this shows up n our instrumental variable regressions since this instrument works much less robustly and convincingly than the others. Finally, the

[8] In ongoing work we hope to be able to complete the BEE picture between 1993 and 2004, though this will probably only be possible for ownership and management. We tried various strategies to interpolate the missing BEE data between these dates so we could exploit more of the company level data but this gave results very similar to the ones we report below.

bottom row of Table 1 shows that a far larger number of firms with a dominant shareholder are in the low BEE category.

Figures 3,4 and 5 bolster the impression got from Table 1. They shows the scatter plots of the raw data, averaged over the periods 2004-2006 of the aggregate BEE score against investment, labor productivity and profitability. These pictures show no real relationship between any of the variables. There may be a hint of a positive relationship between BEE and labor productivity, but the regressions will show that this is not significant. There seems to be little correlation between the BEE score of a company and any of these key measures of firm performance.

Even though we cannot confidently identify the impact of individual components of BEE on company performance, it is instructive to look at the correlations present in the data. Table 2 is therefore the correlation matrix of the different components of the BEE score. One very interesting fact comes out of this table. The ownership score of a company is not as highly correlated with the other broad based components of BEE as the management score is. Indeed, the positive correlation between ownership and these other components is uniformly lower than the similar correlation for management. Some of these correlations are very low. Figures 1 and 2 show the scatter plots between the BEE scores for ownership and enterprise development and management and enterprise development. Though there is some correlation in Figure 1, it is very low. It is higher in Figure 2. This data suggests that of the two types of N-BBEE, it is management rather than ownership that has a more powerful effect on B-BBEE.

We now turn to the regression evidence. Table 3 shows three set of regressions using the aggregate BEE score as the main explanatory variable and where the different set of regressions correspond to the three different firm level dependent variables we investigate. Each set has two columns. The first column reports estimates using pooled OLS while the second introduced fixed effects. All regressions have time effects. The main message from Table 3, using either pooled OLS or fixed effects is that there seems to be no really significant effect of the BEE score on any of the dependent variables. With the fixed effects there may be some suggestion of a positive effect on investment and a negative one on labor productivity, but since these regressions are unidentified one should not take this too seriously given the potential problem

of omitted variables bias.

Table 4 repeat Table exactly except now we take the BEE ownership score as our independent variable. The results are very similar to those in Table 3.

We now move to the use of our three instruments. Table 5 uses only investment as the dependent variable. The first three columns use the aggregate BEE score as the explanatory variable while the last three use the BEE ownership score. Panel A records the second stage regression results while Panel B of the Table records the three different first stages for each explanatory variable which correspond to our three different instruments.

First consider Panel B. Column 1 shows that there is a significant positive relationship between the proportion of a companies equity held by the PIC and its BEE score. Figure 6 shows this relationship in a scatterplot. Panel A column 1 then shows the estimated effect of the aggregate BEE score on investment when the BEE score is instrumented by the PIC score after 1993. Now the estimated coefficient is negative, but it is not statistically significant. The second column of Panel B shows a positive and significant relationship between the charter dummy and the BEE score while the third column shows a string negative relationship between the dummy for a controlling interest and the BEE score. In all cases the first stage regressions work well and the estimated effect of BEE in the second stage is negative, though not statistically significant. We note however that the standard errors on these regressions are very large and a pressing issue for future work is to find ways to make our estimates more precise. The picture with respect to the BEE ownership score in the last three columns is similar. The first stages work well in predicting the ownership score, though as we have discussed above, it is really the third strategy where the exclusion restrictions are most plausible. In column 6 the effect of the BEE ownership score on investment is negative with a t-statistic of about 1.25.

Table 6 repeats Table 5 but with labor productivity as the dependent variable. Note that because of missing data the samples of firs change and this is why, for instance, the first-stage regressions have different coefficients across the tables. Note that with the smaller sample of firms in Table 6 neither the sectoral charter instrument nor the PIC instrument are significant in the first stage. The controlling interest instrument continues to work robustly however. The message from columns 3 and 6 in this table is similar to that from Table 5. Both the BEE score

and the BEE ownership are score are estimated to have a negative effect on labor productivity, though again these estimated effects are not significantly different from zero with t-statistics just over 1. We note again however that the standard errors are very large.

The final table, Table 7 looks at profitability. These results are less consistent across specifications than those in the other tables but the basic message is clear, there seems to be no significant impact of BEE on profitability.

8 Conclusions

For an economy to grow firms must make profits, invest, and increase their productivity. What is the role of BEE in promoting economic growth? In this paper we have discussed a large number of ways, both positive and negative that BEE can influence growth. A priori, it is difficult to know which effects will dominate. We also argued however that it is unlikely, given the way that BEE has evolved over the last 14 years, that the current structure of the policy (perhaps 'phenomenon' would be a better word!) is socially optimal either with respect to growth or other criteria, such as equity. Thus it is crucial to try to investigate empirically which effects are larger than others. We cannot pretend to have achieved such an ambitious goal in this paper. Perhaps our main contribution has been methodological. Much of the current discussion of the impact of BEE is hopelessly misconceived in the sense that it cannot possibly identify the true causal effect of BEE. It is very easy to make spurious inferences by just looking at raw correlations between economic outcomes, such as profits, and BEE scores. In this paper we have tried to explain how to investigate the impact of BEE on firm performance properly and we have developed some empirical strategies which we hope are convincing. More thought and research will lead to better strategies.

Our results will disappoint both the extreme proponents and extreme opponents of BEE. Our basic empirical finding is that, as yet, there does not seem to be significant effects of BEE on firm investment, labor productivity or profitability. If anything, we found some weak evidence that BEE has a negative effect on investment and labor productivity. There can be several reasons for these lack of effects. Most plausibly, the impact of BEE will take a long time to show up and as yet we just do not have enough data to say anything. This may obviously

be the case with components of B-BBEE which are much more recent. Alternatively, since the empirical approach is in the spirit of reduced form causal inference it does not distinguish between different mechanisms by which BEE can influence firm outcomes. Hence there could be significant positive and significant negative effects but these are cancelling each other out at the level of firm behavior. Alternatively, it could be that BEE really has no effect on firm performance, possibly because firms have found strategies for maintaining the status quo.[9] Interestingly, the evidence on profitability is not consistent with the idea that BEE has had huge payoffs in terms of rent seeking since this would likely show up as increased profitability (higher price-cost margins).

It is also important however to also recognize that, as we discussed above, our empirical results so far cannot pick up the aggregate effects of firms' BEE involvement. If by undertaking BEE, firms are providing public goods such as increased political stability, this is something that will be difficult to measure using firm level data. This is another caveat to bear in mind when interpreting our findings so far.

What policy conclusions can be drawn from this research? Any we make are obviously highly tentative, but we believe that some preliminary observations can usefully be made even if so far the empirical evidence about the impact on BEE is inconclusive. Since we stated these at the start of the paper we do not repeat them here.

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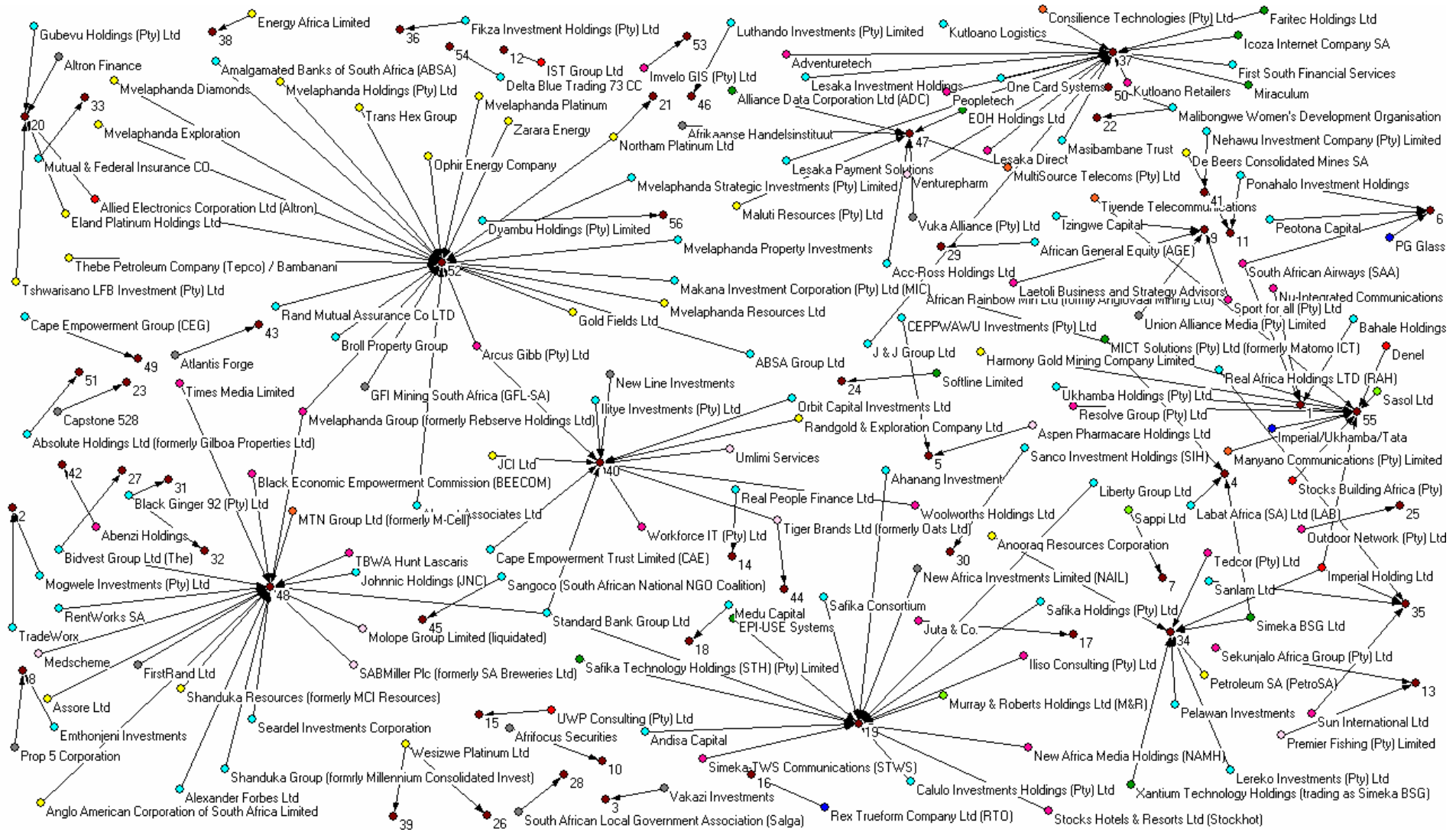
[9] We discussed above for example that one view of equity transfers is that they simple represent a pure transfer from firm shareholders to black people with no implications for firm behavior only any important margin.

Figure 0. ANC Politicians and BEE Companies by Ssectors



- Unknown
- Resources
- Basic Industries
- General Industrials
- Cyclical Consumer Goods
- Non-Cyclical Consumer Goods
- Cyclical Services
- Non-Cyclical Services
- Financials
- Information Technology
- ANC Politicians
- Utilities

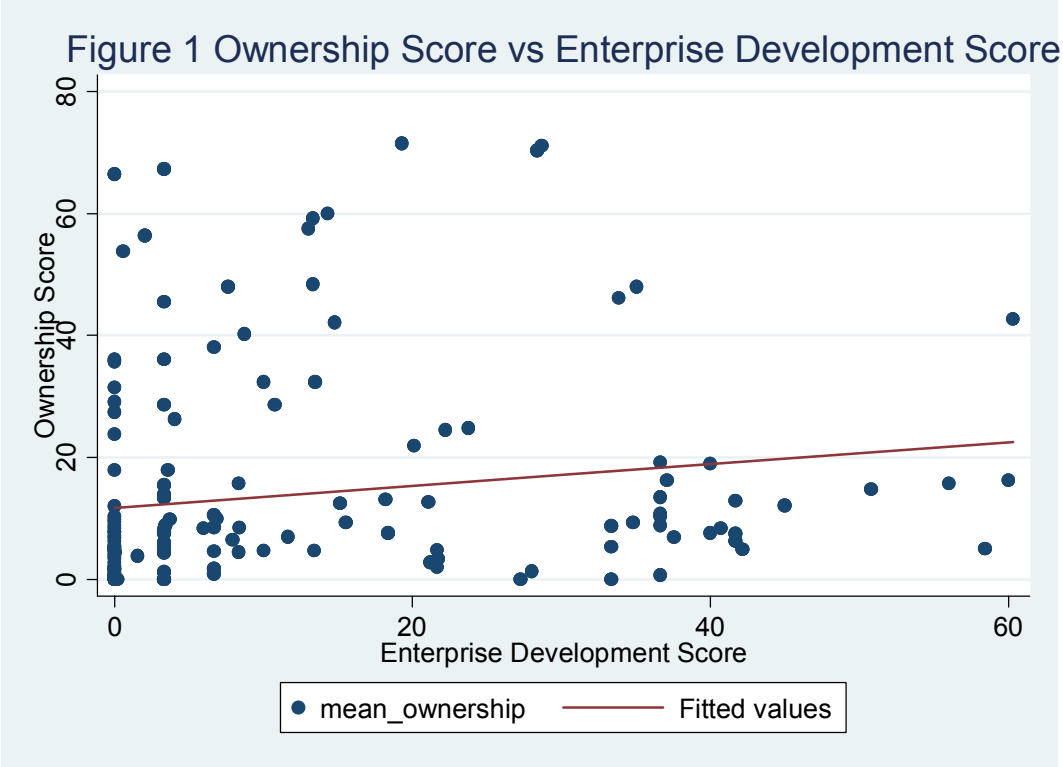
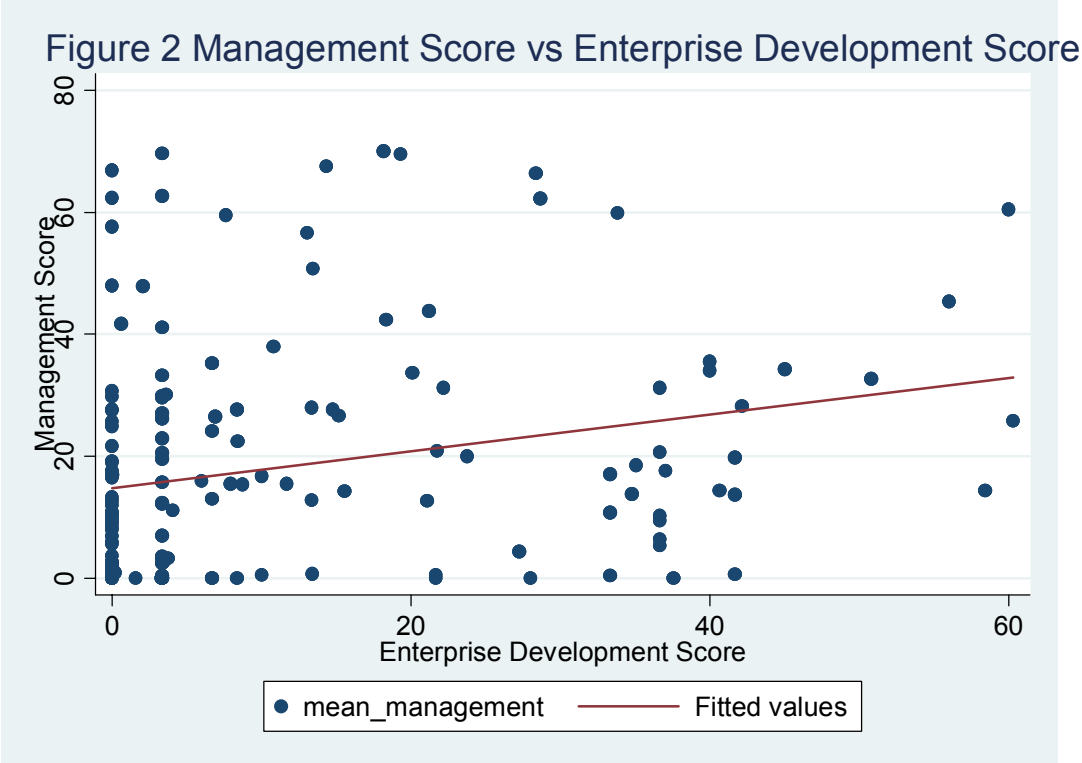


Figure drawn using variables average values.



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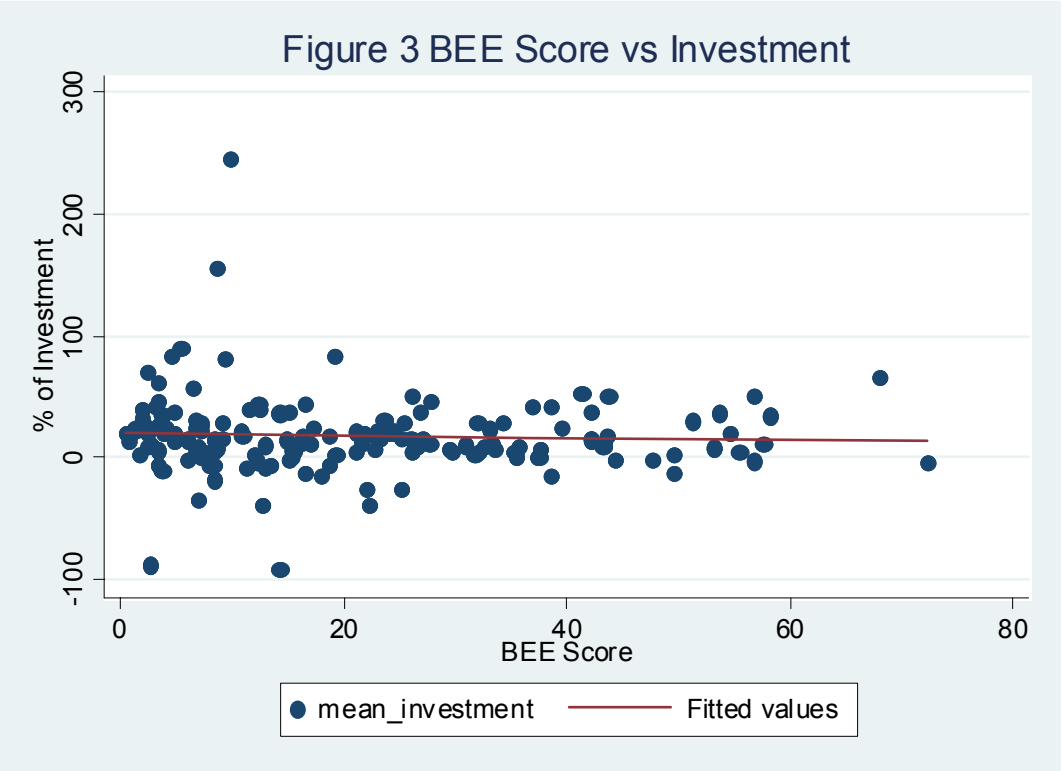

Figure drawn using variables average values and excluding four observations with Investment above 300%

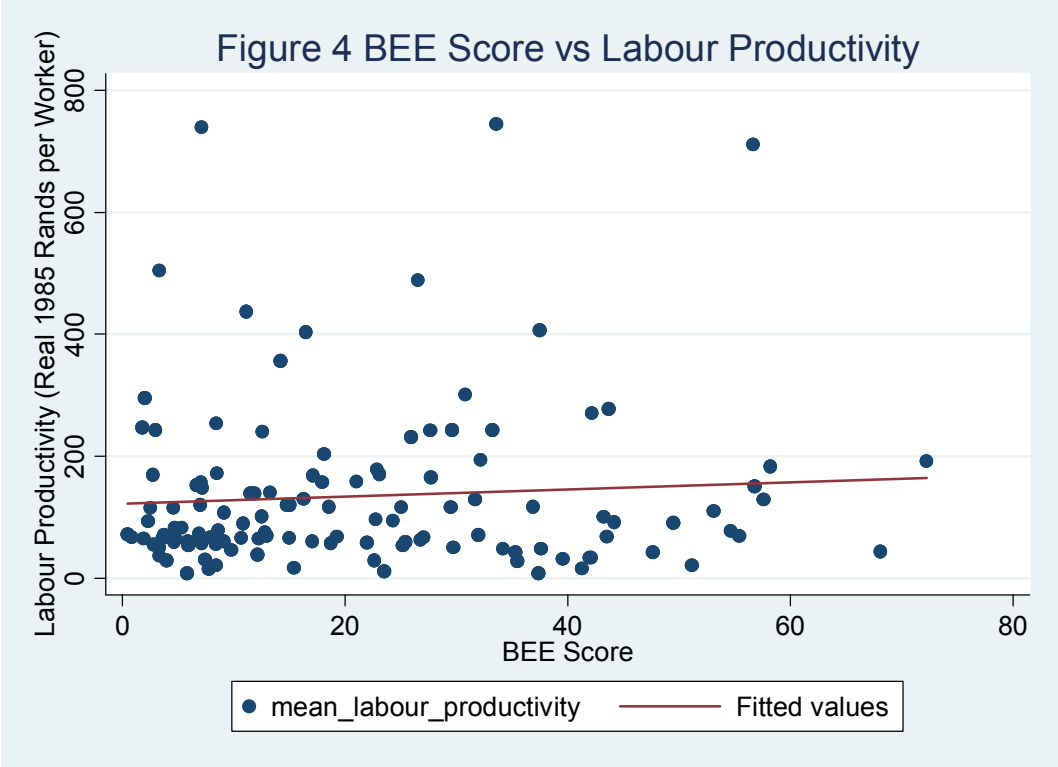

Figure drawn using variables average values and excluding one observation with Labour Productivity above 800.

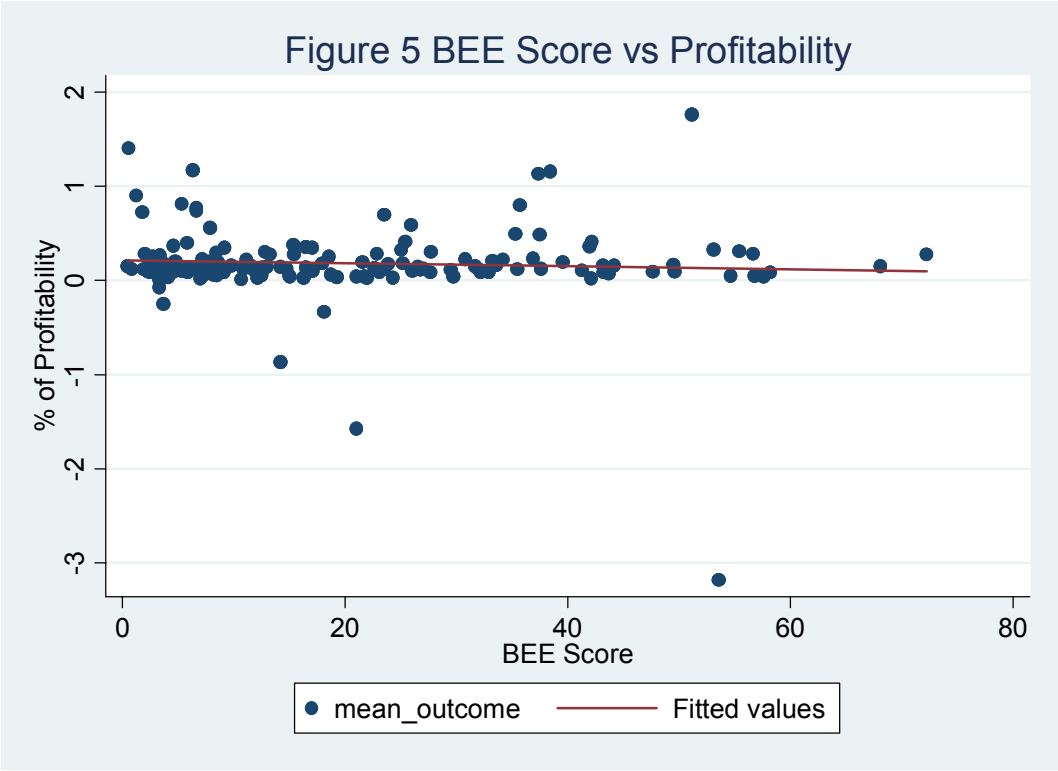

Figure drawn using variables average values and excluding one observation with Profitability above 3%.

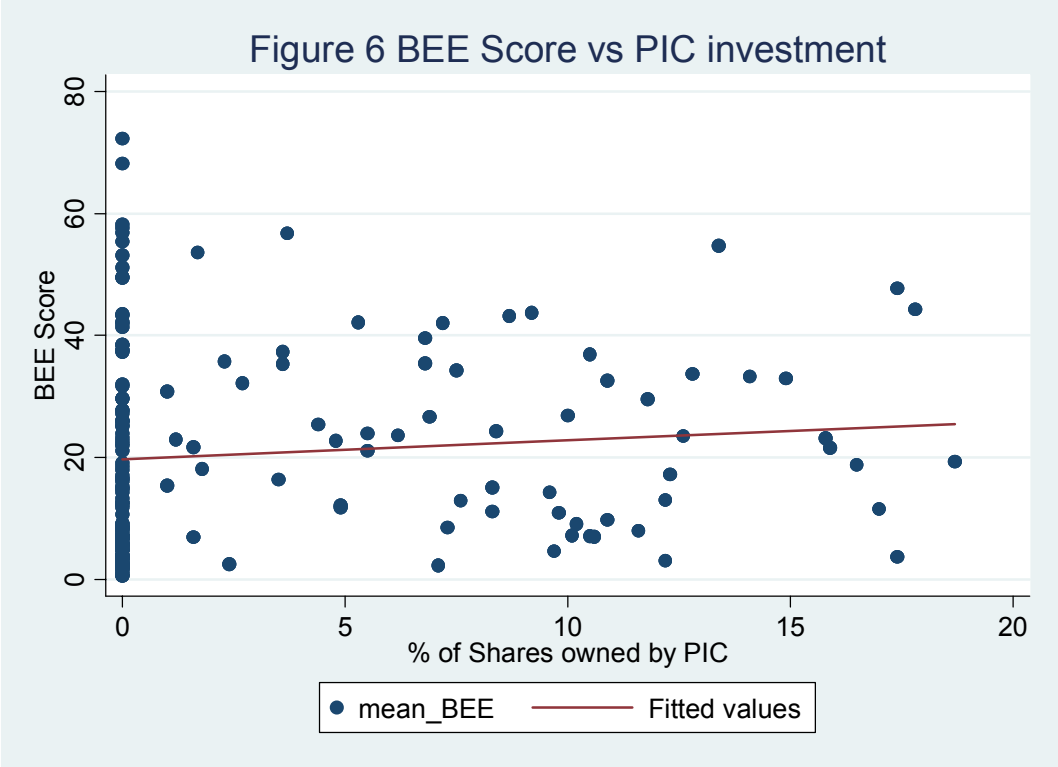

Figure drawn using variables average values.

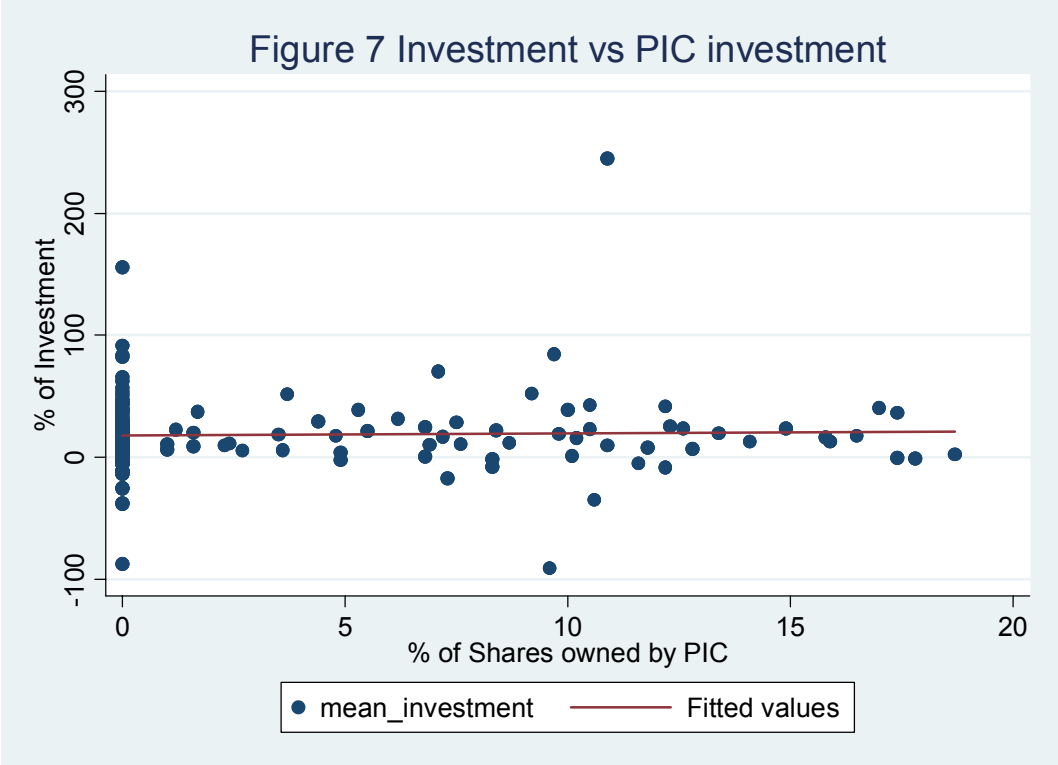

Figure drawn using variables average values and excluding four observations with Investment above 300%.

Table 1
Descriptive Statistics

	All Firms	Whole Sample Firms with high BEE	Firms with low BEE
BEE Score	20.682	37.260	4.105
	(20.173)	(15.624)	(4.430)
BEE Ownership score	13.700	23.735	3.665
	(24.945)	(31.173)	(8.544)
BEE Management score	18.084	27.722	8.446
	(27.375)	(31.983)	(17.097)
BEE Employ Equity score	15.229	25.934	4.523
	(24.557)	(27.686)	(14.558)
BEE Skills Development score	15.816	29.495	2.137
	(25.363)	(29.554)	(6.324)
BEE Procurement score	9.353	18.148	0.559
	(18.086)	(22.041)	(3.798)
BEE Enterprise Development score	11.013	18.699	3.327
	(24.744)	(29.183)	(16.023)
BEE Commuity Social Investment score	11.454	21.682	1.225
	(22.160)	(27.352)	(5.084)
Profitability	0.363	1.238	0.133
	(5.783)	(12.521)	(1.017)
Investment	44.917	57.089	41.723
	(471.086)	(340.982)	(499.768)
Labor Productivity	145.683	153.438	142.389
	(460.551)	(179.191)	(537.399)
% Shares Owned by Public Investment Commision (PIC)	3.316	3.496	3.044
	(5.161)	(5.272)	(5.016)
Firms with a charter	0.578	0.600	0.545
	(0.495)	(0.492)	(0.502)
Firms with shareholder owning more than 50%	0.264	0.169	0.389
	(0.443)	(0.377)	(0.492)

Data is the average across firms of the 2004-2006 average values for each firm. Standard errors are in parenthesis.
High and low BEE firms are defined as the firms above and below the median firma according to the BEE score.
Profitability is defined as operating profit divided by turnover.
Investment is defined as the yearly change in the real capital stock, net of depreciation, as a fraction of the initial capital stock.
Labor productivity is defined as real turnover divided by number of employees.

Table 2
Correlations Matrix

	BEE Score	BEE Ownership score	BEE Management score	BEE Employ Equity score	BEE Skills Development score	BEE Procurement score	BEE Enterprise Development score	BEE Commuity Social Investment score
BEE Score	1.000							
BEE Ownership score	0.620	1.000						
BEE Management score	0.629	0.678	1.000					
BEE Employ Equity score	0.649	0.532	0.693	1.000				
BEE Skills Development score	0.705	0.443	0.606	0.719	1.000			
BEE Procurement score	0.681	0.533	0.615	0.653	0.690	1.000		
BEE Enterprise Development score	0.471	0.260	0.435	0.540	0.487	0.443	1.000	
BEE Commuity Social Investment score	0.589	0.433	0.522	0.609	0.587	0.493	0.353	1.000

Table 3

Panel Data Regressions

Dependent Variable:	Investment		Labor Productivity		Profitability	
	Pooled OLS	Fixed Effects OLS*	Pooled OLS	Fixed Effects OLS*	Pooled OLS	Fixed Effects OLS*
BEE Score	0.262	2.649	-1.310	-1.056	0.012	0.009
	(1.140)	(1.846)	(1.251)	(0.646)	(0.014)	(0.009)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1068	1068	597	597	1026	1026
Number of Firms	159	159	127	127	153	153
R Squared	0.014	0.008	0.020	0.016	0.008	0.007

Standard errors in parentheses.

Constant not reported.

*Robust standard errors.

Table 4

Panel Data Regressions

Dependent Variable:	Investment		Labor Productivity		Profitability	
	Pooled OLS	Fixed Effects OLS*	Pooled OLS	Fixed Effects OLS*	Pooled OLS	Fixed Effects OLS*
BEE Ownership score	0.649	0.102	0.242	-0.631	0.051	0.027
	(0.925)	(0.120)	(1.026)	(0.341)	(0.011)	(0.040)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1068	1068	597	597	1026	1026
Number of Firms	159	159	127	127	153	153
R Squared	0.015	0.010	0.018	0.011	0.026	0.024

Standard errors in parentheses.

Constant not reported.

*Robust standard errors.

Table 5
Instrumental Variables Panel Data Regressions

Panel A: Second Stage

Dependent Variable: Investment

	(1)	(2)	(3)	(4)	(5)	(6)
BEE Score	-11.726	-28.870	-18.082			
	(12.757)	(22.447)	(13.887)			
BEE Ownership score				-13.232	-13.836	-20.503
				(14.789)	(9.490)	(16.459)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: First Stage

Dependent Variable:	BEE Score			BEE Ownership score		
PIC*Post BEE dummy	0.474			0.420		
	(0.131)			(0.175)		
Industry Charter dummy*Post BEE dummy		3.559			7.426	
		(1.481)			(1.965)	
Shareholder with > 50% dummy*Post BEE dummy			-6.607			-5.827
			(1.727)			(2.132)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1068	1068	861	1068	1068	861
Number of Firms	159	159	121	159	159	121
R squared	0.414	0.419	0.434	0.205	0.229	0.219

Robust standard errors in parentheses.
Constant not reported.

Table 6
Instrumental Variables Panel Data Regressions

Panel A: Second Stage

Dependent Variable: Labor Productivity

	(1)	(2)	(3)	(4)	(5)	(6)
BEE Score	-23.730	13.127	-5.760			
	(18.714)	(16.092)	(4.539)			
BEE Ownership score				-20.751	20.394	-8.339
				(18.255)	(39.132)	(7.683)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: First Stage

Dependent Variable:	BEE Score			BEE Ownership score		
PIC*Post BEE dummy	0.294			0.337		
	(0.210)			(0.272)		
Industry Charter dummy*Post BEE dummy		3.283			2.113	
		(2.723)			(3.538)	
Shareholder with > 50% dummy*Post BEE dummy			-9.020			-6.231
			(2.853)			(3.462)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	597	597	480	597	597	480
Number of Firms	127	127	99	127	127	99
R squared	0.332	0.339	0.374	0.154	0.178	0.199

Robust standard errors in parentheses.
Constant not reported.

Table 7
Instrumental Variables Panel Data Regressions

Panel A: Second Stage

Dependent Variable: Profitability

	(1)	(2)	(3)	(4)	(5)	(6)
BEE Score	-0.060	0.350	0.010			
	(0.145)	(0.540)	(0.028)			
BEE Ownership score				-0.058	0.155	0.012
				(0.142)	(0.210)	(0.036)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: First Stage

Dependent Variable:	BEE Score			BEE Ownership score		
PIC*Post BEE dummy	0.490			0.506		
	(0.133)			(0.170)		
Industry Charter dummy*Post BEE dummy		1.767			3.995	
		(1.524)			(1.941)	
Shareholder with > 50% dummy*Post BEE dummy			-5.365			-4.304
			(1.734)			(2.104)
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Time Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	1026	1026	836	1026	1026	836
Number of Firms	153	153	119	153	153	119
R squared	0.398	0.402	0.418	0.186	0.210	0.212

Robust standard errors in parentheses.
Constant not reported.

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