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The original criticisms of the Adcorp Employment Index (February 2012)

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Adcorp's estimated unemployment rate is so low that it disposes of the unemployment crisis. But Adcorp uses a crude currency-demand method to estimate the size of the unrecorded economy, despite researchers' strong criticism of this method. To estimate informal sector employment, Adcorp mixes up definitions of informal employment and the unrecorded economy and guesses at the labour intensity of the unrecorded economy. They also guess at the number of illegal immigrants. Moreover, Adcorp's estimates have no statistical precision. Its figures are neither reliable nor credible.

Editor's note: This is a shortened and edited version of a paper made available on the DataFirst website in February 2012.

Introduction

In November 2011 we wrote to *Business Day* expressing our concerns about the claims made by Adcorp in the Adcorp Employment Index (AEI) and the lack of transparency of their methods. Unfortunately the methods used in the AEI have still not been set out transparently on the AEI website. Instead, our understanding of the index is derived from a series of emails sent by Loane Sharp of Adcorp to the authors setting out the methodology behind the index.

In this paper we set out several criticisms of the methodology used in the Adcorp Employment Index and assess some of Adcorp's criticisms of Statistics South Africa's (StatsSA) employment estimates. Our conclusion is that the Adcorp Employment Index does not estimate employment in South Africa reliably or credibly.

The Adcorp Employment Index methodology

Released by Adcorp every month, the Adcorp Employment Index (AEI) is an estimate of employment in South Africa. In 2011 Adcorp introduced a new version of the AEI which, without explanation, suddenly lifted their estimate of the total number of employed people from 12.9 million in December 2010 to 19.1 million in January 2011. This massive increase was due to Adcorp's adding a new category of employment, called 'unofficial sector employment'.

Their new 2011 AEI thus expands employment by approximately 50% to include both 'official' and 'unofficial' employment. The former served as their 'total employment' up to December 2010 and approximated the StatsSA total employment figure (which includes informal employment).

Adcorp mentions that the unofficial sector is not recognized by Statistics SA and is estimated by Adcorp to number 6.2 million people: "It includes unrecorded and, in some cases, illegal transactions such as employment of unregistered foreigners, evasion of income, payroll and other taxes, and other economic activity in the underground economy" (Adcorp, 2011b).

When this 6.2 million is added to StatsSA's informal sector employment figure (approx 2.2 million at the time), Adcorp gives us a new estimate of what we will call 'non-formal' employment¹ of roughly 8.5 million people (in 2011).

When one compares the total employment figures given by Stats SA and Adcorp in 2011, almost all of the difference stems from the sudden addition of Adcorp's 'unofficial sector employment'.

Our main criticism of the Adcorp Employment Index is of this estimate of 'unofficial sector employment' and thus of non-formal employment. This estimate involves (i) a method that has been roundly condemned in the academic literature and (ii) assumptions that are almost certainly wrong.

Estimating non-formal employment: definitions matter

The StatsSA labour force surveys are designed to obtain estimates of all employment undertaken by individuals in the households surveyed. StatsSA breaks down total employment into formal sector employment, informal sector employment, employment in agriculture, and employment in private households (domestic workers, gardeners etc.). Informal sector employment is defined as employment which takes place in firms which employ less than 5 people and which do not deduct income tax, and the employment of "(e)mloyers, own-account workers and persons helping unpaid in their household business who are not registered for either income tax or value-added tax" (Statistics South Africa, 2010).

In the literature on national accounts and the measurement of employment the distinctions between 'unrecorded activity', informal employment, the informal sector and hidden activities are crucial. Even though they are conceptually distinct, in practice they often overlap partially. As noted in an IMF working paper, "Informal activities may well be recorded, activities hidden from tax authorities may well be reported in statistics, and illegal activities may well be included (directly or indirectly) in official statistics" (Bloem and Shrestha, 2000).

The AEI mixes up these definitions and disregards the problem of overlapping. When attempting to estimate non-formal employment (see below), it uses an (inaccurate) estimate of the size of the unrecorded economy which does not necessarily coincide with the size of the income generated by non-formal employment. For example, some of the employment in private households is likely to be part of the unrecorded economy – yet this is included in official employment in the AEI, in addition to the estimates of the non-formal sector that are based on the size of the unrecorded economy.

¹ Theoretically we define non-formal employment as all employment that is defined by StatsSA as not being either formal employment, agricultural employment or employment in private households, but we use the shorthand 'non-formal' in this paper. Part of the problem, as we discuss below, is that the estimation method used in the AEI cannot credibly estimate non-formal employment.

Estimating non-formal employment: methods and assumptions matter

Adcorp uses a simple version of the currency-demand method in order to estimate, first, the size of expenditure in the unrecorded economy and then, secondly, the amount of non-formal employment that needs to be present to generate this level of expenditure.

Both steps of their method rest on very dubious assumptions.

Currency-demand methods are based on the observation that some economic activity takes place outside the formal sector. Some of this activity is unlikely to be recorded, since it involves firms that are not registered or paying tax and individuals that work without formal contracts and do not pay taxes; it may also include criminal activities. If this activity is mostly conducted in cash, the difference between the amount of cash in circulation and the level of gross domestic expenditure is assumed to indicate the level of unrecorded activity. (The foregoing is a particularly crude variant of the currency-demand methods that have been used since Feige 1979).

Currency-demand methods have been criticised by economists at the IMF (Bloem and Shrestha, 2000) and the OECD (2002) as well as academic economists (cf Thomas, 1999). One criticism is that it is not clear what the difference between cash supply and Gross Domestic Expenditure (GDE) actually represents, since cash has uses other than in unrecorded activities. Currency demand methods also require the twin assumptions that the frequency with which money is spent per unit of time (what is called the velocity of money) is constant over time *and* that it is the same in the recorded and unrecorded economies (Bloem and Shrestha, 2000). However, the velocity of money actually varies and it is very unlikely that it is the same in both recorded and unrecorded transactions.

Adcorp's second step is even more troubling. Adcorp uses an estimate of the size of the *unrecorded economy* to generate an estimate of the size of *non-formal employment* – something we have not seen any other studies do. Apart from definitional problems, this involves assuming that the labour intensity of unrecorded productive activity is *20% more labour intensive* than in the formal sector. This number is not based on any data, it is simply a guess. It may well be that unrecorded activity is more labour intensive, but whether this is true and by how much is not discussed in the AEI.

The currency-demand method has its defenders (cf Bhattacharyya, 1999), but this defence is of a much more sophisticated method than Adcorp's. Nevertheless, as one of the method's defenders acknowledges, the lack of statistics like standard errors to assess precision is a major weakness of most of the estimates of the size of the unrecorded economy (Bhattacharyya, 1999). Thus, even if all other aspects of Adcorp's method were unproblematic, we (and they) would have no sense of the precision of their estimates.

Using non-formal employment estimates to compile the Adcorp employment figures

The final non-formal employment figure estimated from the currency-demand method (around 8.5 million) is included in the AEI in a rather opaque way. In their published AEI figures since 2011, Adcorp distinguishes between official and unofficial employment, where official employment basically is equivalent to StatsSA's 'total employment' (which includes informal employment). The total level of non-formal employment estimated from the currency-demand method is then split into an unofficial and an official part to bring their 'official' employment levels roughly in line with

StatsSA's total employment estimates; the residual 6.5 million goes into the 'unofficial' category.² (This is not clearly explained in the presentation of the AEI, contributes to a lack of transparency in the index and makes it difficult for journalists and others to evaluate Adcorp's claims.³)

Adding 'illegal migrants'

Adcorp's estimate of *total employment* actually exceeds StatsSA's estimate of the *size of the labour force* (i.e. the number of people working plus those unemployed persons who are willing and able to work and looking for work). To avoid producing a negative unemployment rate, Adcorp adds 2.5 million "illegal migrants" to the labour force estimates of Statistics South Africa. How this figure is obtained, or whether or how it is adjusted over time is not explained anywhere in the AEI as far as we can tell, despite this being an important assumption and criterion with which the public may judge the quality of the AEI.

An about-turn on unemployment?

An important result of the large estimates of employment in the 2011 AEI is that Adcorp has effectively done away with the South African unemployment problem. Adcorp believes there are around 19 million employed people in South Africa and, including the 2.5 million 'illegal migrants', the total labour force is around 20 million, meaning that the unemployment rate is around 5%.

An irony in this dramatic change is that the Adcorp CEO Richard Pike and Loane Sharp have recently written a book, whose publication was sponsored by Adcorp, in which they argue that SA faces an 'impending unemployment crisis' (Pike et al 2010).⁴ It seems that Adcorp's changes to its employment index in 2011 have effectively made this impending crisis vanish.

Adcorp's criticisms of StatsSA employment figures – are they valid?

Adcorp's own rationale for its employment index is that StatsSA is underestimating the level of employment and that unemployment simply cannot be as high as StatsSA's estimates. It is not clear exactly how Adcorp thinks StatsSA is underestimating unofficial employment. One potential reason is that individuals may hide activities that have not been declared to the South African Revenue Services in the belief that the survey data would be passed on to SARS. However, this could well be true also for *formal* employment activities estimated by StatsSA, yet Adcorp has no problem using this employment data from StatsSA in calculating their index.

Loane Sharp has pointed out to us that the Finscope Survey of Small Businesses (Finscope 2010) finds much higher levels of self-employment in small firms than Statistics South Africa. This is taken

² This means that, in the Adcorp figures, not-formal employment is counted partly in 'unofficial sector employment' and partly in 'official sector employment'.

³ Interestingly enough, the values and graphical depiction of the Index didn't change at all when Adcorp introduced the 50% increase in employment with 'unofficial employment'. It implies that they assume that the unofficial component of employment has remained constant from 2000 to 2011, which is at odds with their monthly interpretation of employment fluctuations and devalues any value that their employment data series may have.

⁴ In addition to a number of dubious claims the book states that 3.5 million Zimbabweans have been absorbed into the South African labour market in the last ten years, whilst the AEI figure is 2.5 million 'illegal migrants' (origins unspecified).

by Sharp as evidence that the StatsSA employment numbers must be incorrect. We agree that it is puzzling that the Finscope survey finds higher numbers than StatSA, but until the Finscope survey data and detailed methodology are in the public domain it will not be possible to resolve this puzzle. Still, several other surveys conducted by academics from UCT, UKZN and several American and British universities have found similarly high levels of unemployment as StatsSA. The surveys include the Project for Statistics of Living Standards and Development in 1993, the KwaZulu-Natal Income Dynamics Study (1998 and 2004), the Cape Area Panel Study (2002-2006) and the National Income Dynamics Study (2008).

A further criticism of StatsSA's informal employment numbers by Loane Sharp (2011) focuses on the high correlation between the level of employment from the Quarterly Employment Survey (which surveys only *formal sector firms*) and the Quarterly Labour Force Survey, which surveys *households* and the *individuals* who make up these households – and thus should measure both formal and informal employment. Sharp argues that the high correlation between the two employment estimates suggests the QLFS is only really measuring formal employment – thus it underestimates total employment. This argument reveals a lack of understanding of basic economic statistics. A high correlation between two employment data series do not mean they measure the same thing: two series can be highly correlated over time simply because they are influenced by a common trend, for example the state of the economy.

Conclusion

Questions about whether South Africa has high or low unemployment must be settled with high quality data, rather than on prior beliefs and guesses. We have shown that the Adcorp estimates of employment are most definitely not of high quality and pointed to several other surveys that confirm or support the estimates of Statistics South Africa.

Adcorp's estimated unemployment rate is very low and disposes of the impending unemployment crisis outlined in the recent book sponsored by Adcorp. None of Adcorp's estimates have any kind of statistical precision attached to them, and it is not hard to see why.

Unfortunately these issues are not easily identified by the public, journalists or even academic researchers since Adcorp is very reticent to spell out its methods publicly. This makes it very difficult to evaluate the truth of Adcorp's claims without investing significant amounts of time, a commodity in short supply for the journalists who regularly discuss the Adcorp Employment Index and publicise Adcorp's 'findings'.

All of the survey data available in the post-apartheid period, except Finmark's small business survey, suggest that employment is much lower and unemployment much higher than Adcorp claims. So does simply looking around. The Adcorp Employment Index may be a very effective source of free advertising for Adcorp, but it is not a reliable and credible way of estimating employment in South Africa at all.

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Editor's note: This is a shortened and edited version of Wittenberg & Kerr (2012a). There also is a second, longer and more technical critique (Wittenberg & Kerr 2012b). See the [download instructions below](#).

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- Both of these papers can be downloaded from:
<http://www.datafirst.uct.ac.za/home/index.php?/Search?ordering=&searchphrase=all&searchword=adcorp>