

# **“Poor Numbers” by Morton Jerven - A critical review**

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Several years ago Martin Sorrell, CEO of WPP at that time, told me in a frank moment that it had been the plan of the western financial world to starve Africa of capital and wait till it fell apart and then acquire its resources on the cheap. However the Chinese have spoilt that play. For the time being put this comment aside and we will come back to it at our conclusions.

This is a book about data, economic data, its accuracy and relevance. Before entering the world of development economics let us start by looking at this from the world of capital markets, an area where economists, accountants and consultants spend considerable time and expense studying and modelling.

What data would a CEO and an investor consider most relevant at the start of a year? The standard answer is that the only really relevant data is data about future performance which itself will be impacted by future developments in the market. Past year's performance will only be relevant to the extent that it sheds light on likely future performance. If last year was significantly impacted by a drought or windfall profits then last year's figures will be of slight relevance. Investors would look at the market trends, likely increase or decrease in competition, entry or exit, changes in legislation, changes in technology etc. One cannot study capital markets at any level without being reminded that sunk costs are gone and should be forgotten and that the future is what matters.

Strangely when it comes to development economics this whole approach is turned on its head. Suddenly we are invited to believe that the past is the key data for making decisions about the future. Despite the fact that Zambia is dependent on a small number of resources for the majority of its foreign exchange, development economist consider the national income statistics of past years as key factors for decision making. One would have thought the most important data department for Zambia would be one focussed on understanding the international copper market and likely trends in prices and volumes to allow the country to adjust in advance and to optimise its positions. Not a word in this direction is to be heard from Jerven and I suspect other development economists.

Why are records obtained and kept? Among the earliest archeological records are tablets containing tax records. The ruler needed to know how much tax should be raised, has been raised and has been returned to his treasury. But in Jerven's presentation the primary purpose of records is to supply development economist with data. Economic data in contemporary world can become political data and in effect weaponised as part of ideological warfare. At Chatham House the OECD presented its African Economic Outlook

for 2007 (note 1 ). Frederika Marzo made a presentation and afterwards I asked her if she had included the billions of remittances in her data. She said she had not included these massive sums but that in any case they were under instructions that the data they presented should be in accordance with the model of African economies that had been developed at Head Office. This meant that the OECD report on the performance of African economies was a pre-destined set of numbers following an existing set of theoretical assumptions. If a country adopted policies that OECD considered unwise the model would show negative result and OECD would report the negative performance as a fact. Conversely, if a country adopted the policies that OECD recommended it would be shown to have performed well. This is clearly weaponising the 'data' and the Western economics establishment has been complicit.

How does Jerven relate the quality of data to tax collection? He states 'Unable to collect taxes on land, income or production, states were reduced to collecting taxes at ports by levying duties on exports and imports.' (p.3) This is completely untrue. The question is not that they do not collect taxes from the people but why? This is quite simply because they do not provide a service to the people. An attempt to collect taxes would generate sufficient unrest to lead to possible overthrow of the government. Tax riots are famously powerful in overthrowing governments. But the key issue is the delivery of a service. Lagos State began delivering service to the residents and in a short time was able to become completely independent from Federal grants. Taxes can only be collected with consent of the population. The colonial regime preferred to collect taxes at the boundaries as that created less demand for consent. As with the US Tea Party and subsequent US war of independence locals will always see the collection of taxation as the flash point of consent to be governed.

Once one understands that the key issue is one of taxation and the unwillingness of the states to subject themselves to the test of consent then an altogether different perspective arises. In Lagos State there are more and more attempts to obtain better data for taxation at the same time the State governments is engaged in major infrastructure programs whose benefits are entirely visible and tangible for all to see. Tax riots are not on the horizon.

This perspective does correlate the known facts that after Independence the capacity for statistic recording was being strongly increased. At this time the state was investing mightily in schools, hospitals, infrastructure and nascent industries. Consent was expected. During and immediately after structural adjustment government provision was collapsing making the likelihood of any consent for increasing taxation negligible and so the state need for data declined and so the provision of statistical services became a low priority.

There are two points in Jerven's reflections that relate to this: the description of 'informal' sector and his theory of data production quality.

'Informal Sector'

This term should be abolished as meaningless. It is merely a snobbish reflection on those who don't speak English, wear suits and work in offices. There is nothing 'informal' about this so-called 'informal' sector. They are simply the untaxed. Once the state wishes to tax them and provides an incentive for them to be taxed (for example Lagos State required 3 years tax certificates to be presented in order to enter a ballot for low cost housing) these persons will become taxed and recorded without any further change to their economic activities.

He mentions the 'unrecorded economic activity' without any analysis of why it should be unrecorded as if the only answer is lack of resources! (p.11) In Western economies economic activity is recorded if it is to be taxed but the same conundrums arise. If I hold a banquet and do the catering myself with the help of friends there is no economic activity but if I use a catering firm there is. If I prepare someone's garden in return for their providing minor accountancy services for free there is no economic activity but if we pay each other there is ...but once we pay each other the activity is taxable. The key question is not that the activity is unrecorded but why the government chooses not to tax it. ( King John sought to tax marriages of barons and other private events and lived to rue the day.)

If we have shown why the state may or may not wish to collect taxes and so may or may not wish to have good data we are left with the role of multilateral agencies. Jevern mentions that after Independence the statistical capacity of African states greatly increased but during structural adjustment they deteriorated ...'In retrospect it may be puzzling that the International Monetary Fund (IMF) and World Bank embarked on growth-oriented reforms without ensuring that there were reasonable baseline estimates that could plausibly establish whether the economies were growing or stagnating.' (p.5) It may be puzzling to some, to others it may just be proof that they just did not care.

But behind all this is another agenda. If we, the development economists, could obtain good data we could using objective and neutral technical tools make the correct development decisions. In effect if we, the development economists, had good data we could under guise of the objectivity of our technical tools subvert the autonomy and integrity of African countries and seize control of their policy making processes.

#### Quality of data

As to be expected Jevern has much to say about data quality. He writes: 'I argue that poor numbers fundamentally shape what we know about development in sub-saharan Africa, which in turn shapes how decisions are made..' (p.4) This is exactly backwards! In terms of the capital markets this makes no sense at all. Decisions about the future should be made primarily on the basis of available information about the future.

Jevern suggests: 'All other things being equal, there are apriori grounds to believe that poorer economies will have lower quality statistics. A poorer economy will have relatively fewer available resources to fund the functions of an official statistics office.' (p.2) This is entirely the opposite of reality. If we take the capital markets and ask if a smaller company is likely to have more accurate information than a behemoth and the answer would always be

positive despite the legions of accounting staff at the behemoth. The behemoth would have rounding at very large numbers compared to a small company and many more assets and liabilities of variable valuation. Accuracy and reliability would not be a simple equation with resources available but would also reflect the actual scale and variability of the underlying events. But this shows a tendency for condescension and patronising. The powerful techniques of statistics, random sampling etc, would allow considerable accuracy if it were required.

He enters into a rather silly digression into etymology 'It is useful to remember that the word statistics is directly linked to the word state..' which rather foolishly confuses the history of a word and an archeology of its meaning as the word suffered a violent change of meaning as it became encompassed in mathematics. (p.3)

### Data providers

Jevern sets the scene of the world of an African statistical office as a very sorry place. Jerven sets out to provide 'an ethnography of national income accounting in Africa'. A sociology might have been more relevant. He writes: 'It is important to show that African statistics are of dubious quality..' (p.xiii). The language here is interesting. He uses the term *African statistics* rather than statistics about Africa. This will haunt our discussions. Are OECD and World Bank data 'African' statistics? Calling them African even though produced elsewhere, does that offload the liability for bad data onto Africans?

'It was 2007 ...'

'The national accounts division had three employees, of whom only one was regularly in the office while I was visiting. No one at the office could account for how the income estimates had been made more than a decade ago. .... The data and methods used to estimate Zambian national income had last been revised in 1994.... I was surprised by the lack of basic data and the rudimentary methods in use.. Regular and reliable data were available only on government finances and the copper sector...' (p.x)

He then begins quoting anonymous sources who 'did not want to be named' (p.x) like a hack journalist rather than a formal academic. What on earth is the value of anonymous comment in an academic work? We are not revealing government secrets here. Even a journalist will recognise that if the source will not be identified then one must find the originating data oneself. He then states ..' the availability and reliability of data on economic development are poor and are getting worse while the data on social development are getting better and better.' No evidence is provided for this statement which threatens the entire structure of the essay. If good data can so easily be obtained in the case of social development why is it not obtained for economic development? His insinuation that it is all due to changes in priority of foreign donors is incoherent as the data on economic development was poor even when it was a priority for foreign donors.

But this sorry tale of underpaid staff and cramped offices deflects attention from the key issues. It is a fundamental of accounting that there is no way of determining the best way of

measuring something until you are clear as to why you are measuring it. What is the value of software in a technology company? This will differ if you are seeking to value the company for sale or for investment or for evaluating its long run solvency. However Jerven continues the smokescreen that national statistics can be neutral and objective regardless of the purposes sought to be made of the numbers.

Jerven sets about giving a theory of data production that defies reality. According to Jerven the quality of data depends on 'whether the statistical office has any data, how good those numbers are, and what the national accountants do when data are missing.'(p.13) This gives the erroneous impression that data is all about the simple accumulation of raw data points. Fundamental questions are not asked: who wants the data and why?

Jerven suggests: 'Data availability and data sources are what matter most in terms of the quality of statistics. Statistical methods and models matter far less.' (p.15) This is exactly backwards. Data is of very little value if one does not know how it was acquired, whether it was selected or had any chance of randomness, whether the sample chosen was reasonably expected by prior research to be representative etc.

By taking the national income statistics as a starting point Jerven creates an unnecessary and insurmountable problem. An economic policy will often be directed i.e. to grow particular sectors, once one has a strategic objective getting data on performance becomes a relatively straightforward matter. If the government has no economic strategy one wonders why data would be of any consequence. However if the entire purpose was to make life easier for a Western academic seeking to further his career by publishing papers it can appear differently.

What role did the IMF and World Bank play? Jerven writes: 'In general, though, the IMF and World Bank are more concerned about maintaining the official validity of the numbers they use. This is especially true at the World Bank Data Group'.(p.xvii)

Jerven states: 'The circle of policymakers is often depoliticized. It is dominated by technocrats, donors, and international organisations that may abort, change or initiate policies based on very feeble statistics' (p.2) This is stated with no evidence and is rather incredible if one looks at any of the major national donor organisations, lists the major recipients and correlates this with national policy. For example the major recipients of US Aid are: Afghanistan, Israel, Egypt and Jordan.

([https://en.wikipedia.org/wiki/United\\_States\\_foreign\\_aid](https://en.wikipedia.org/wiki/United_States_foreign_aid) )

He reports on the faking of numbers: 'Although the UN reports national accounts in constant prices for forty-seven sub-Saharan African countries from 1991 to 2004, it has received data for less than half of these 1,410 observations, and for fifteen of the countries no underlying data has been received at all.'

Unfortunately Jerven is unable to show why this is of critical importance. The claim by Prest and Stewart that national income statistics were necessary to inform governments about prospects for economic growth were self serving, job seeking and baseless. If the African

governments dare not tax and the multilateral agencies have preconceived proposals what role would data play? Jerven's suggestion that correct data would lead to correct policy is misguided as he is only interested in historical data, sunk costs.

This book reads like a collection of essays stitched together which makes reviewing that much harder as certain topics are repeated in different places and Jerven's comments and treatment are not always consistent!

A serious issue of policy arises when Jerven assumes without evidence that the purpose of structural adjustment was to produce economic growth. Jerven states: 'Structural adjustment was undertaken because it was believed that it would revive economic growth' ... this statement is grossly false. In no case was structural adjustment a voluntary act by an African country. If structural adjustment was to facilitate a foreign exchange adjustment and a debt repayment plan as a priority then very little concern would be placed on growth statistics. Balance of payments data and debt repayment data are readily available in London and New York.

Jerven points out 'The structural adjustment process meant liberalization reforms and a withdrawal of the state, not only through privatization but also by cutting back its role as a development planner. Structural adjustment was undertaken because it was believed that it would revive economic growth. As this book documents, the IMF and World Bank neglected to reform or fund statistical offices sufficiently for there to be a capacity to measure whether growth revived or not.' An obvious question is not asked: was it in their interest to find out?

Jerven makes numerous illogical and unsubstantiated judgments such as '...some unintended consequences of some structural adjustment reforms include the deterioration of statistical capacity'. (p.52) What can it mean to say that a consequence that was entirely foreseeable was unintended? It is as if an army were to suggest that 'collateral damage' was 'unintended'.

In chapter 2 there is a serious series of errors relating to the role of privatisation, para-statal and data collection. First Jerven substitutes extensive description for analysis.

A sorry tale of librarians lacking funds to travel to collect data is told as if that were an explanation for the absence of data rather than a reflection of lack of political or other interest in the data. If in any case the data would be of very little value this would lead to vicious cycle of under investment. Over and over again description substitutes for explanation. In one place the description loses all credibility: 'In many countries some of the basic functions of the state were privatised, and with this the capacity to record national data disappeared.' (p.47) The privatisation of the supply of state services does not exempt any government from its duty to monitor and regulate the supply of those services. If there is no data the government cannot monitor or regulate and this is not privatisation but wholesale

abandonment of state obligations to its citizens. So to suggest that there is some natural process from privatisation to an increased absence of data is breathtaking. This goes further when he suggests that 'the appearance of autonomous tax collecting agencies have indeed been popular as a way of avoiding the fact that governments embezzle funds' but if as he earlier quotes Hibou 'the national accounts do not record either the volume or value of exports, nor the tax and customs revenue' then one is replacing the opportunity of government graft for private graft of a wholesale manner. (p.47) He then describes the privatisation of parastatals as creating a market-led economy. This is complete nonsense. Privatised telephone services in US or rail services in UK are not examples of market led activity. Jerven complains about lack of economic literacy in the African political class but one wonders about his own economic literacy if he believes that privatisation of customs and tax collection should have as a consequence a reduction in available data!

Jerven then completely muddles everything in his conclusion to Chapter 2. Here he writes: 'I have also discussed how some states were geared toward state-led development instead of market-led development and how that choice affected how economic activities were accounted for.' (p.49) Late capitalist countries all suffered from one crucial issue - the lack of large scale capital formation. The aggregation of capital through the market as in joint stock companies such as East India Company and the Royal African company which was largely made viable by grants of state monopoly was not available to France and Germany. The need for rapid industrialisation led France to use state power in a very dirigiste manner to manage the national economy, while in Germany the banks financed specific cartels. None of these countries followed a simple open market route to industrialisation. Newly independent African countries needed pooled capital to begin industrialisation as the scale of investment was beyond personal capital markets. This capital formation was often facilitated by surplus extraction by centralised produce buying organisations. To this extent capital formation by the state in the form of semi monopolistic para-statals was at the time the only feasible option. Any suggestion that this option was some kind of 'socialism' is an absurdity not worthy of repetition. By the time of the structural adjustment the idea of privatisation was not that the local capital market could now finance major infra structure and industrial investment. Rather it was that existing para statals could be bought up by foreign capital and high returns on either implicit or explicit monopoly production would act as the inducement. To suggest that the privatisation of state parastatals reflected a return to the market is appalling economic dishonesty. Foreign investment in Zambian power/cement would replace state monopoly with private monopoly or in Zambia's case foreign state investment. In neither situation was the largest part of the economy changed from being a free market. The untaxed economy (euphemistical called the 'informal' or 'subsistence' economy) remained by far the largest part of the economy and no African country has had any plans to 'socialise' it. To suggest that state formation of capital represents socialism would render capitalist France a long time socialist country. The privatisation of state parastatals seldom represented any direct move to free markets. Even in the most competitive of mobile phone markets the restriction of entry to those licensed by the government has been essential to market capitalisation of these so-called 'free market' companies. In principle putting the parastatals into private hands should have led to massively increased data as the government as regulator would be able to demand reporting

as a condition for the operation of the former parastatals. This conflation of 'privatisation' and 'free market' is a fundamental economic error of monumental proportions.

Jerven writes absurdly: 'Finally, since structural adjustment, no duties have been collected on imports or exports, so the Ugandan government has had little financial interest in documenting cross-border trade'. (p.51) This is complete nonsense. The Ugandan government has every financial interest in documenting cross border trade IF it wishes to tax it ..so the unasked question remains : why does the government not seek to tax cross-border trade? Is it because it simply cannot be done in a conflict zone?

By Chapter 3 Jerven seeks to present case studies. His intent here is to demonstrate the kinds of political and contextual issues that arise. He begins by selecting the Nigerian census but completely vitiates his analysis by implying that only the post independence political parties could have any interest in manipulating the outcomes and that the colonial power was totally objective even despite extensive reports that the British colonial regime sought to manipulate the political parties and the census figures.

"Thomson asks, "Could an allegation of British government involvement to rig an election or at the least to favour a particular party be substantiated?"

He interviewed Professor David Anderson, Director of the African Studies Centre at Oxford University. Asked if such manipulation of an election result could have happened Professor Anderson replied: "In almost every single colony the British attempted to manipulate the result to their advantage.... I would be surprised if they had not done so."

(<https://www.wsws.org/en/articles/2007/08/nige-a09.html> )

The point here is not whether these reports that the Colonial regime manipulated the census are true or false but that Jerven does not even consider the possibility. Further, not a word is mentioned of the oft repeated story of foreign visitors telling the local statistical officer what numbers they wanted to see 'tomorrow'. Since quite often they came from an organisation that was paying for the data and often contributing the officer salary, they inevitable received the 'corrected' data. This is rather important because it is known that within Western countries political attempts to manipulate statistics, such as unemployment numbers, are endemic and leaving out the comparative misleads.

Jerven's next case study is Nigerian crop production. He turns to data on crop production and again gets matters tail before head. He writes:

'According to one dataset on agricultural production that was based on field surveys and was approved by the FOS, there was negative growth in food production in Nigeria after structural adjustment programs.. Another dataset that was approved by the FAO and the Central Bank of Nigeria showed rapid growth in food production. ... The policy implications of these two different dataset were completely opposite. The first implied that structural adjustment policies did not work, while the second implied that they were indeed effective'.



Firstly, data set on past performance have no policy implications. The results are sunk costs. Whatever the results show are mere history, policy would best be determined by future data/expectations. If structural adjustment had a track record of producing growth countries would queue up for the medicine. Rather than having any policy implications the data set have political implications as to the credibility of IMF policies. Jevern makes no comment on whose interest could be served by which manipulation of the data.

It is surprising that Jevern never considers the standard response to different starkly conflicting data sets and that would be to find some small but definite area where IF there had been fast agricultural growth this factor would have significantly risen. This is standard audit technique. If agriculture is dependent on for example imported fertiliser fast growth should also indicate significant increases in imported fertiliser or some other co-factor of production. Such a test would not provide confirmation of rate of growth but would significantly distinguish between growth and contraction. No suggestion of such critical test is made which any competent statistician or accountant would have suggested.

These case studies reveal nothing but tend to create a negative atmosphere of despondency. Of more concern is that there is no comparative discussion of how and why data was obtained in Western countries or the role of military planning in the requirement of data. Nor is there any discussion of other low income countries in South America and Asia and how they dealt with their data requirements.

It is his last chapter that is most egregious. He opens with a flattering description of the opinions of the 'rational choice' theorists and then presents a negative counterfactual argument to endorse some of their most extreme views.

He begins with a startling and unsubstantiated judgement'; 'Most authoritative scholarly voices in development economics perceive most African governments as corrupt and incompetent and as part of the problem, not the solution'. (p.84)

What counts as 'authoritative' and who is 'scholarly'? Can we have some names please. He quotes rational choice theory as stating that 'the leaders, and therefore the states, are self serving rational actors. They are interested in their own political survival and power and are not technocratic agents pursuing development per se.' As a theory this must apply to ALL countries and all political classes as it claims to reveal 'rational' behaviour. To the extent that South East Asian countries have developed rapidly and even the US developed rapidly in late 19th century etc (its development phase) it did so despite having politicians whose primary goal was their own survival. To that extent rational choice cannot be an explanation of comparative performances as each country has rational actors. If however they are stating that African countries are in some way special then the theory ceases to be a theory about rationality but is simply a racist theory or insult, very thinly disguised. (Note 4)

Jevern then posits 'As a general rule, political priorities signal statistical priorities. Political priorities can be hard to observe empirically, but data availability is a good indicator of political commitment. A country that is serious about agricultural development is more likely to invest seriously in agricultural statistics.' (p.85) This is political nonsense. There is a world of difference between two different situations: where data is already in existence and the issue is to improve them and where the data is not presently in existence, and secondly when the policy is partisan or if it reflects national consensus. Prior to structural adjustment Jevern confirms that statistical capacity was being increased generally. However after structural adjustment statistical capacity had deteriorated. This is important because of the political life cycle. An investment in building statistical capacity is unlikely to bring any results before the next election.

Which brings us to some outrageous illogical arguments. Jevern argues:

'If employment in the informal sector was a real policy target, as political leaders in any countries indicate, it is reasonable to expect that a labor market survey would be implemented. But data on this sector are typically not available or are very outdated.' Any philosopher or logician would immediately point out that this is a worthless argument. It appears logical but is actually of no value and is merely rhetorical. It pretends to setup a counterfactual when there is no logical connection between premisses. ( Note 3)

Lets walk this through. A politician wishes to increase employment in rural areas. However to do so he needs an actual plan. If and when he comes into office he may or may not be able to get such a plan passed into legislation and funded. He may be presented with various options but given the exigencies of political life may not be able to get any of them into effect. Alternatively he finds a policy which is passed in year 1 and comes into effect in year 2. It takes 18 months before the policy has any significant effect but the statistical office works in arrears of one year so that the new improved figures are only available in year 5 just in time for his successor to claim the credit. The nonsense of Jevern's argument is to assume that having the wish is equivalent to having an effective policy, having it passed and the effects arising within the electoral cycle. If there is no way the positive statistic as will be available in time for the next election it would be quite reasonable to put statistic gathering in low priority.

Let us look closely at what Jevern has done; he stated 'If employment in the informal sector was a real policy target, as political leaders in many countries indicate, it is reasonable to expect that a labor market survey would be implemented.' He provided no conceivable connection between the first premise - a) employment in the informal sector was a real policy target and the conclusion b) it is reasonable to expect that a labor market survey would be implemented. One could equally say ' it is reasonable to expect life expectancy rates to increase and regular mortality surveys to be performed.'

We can look at this another way: a new Chief Executive is appointed to a company and announces that he intends to turn the company around and significantly increase its profits. As a key part of this he proposes to significantly increase the accounting department to improve the reporting of the improvements and they will be tasked with spending considerable time reviewing the past 20 years of company accounts. This would be seen as

clear nonsense. The improvements in profitability would be a real world event evidenced in better cash flow, reduced loans increased staff etc. Similarly an increase in employment in rural areas would be a real world effect of which voters would be only too aware. Jevern's implicit suggestion is that without government statistics voters would not be aware whether their economic circumstances were improving. But why should voters just believe government statistics if they have no reflection in their day to day experience?

This is not just economic illiteracy but theoretical incompetence of a high order.

#### BY WAY OF CONCLUSION

What can we say of all this? There is scale of misunderstanding and misinformation in the world of development economics that needs explanation. Either it is a field full of foolish ill educate people or something else is going on. If we recall Martin Sorrell's comments we can see a link a co-ordination. If African countries are expected to fall apart the world must be made ready for such an event and explanations must be readied. These explanations must have as a consequence the need to take whatever action the game plan required. In this case portraying African leaders as the problem would legitimise foreign intervention. Such co-ordination has been shown elsewhere in the activities of rational choice theorists by Nancy MacLean (note 4).

Our contention then is that as a discipline development economics has at best become entirely compromised in its relationship with multilateral agencies and the agendas of major Western governments and at worst has become a handmaiden to imperialist genocidal ambitions of certain sections of western world (Note 5). Development economics has consistently focussed African policy makers attention on the wrong data, in the wrong manner, on the wrong perspective and it is hard to see this as a mere coincidence. African countries fell into the pit following Western development economist's expert advice for import substitution. SE Asia developed strategies of export orientation. It is of course not possible to devise an export orientation development strategy by studying one's past performance. An export orientation would require getting to know other international markets and identifying where demand and supply opportunities might emerge in the future and planning for them. Past historical data could be quietly thrown into the wastepaper basket.

A core lesson is the need for the African academy to break away from the US/UK dominion and to re establish its independence. The core role of an academy in producing a 'consensus' will hinder if not destroy the capacity of African economists to critique western views and develop our own consensus of how to manage our economies whilst they work within the confines of Western Academy. The assumption and agendas of Western economies will of course have priority of place in the consensus making processes of the Western academy but these concern could easily conflict with the true interest of Africa. (Note 6) Without the establishment of an independent African academy we risk continuing marginalisation of not only our scholars but our concerns and our issues.



## Notes

Note 1: 'African Economic Outlook - 2007' . Her comments were quite clear at the presentation that the data came from the model but in the subsequent note it is 'modified' to the data being 'corrected' by the model.

Note 2: (<https://www.wsws.org/en/articles/2007/08/nige-a09.html> )

Note 3: A negative counterfactual has to involve strong logical connections. For example of a weak link: a person A says he wishes to get better , but he does not take his medicine. We are asked to conclude that he does not really want to get better. But this is faulty as there just is no logical connection between wanting to get better and taking this medicine. What if he did not believe the medicine he was given was having or would have any effect?

Note 4 . Cretan paradox where a Cretan says 'All Cretans are liars'. Similarly, rational choice must equally apply to the founders of rational choice theory explicitly identifying that their own theory is the product of their pursuit of their own private conservative political interest. Whilst this is a logical conundrum there is evidence that this may not be too far from actual truth given the close relationship between the theory founders and the Koch Brothers as detailed in 'Democracy in Chains' by Nancy MacLean , Scribe 2017.

Note 5. The expectation of African collapse was of a catastrophic nature and any evaluation of the likely outcome for Africa of the impact of the financial crash of 2008 without the intervention of Chinese resource purchases would confirm the nature and scale of that possible event. Nancy MacLean documents how the Koch Brothers and their associates planned for a world where large populations would be allowed 'to go the wall' - surplus to requirements.

Note 6. Some of the earlier discussions of economic activity in Africa e.g. Prest, can only be described as prejudiced and ridiculous attempts to 'otherise' Africa by comparing Africa not to any real western country but to an ideal type. (p.39)