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STATISTICAL ANALYSIS

Comparing data tells a story about the unusual birth surge in 2004

Greater access to antiretrovirals seen as the leading candidate to explain a phenomenon still being researched

17 July 2017 - 05:57 Martin Gustafsson

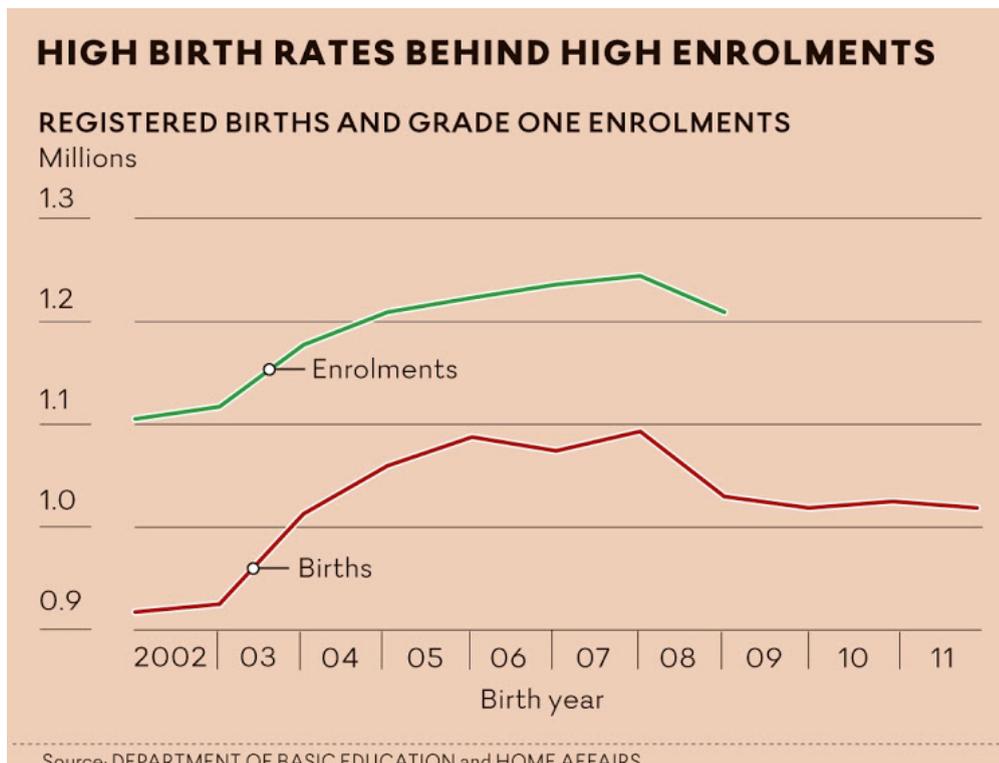


Picture: SUNDAY TIMES

It is clear that something remarkable happened to SA's births around 2004. What led to this discovery reveals important improvements in the ways social data have become available in the country. Starting in 2011, education analysts started noticing sharp increases in the number of children entering primary school after at least five years of steady decline.

From 2010 to 2013 Grade 1 enrolments rose 13%, or just more than 100,000 children. These figures refer to all schools, public or independent. The wave moved up the primary grades, reaching Grade 7, the last primary grade, in 2017. Class sizes increased, and resources became a little more stretched.

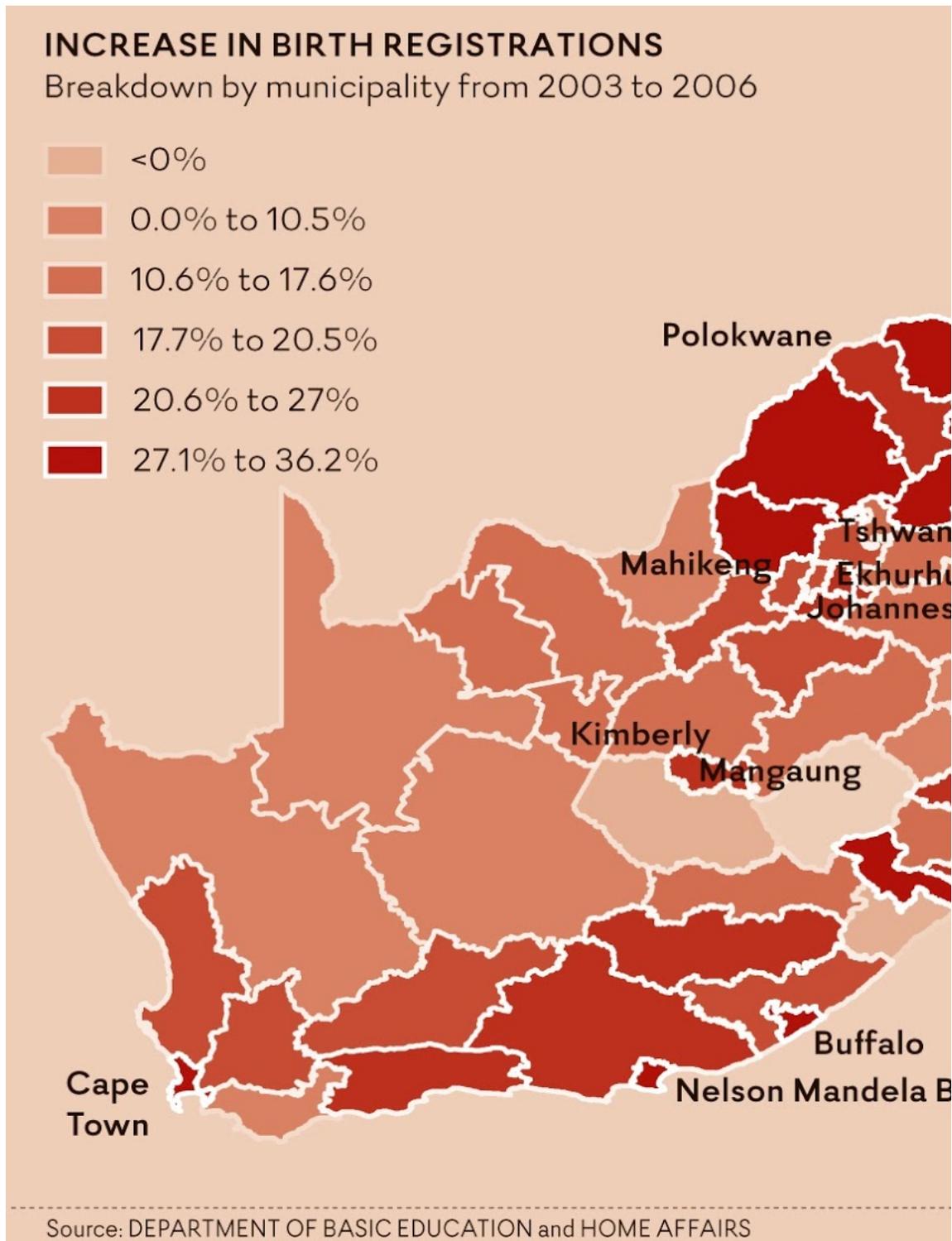
The increases confounded planners. Concern was raised about the possibility that schools and provinces were creating "ghost pupils" to attract more funding. But how could this happen across virtually the entire country at the same time?



Had there not been a second, completely separate, data source to confirm what was seen in the enrolment data, we may still have been debating whether the enrolment trends were real or not.

The second data source was the Department of Home Affairs's birth registrations, which had recently become available to researchers through the DataFirst web portal hosted by the University of Cape Town.

The home affairs data revealed a surge in births, starting in 2004, which corresponded very closely with the subsequent rise in school enrolments. This can be seen in the accompanying graph, which uses only publicly available data. These patterns are confirmed by the age-specific enrolment data of the Department of Basic Education that nonpublic data analysts in the department have been looking at. In the graph, Grade 1 enrolment in 2012 is assumed to represent births in 2005, and so on for the other birth cohorts.



Importantly, births declined in 2009, but did not return to their pre-2004 levels. The fact that the Grade 1 curve in the graph is on average 16% higher than the births curve is attributable to grade repetition, which means a proportion of children remain in Grade 1 for more than one year. This proportion has remained fairly stable in recent years. The important thing is that the two curves display the same shape.

The surge in births was remarkably widespread across the country. All provinces were affected to some extent, although most affected were Limpopo and Mpumalanga. The map provides details at the district municipality level (administrative units available in the home affairs data).

The 15% or so increase in births between 2003 and 2006 is remarkable by international standards. Only a couple of countries have experienced comparable increases. For instance, Ukraine did in the early 2000s following government efforts to boost an

exceptionally low birth rate.

It seems as if greater access to antiretroviral treatment and the associated reduction in the risk of mother-to-child transmission brought about a sharp increase in planned pregnancies

Are our increases in the number of children reflected in the official midyear population estimates of Statistics SA? Yes and no. Historical figures published with the mid-year estimates some years ago, for instance 2013, offered no hint that there had been a surge in births around 2004. However, the most recent Stats SA estimates do point to increases, but of only about half the size seen in the enrolments and birth registrations data.

Stats SA's 2016 estimates of past fertility rates reflect, for the first time, a rise and fall in births, with a peak in 2008 (as in the graph).

One could say there has been a lag of as much as a decade between a significant demographic phenomenon and its registration in the official population data, and even then, it seems only partially reflected. By developing country standards, this is not unusual.

This situation could be improved, in part if demographers and education planners compared notes more frequently. This kind of comparison seldom occurs, despite the fact that school systems tend to collect data on child populations with much greater frequency than national statistical agencies.

Part of the problem is that pressure to standardise population estimation methods across countries, in line with the prescripts of UN bodies, can detract from the monitoring of local peculiarities and shocks.

The reasons behind the increase in births is being investigated. The patterns suggest the child support grant was not a major contributing factor. Nor does immigration into the country explain the phenomenon. Instead, it seems as if greater access to antiretroviral treatment and the associated reduction in the risk of mother-to-child transmission brought about a sharp increase in planned pregnancies. However, conclusive evidence on causes is still to come.

Analysis of the kind just described has become increasingly possible, in part thanks to the greater accessibility of data. In particular, the availability of multiple sources allows for important comparisons and verifications. The UN Data Revolution Group refers to data as "the lifeblood of decision-making and the raw material for accountability".

While data on its own cannot resolve the range of policy conundrums we face in SA, it can be hugely beneficial in bringing about a more informed debate.

However, capacity to use data, in particular microdata (or "raw data") in the government, our think-tanks and university departments, is weaker than it should be given the complexity of the policy challenges the country faces and the data that are available and will increasingly become available.

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