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Thoughts from a Renaissance man How many babies are too many?

How can you invest and grow like China if you don't save like China?

The banking sector booms when the fertility rate falls below 3, which is encouraging for Egypt, Ghana, Kenya and Pakistan over the next decade.

How can countries invest like China? Specifically, how can they get interest rates down to Chinese levels so that investment is cheap? We looked into this because we worry that high domestic borrowing costs either make infrastructure too costly to build – condemning countries to lasting poverty – or they push countries to borrow cheaper external debt (often from China) that might lead to a new frontier debt crisis in the 2020s.

Surprisingly, one important answer is to have fewer babies. Over half the increase in Chinese household savings since the 1970s can be attributed to the one-child policy. Those savings have contributed to a large rise in bank deposits. Countries where bank deposits are over 80% of GDP have seen real interest rates below 2% of GDP for the past five years. By contrast, all countries with high real interest rates above 4% over 2014-2018 have low bank deposits below 40% of GDP, and they are characterised by a high fertility rate. In lower income emerging (EM) or frontier markets (FM), you don't just sleep better when you have fewer children than your grandparents did, you help your country grow richer too.

Our work has some positive implications for the real interest rate outlook in countries as diverse as India, Brazil, Bangladesh, Morocco and Vietnam. In general, countries with fertility rates below 3 (babies per female) and high bank deposits should expect real interest rates to be sustainably below 2% over the medium-to-long term. It is another reason to be bullish Brazilian real or (see below) Egyptian pound bonds.

There is also a positive angle for countries where the fertility rate of 3-4 will fall to 2-3 in roughly 10 years' time, including Egypt, Ghana, Kenya and Pakistan. During this process they should see bank deposits treble in size from 20-30% of GDP (on average) and real interest rates fall. As a result their dependence on external borrowing to fuel investment and growth should decrease. This means they have a decent chance of escaping a future debt crisis.

It is harder to be optimistic about countries with a fertility rate of 4-5 such as Ethiopia, Ivory Coast, Rwanda, Senegal and Tanzania. The outlook is more concerning still for Nigeria or Angola, where the fertility rate is 5-6 and is worst of all for Niger (6+). How can they afford high investment? A currency peg guaranteed by France helps Senegal and Ivory Coast keep interest rates low. Foreign direct investment (FDI) is another potential source but often not for infrastructure given contractual risks over a long period.

One solution for countries that want to invest more, but which have high fertility and few domestic banking resources, is to run a current account (C/A) surplus. Nearly all countries with a surplus – even if they have low bank deposits – have low real interest rates. That surplus helps pay for investment which fuels growth. This was of course part of the Asian economic model that lifted China. It also greatly benefited Nigeria and Angola when booming oil prices were high enough to give them surpluses.

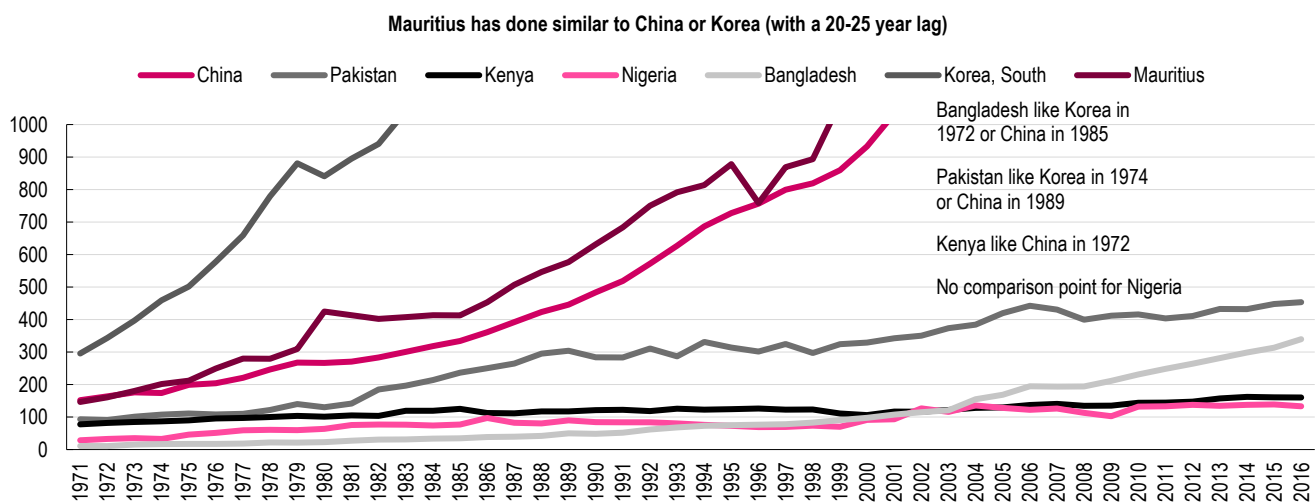
The risk of debt default is likely to be highest in countries with a fertility rate above 4, where external debt is increasing to fund investment, and where we have a C/A deficit and overvalued currencies. Ethiopia and Zambia would be riskier than Rwanda or Tanzania on this list due to currency valuation. Risk for all them could be reduced via devaluation. For Nigeria or Angola, either higher oil prices or currency devaluation are the two obvious solutions to deliver higher investment-led growth. The last alternative is that these countries don't borrow to invest, and simply don't deliver per capita GDP growth.



This report was conceived because of criticism from Nairobi about our *Electric power to the people* report in 2018. We argued that Kenya (indeed, nearly all of Sub-Saharan Africa – SSA) needs to double electricity output if it wants to industrialise and grow at 7-9% for two decades. But it was pointed out to us that Kenya has surplus electricity at present and it is very expensive to add more.

Well, we said, that’s just a cost that Kenya has to bear, because until there is enough electricity to guarantee a reliable supply (300 kWh per capita) sufficient for industrial demand, manufacturing won’t come to Kenya¹. Korea only stopped running big C/A deficits in the 1970s when electricity consumption reached 300-500 kWh per capita. China also invested massively in electricity and infrastructure and became an industrial powerhouse only after electricity consumption reached similar levels after 1985. Without industry, we believe Kenya will struggle to build enough export capacity to fund its C/A deficits and reverse the rise in external debt.

Figure 1: Electricity is an essential ingredient for industrialisation – consumption kWh per capita



Source: EIA, IEA, IMF, Renaissance Capital

“Yeah but” (came the reply) China’s one-year borrowing costs are 2.6% while Kenya’s are 8.8% and Nigeria’s are 11.3%. The risk for Kenya or Nigeria from investing in too much infrastructure in the short term, in the hope that it attracts FDI into manufacturing in the medium term, and this pays off the debt in the long term, is that with such high interest rates, they could be bankrupt before the long term arrives.

By contrast, borrowing costs are so low in China that: 1) investment is cheap to finance so 2) the burden of paying for that investment is manageable for the government; and 3) the costs of using that investment are low (ie manufacturing companies will pay little for electricity); therefore 4) an investment-led growth model works. Indeed, Chinese savings are so high that they have surplus savings to export around the world, from Sri Lanka to the Republic of Congo. None of this is true in Kenya and Nigeria, or indeed in Pakistan and Egypt. How can FM and low-income EM deliver cheap electricity and investment-led growth when domestic interest rates are high?

One ‘solution’ is to borrow cheaply from abroad, as we have seen via eurobonds or cheaper Chinese or Gulf financing in recent years. But this pushes up external debt and

¹ Manufacturing in Kenya has actually shrunk as a percentage of GDP in recent years – see *Thoughts from a Renaissance Man: Kenya, Avoiding Argentina, emulating Mauritius*, 28 September 2018.



risks an FM debt crisis in the 2020s to echo the EM debt crisis of the 1980s when the fertility rate in Brazil and Mexico was around 4 to 5.

So we are left with a series of questions to answer:

- Why are interest rates generally so high in Africa and South Asia?
- Within Africa why are savings low in some (Nigeria) and high in others (Morocco)?
- What can reduce them?
- Who is likely to see lower domestic interest rates first?
- What currency policy is best, in order to encourage higher investment?
- Which countries, if current trends continue, are most at risk of a debt crisis in the 2020s?

The answers are a big deal for portfolio and direct investors. Call us radical, but we think investors will prefer countries where interest rates can come down and investment-led growth can take off, over those that are destined to have high interest rates and a potential debt crisis within 10 years.

Let's start with bank deposits and babies

A good starting point is bank deposits², as historically it has been banks that have financed domestically financed investment (along with retained corporate profits). China's bank deposits in 2017 were over 210% of GDP compared with 33% in Kenya³, so the supply of money is very high. As a result, the cost of borrowing those Chinese savings *can* be much lower than in Kenya where there is a much more limited supply of savings⁴. Importantly, if your target is to achieve an investment rate of 25% of GDP or more (ideally 30-40% of GDP), it will be harder to achieve if your entire banking system is smaller than this⁵.

One curious point that emerged in our reading is the link between household saving and fertility. While a large share of bank deposits will be corporate, and bank deposits are only a part of household savings, we still found the link to be very interesting. Half of the boom in China's household savings since the 1970s has been attributed to demographics, as show in a sample from [an IMF report](#):

² Throughout this piece, we use IMF banking data except for China, Vietnam and Ethiopia. These do differ from other estimates you will have seen but we use them to remain consistent across countries.

³ We will use Kenya a lot as a reference point, but you can replace it with any FEM country you like – the data will be similar enough for most.

⁴ Yes, demand for loans is another side of the story – which is why say “can” and not “will”.

⁵ There is a flow (investment as a percentage of GDP) vs stock (of deposits) issue – and investment can come from other sources (in low-income countries, it is often FDI) – so investment can be larger than the stock of loans. We just argue it is hard to sustain this.

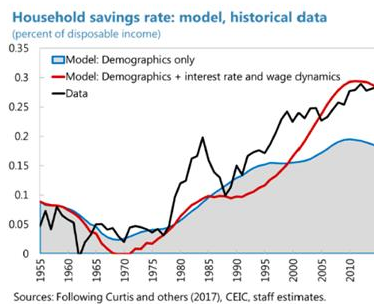


Figure 2: IMF Working Paper, China's High Savings: Drivers, Prospects and Policies

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Quantitatively, demographic shifts alone account for half of the rise in household savings, suggesting that it has been the most important driver.

We analyze the impact of demographics based on the overlapping generations model developed by Curtis et al. (2015), which captures both the expenditure and the transfer channel by including children's consumption in parents' utility function, and old-age support as a constant share of children's wages.⁷ Model simulations show that demographics alone can explain about half of the increase in the household savings rate, holding income growth and interest rates constant. By adding income and interest rates, the full model can explain the broad savings trend.⁸ However, it cannot account for the savings trends in the 1980s and 1990s, likely reflecting the large role of precautionary savings, which resulted from the gradual dismantling of the social safety net during these decades.⁹



Source: IMF

When families have fewer children they tend to save more because they can no longer rely on children to be their pension provision. They also spend less on children when they have two instead of five or six, although (we think) they spend much more per child, particularly on education⁶. We think this explains the surprisingly high correlation between fertility rates and bank deposits to GDP – a correlation which holds in the 1990s as well as today – and across a great many countries.

⁶ These benefits were not just understood by China. Government-sponsored efforts in Bangladesh and India also aimed to reduce the fertility rate.



Figure 3: Fertility rates and bank deposits – banking systems can expand significantly when the fertility rate drops below 3

Deposits to GDP vs total fertility rate

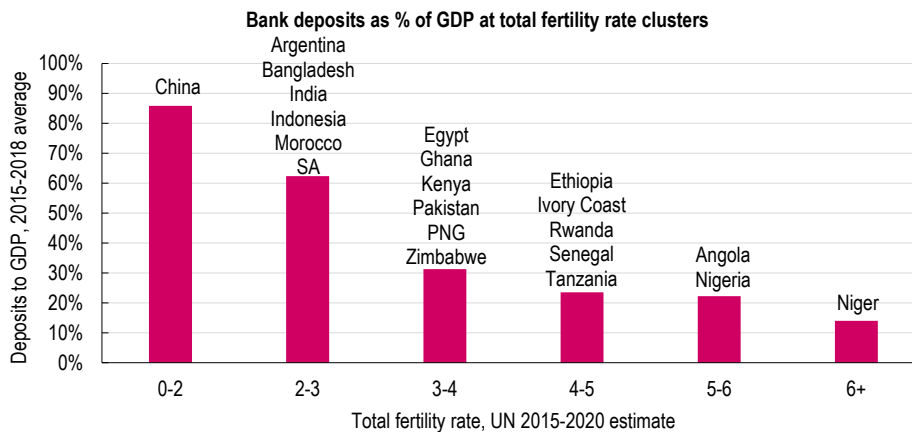


Source: IMF, UN



The big jump in deposits is apparent when the total fertility rate is 2-3. So there is scope for countries with low fertility but low deposits to now see a big rise in bank deposits – including Argentina⁷, Mexico, Romania and Ukraine⁸. We should expect to see low interest rates and high lending/GDP ratios in Morocco, Jordan and Vietnam and scope for a big shift towards high lending to the private sector in Egypt, for example.

Figure 4: Which countries might expect a jump in bank deposits as the fertility rate falls?



Source: IMF, UN

Egypt, Ghana, Kenya and Pakistan are among those that could see a big rise in bank deposits – from an average 30% of GDP to over 60% of GDP as fertility rates fall⁹. Egypt already looks very placed to fund its own investment (when lower government borrowing stops crowding out the private sector). As a result, these countries in the next decade or two might become less reliant on external financing, or be able to sustain very high growth as domestically-fuelled lending is added to external financing.

For Ethiopia, Ivory Coast, Rwanda, Senegal and Tanzania, sharp growth in bank deposits as a share of GDP is unlikely as they enter the 3-4 fertility range – but a roughly 50% rise (from an average 20% of GDP to 30% of GDP) is plausible. This is helpful but not a game changer. We should be more wary of these countries increasing their external debt as it will take well over a decade before they can rely more on domestically-financed lending.

However, for Angola and Nigeria, it will take 20 years before their fertility rates decline to 4, so until then we should not expect a big increase in the share of bank deposits. The implication is that bank deposits will NOT become the source of higher investment these economies need. We should be most worried by high borrowing by these countries.

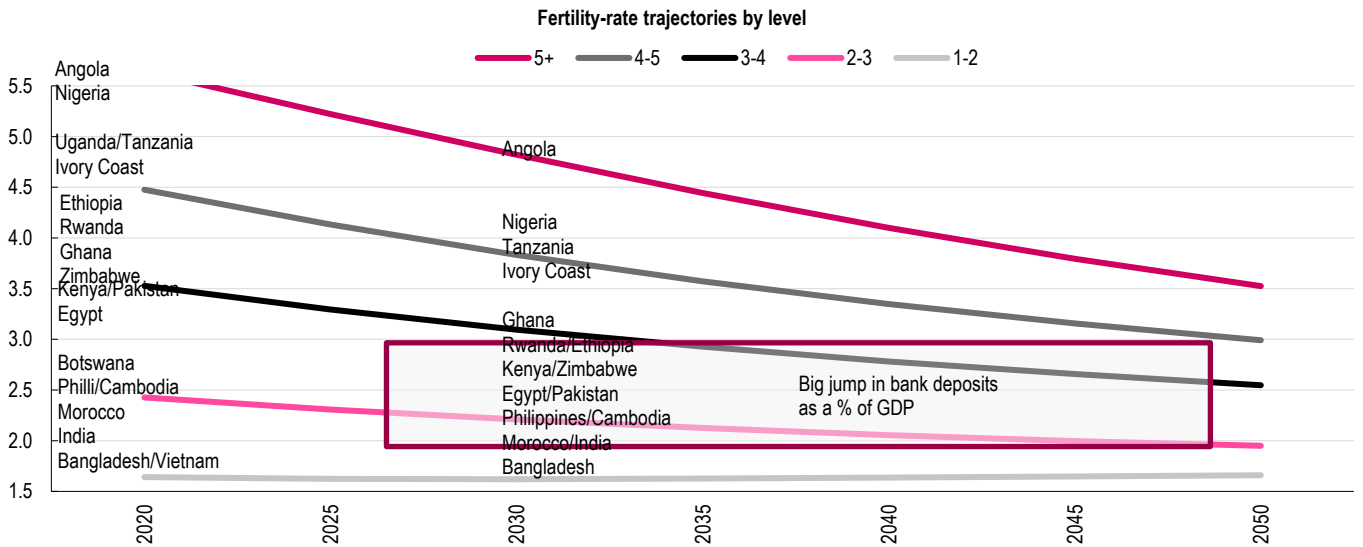
⁷ A point well understood by FEM investors in Argentina's banks.

⁸ We suspect that high inflation in 1980s or 1990s might explain low deposits in many of these countries.

⁹ Note the fertility rate at 3-4 used to decline by 0.8 a decade in the 1990s but in the last 10 years this has fallen to 0.4 a decade, so Kenya could reach 2-3 by 2030-2035 and Ghana by around 2040.



Figure 5: Average fertility rate trajectory – with some countries added individually



Source: UN

Lastly we note Niger, because it also crops up as a country that is seemingly going nowhere due to a lack of education and electricity. The total fertility rate (TFR) and bank deposit data reinforce this. The discrepancy between Niger and Cape Verde for example, is another reason why we do not think these countries make an ideal currency union area (ECOWAS disagrees¹⁰).

We cannot be too deterministic here. Individual countries do have very different bank deposit ratios even with the same fertility rate. Mozambique, probably helped by substantial investments into its natural resources, and with a relatively low population, looks better placed to fund investment than Central Africa Republic (CAR), but the fertility link is meaningful on average.

¹⁰ See *Thoughts from a Renaissance Man: ECOWAS single currency in 2020? Not credible*, published on 22 March 2018.



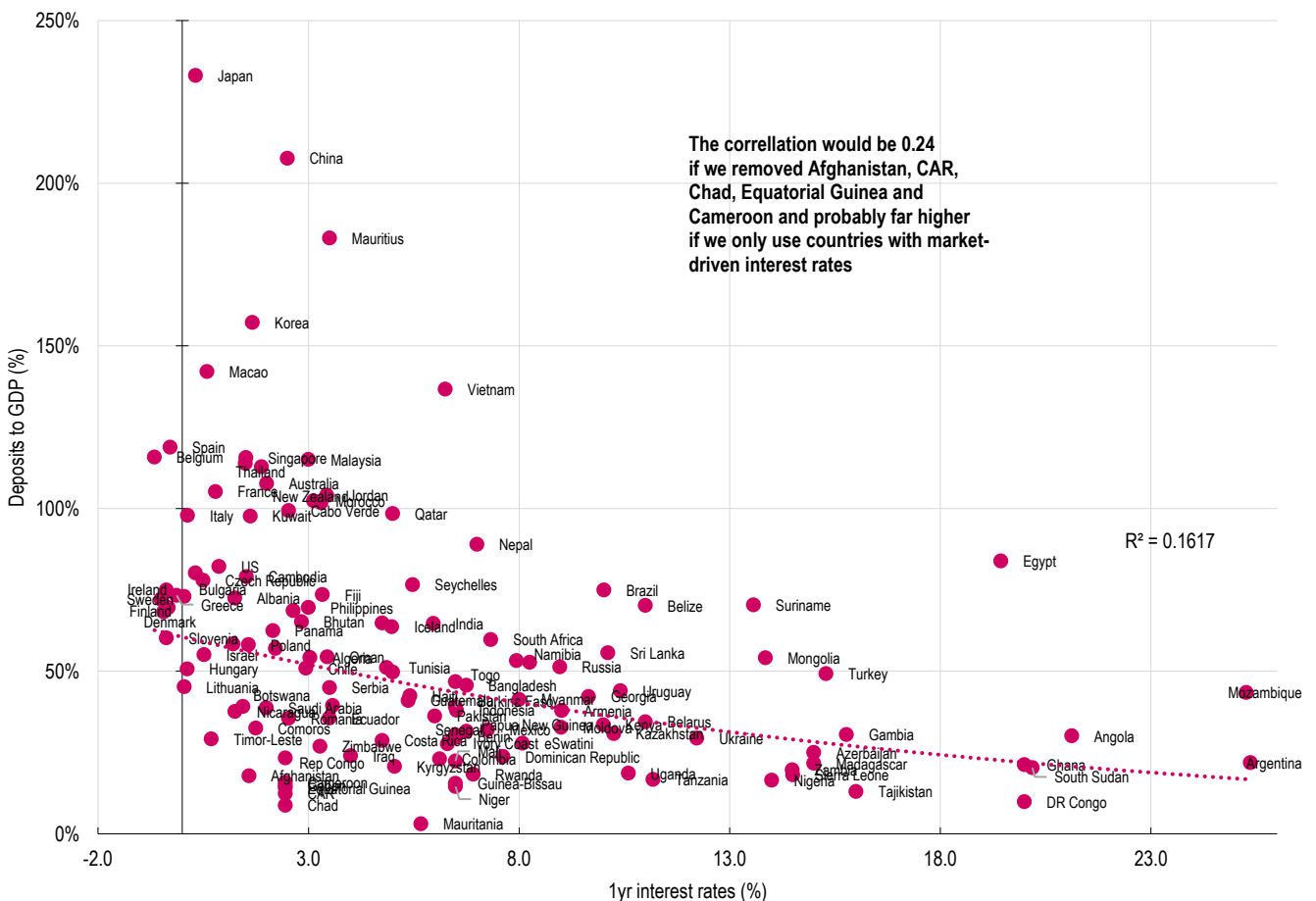
Bank deposits and interest rates

Even weaker is the correlation between nominal one-year interest rates in 2017 and bank deposits as a percentage of GDP, despite our belief that there should be a link. Low-income countries in the West African Monetary Union (WAEMU) with relatively few bank deposits can have low interest rates due to the CFA peg – and if we remove some of them (and Afghanistan) our correlation rises from 0.16 to 0.24. Meanwhile Egypt can have high inflation alongside large bank deposits, and middle-income Argentina can have high inflation with low bank deposits¹¹. Vietnam and Rwanda have similar interest rates despite vastly different bank account deposit data.

However, all countries (except Vietnam) with bank deposits above 90% of GDP have low single-digit interest rates and all countries with one-year interest rates above 5% in 2017 have bank deposits below 90% of GDP. So high nominal interest rates that deter investment only occur in countries with a low level of bank deposits.

The correlation is weak because countries with low deposits can have high or low inflation, and countries with low inflation can have high or low deposits.

Figure 7: The link appears to be weak between bank deposits and nominal interest rates



Source: IMF, Bloomberg

¹¹ Both have explanations of course – from Egypt’s devaluation and subsidy removal scheme keeping inflation high, while Argentina’s low deposits are the lagged effect of poor policy over the past decade or more.

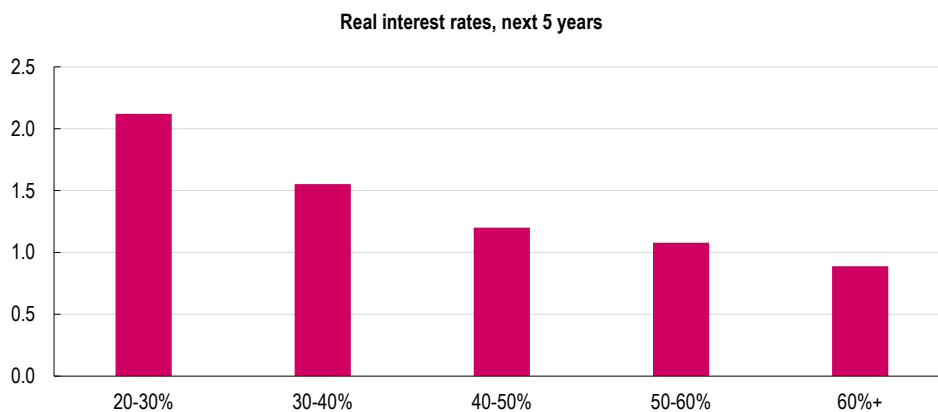


Real interest rates and bank deposits

More important in any case, we think, are real interest rates, and our work on this shows these tend to be higher in countries with low bank account penetration.

Aside from some odd data for countries with very low bank deposits (Chad, CAR, DR Congo), real interest rates at 0.9% over 2014-2018 have been lowest in countries that had the highest level of bank deposits in 2013. This is less than half the 2.1% level of real interest rates in countries where bank deposits represent just 20-30% of GDP.

Figure 8: Real interest rates are lower in countries with larger financial sectors – 2013 bank deposit data compared to real one-year interest rates over 2014-2018



Source: IMF, World Bank, Renaissance Capital

Based on our fertility analysis, this tells us that from Kenya to Pakistan to Ghana, one-year real interest rates at over 2% today should be higher than in China, for example. But as the fertility rate declines below 3 by 2030-35, bank deposits are likely to rise to an average 60-70% of GDP and the level of real interest rates will more than halve. We doubt this will happen overnight but expect it will be a gradual trend over the coming decade.

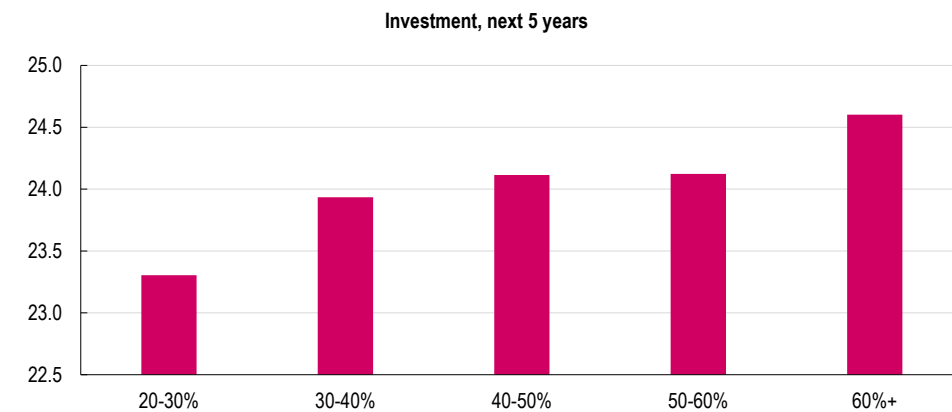
By contrast fertility forecasts suggest that Nigeria, Tanzania, Angola and Ivory Coast will continue to have the world's highest real interest rates until 2050 because bank deposits are unlikely to jump. This will affect investment and long-term growth¹².

When bank account deposits are low (at 20-30% of GDP), the investment rate in the next five years is also the lowest and this rises as bank deposits rise. Admittedly, the effect is not that big. Our work on middle-income traps shows that investment at 25% of GDP is the key level for countries to converge towards developed market GDP, and clearly some countries are achieving this even when bank deposits are low, thanks to FDI or foreign or government borrowing

¹² We will bring the C/A into this equation below.



Figure 9: Investment as % of GDP tends to rise as bank deposits rise (and real interest rates fall)



Note: Based on 86 countries

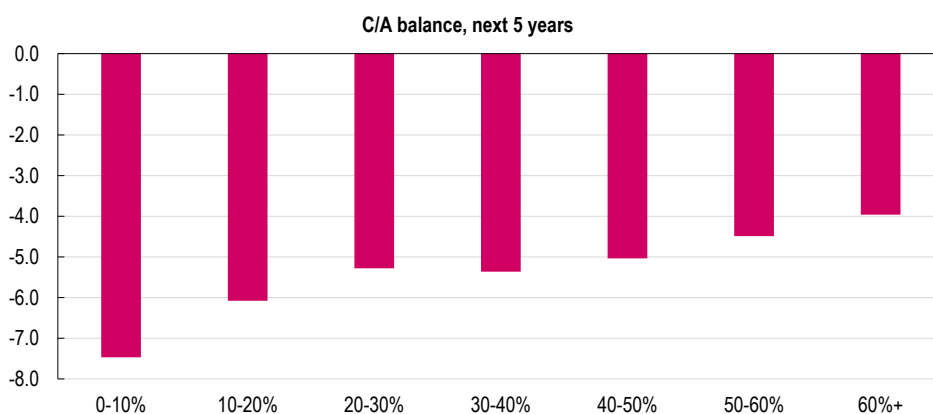
Source: IMF, World Bank, Renaissance Capital

The unfortunate reality is that countries with high fertility rates have the lowest share of bank accounts, the highest real interest rates and the lowest investment rates, so it is particularly hard for them to begin the development process¹³.

With limited scope for domestic private sector borrowing to support investment, countries have four other ways they might boost investment:

- Via high domestic profits.
- Via the government. But high fertility countries rarely have high tax revenues to fund this, and borrowing is expensive for the government too.
- By borrowing from abroad. It is no coincidence that countries with the least amount of domestic bank deposits end up running the largest C/A deficits.

Figure 10: Based on 2013 bank deposit ratios to GDP, we show the C/A balances in the subsequent five years



Source: UN, IMF, Renaissance Capital

- Via exports. But exports have to be high per capita.

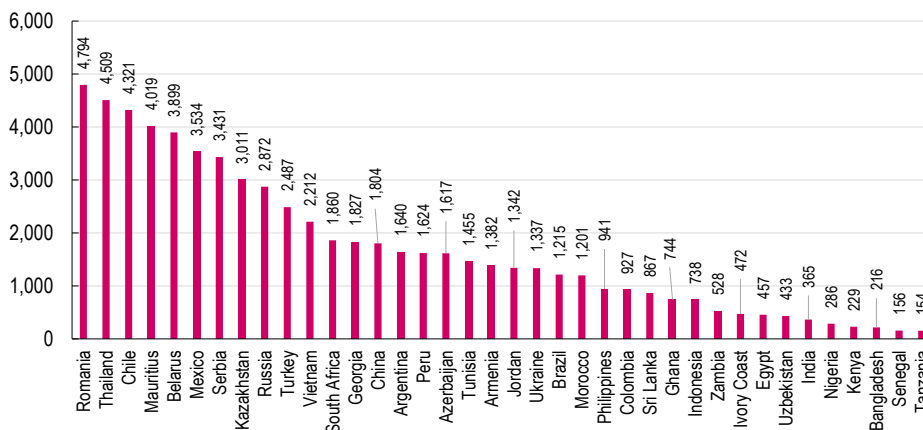
¹³ An example of a country that is trying to get around this problem is Ethiopia, which is why we visited and wrote up *Thoughts from a Renaissance Man: Ethiopia, Eggs, omelettes and IPOs* on 12 April 2016.



High export revenues per capita can provide cheap dollar funding for investment, which we think should reduce real interest rates domestically. These exports can come from two sources. One is via industrialisation (e.g. Romania, Mauritius) and that egg clearly requires the chicken of education, electricity and infrastructure first. This whole piece is about countries pre-industrialisation, so we won't say more about those that have done it already.

The second way it can happen is if a country has high natural resources per capita. This can be great beaches which attract high tourist revenues, or plenty of oil (the Gulf countries) or diamonds (Botswana). Major FMs such as Nigeria and Kenya have few natural resources per capita.

Figure 11: Exports of goods and services per capita (2017) among DM, EM, FM and BF countries – capped at \$5k



Source: IMF, Renaissance Capital

So below, we looked at average real interest rates over five years and colour coded the countries by whether they ran a C/A surplus or a C/A deficit, with a third colour for countries with weirdly negative real interest rates.

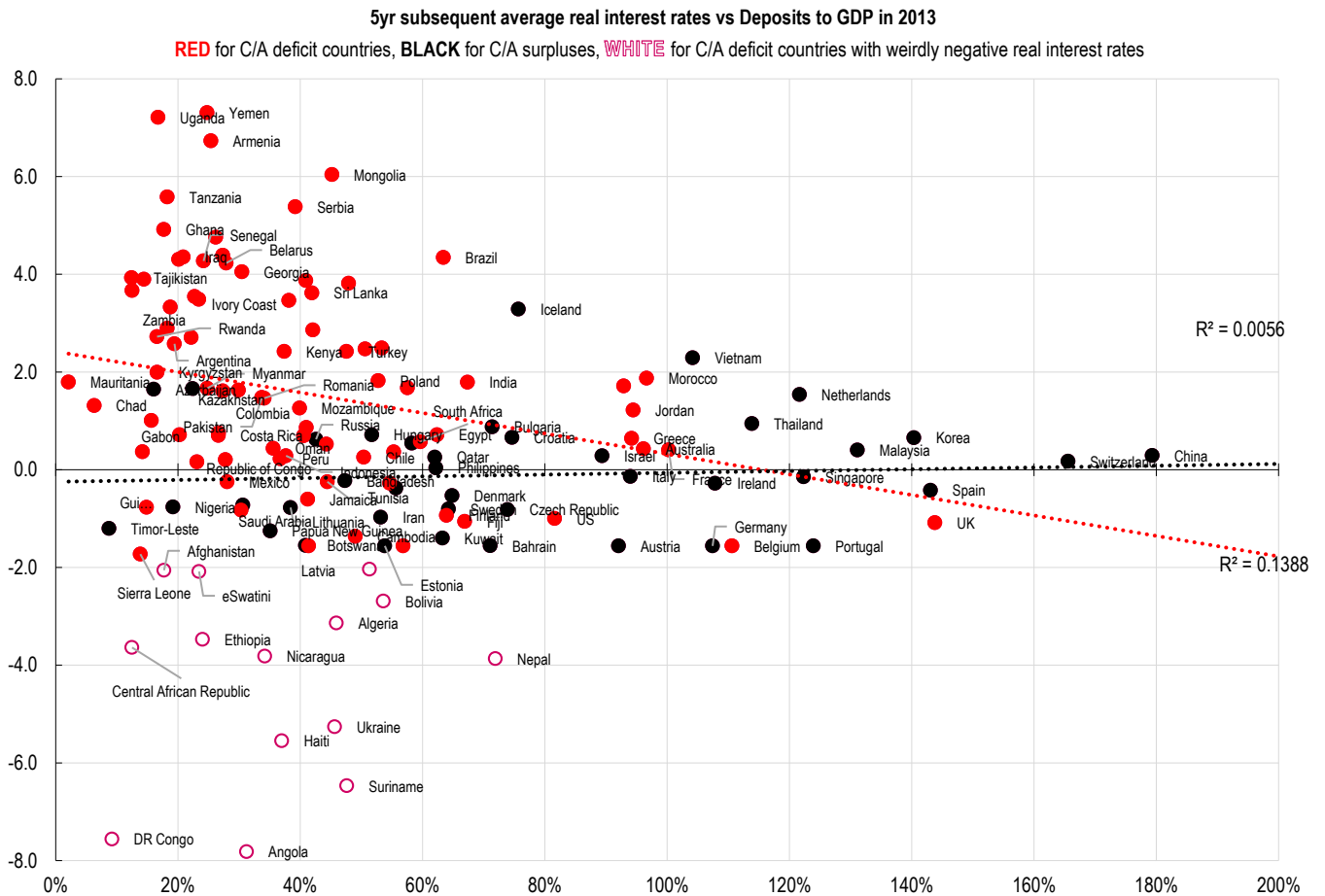
The key points to draw out from this graph:

- 1) C/A surplus countries have real interest rates in a tight -2% to +2% range (only Vietnam marginally, and Iceland by quite a lot, exceed this). This overrides the importance of bank deposits. If a country runs a C/A surplus, it can have low or even negative real interest rates, even when bank deposits are less than 40% of GDP.
- 2) The spread of real interest rates in all countries narrows as the bank deposits rise. When bank deposits reach 60-80% of GDP, a dramatic tightening of the potential real interest rate range begins. This is encouraging for outliers such as Brazil and Iceland. By the time bank deposits are 80-100% of GDP, the range of real interest rates is within the same +2% to -2% range that applies to all current account surplus countries. When bank deposits are above 140% of GDP, the real interest rate range tightens even more to about -1% to +1%. A high share of bank deposits reduces real interest rate volatility.
- 3) There is a correlation between real interest rates and banking deposits of 0.14, which is low mainly because of the huge dispersion of real interest rates in countries where banking sectors are small.



- 4) In general, C/A deficit countries have positive real interest rates. All countries that have experienced >4% real rates for five years have bank deposits below about 65% of GDP.

Figure 12: C/A surpluses deliver low real interest rates, even if bank deposits to GDP are small (under 60%)



Source: UN, IMF, Renaissance Capital

The implications of this are as follows:

Countries where bank deposits are high as a percentage of GDP (above 60%) are likely to have low real interest rates. Therefore, EM investors in Thailand, Malaysia, Jordan, Vietnam and Morocco should be fairly relaxed about inflation risks to any local currency bond holdings they have in the country. The implication is that Brazil's real interest rates should decline significantly compared to their level over 2014-2018.

Countries with a high fertility rate will have low bank deposits and high real interest rates. Their investment rate will be low and their ability to escape poverty will be reduced.

However, if these same countries with a small banking sector can deliver a C/A surplus, then this should provide cheap financing that allows interest rates to be low, and this overcomes the previous point. Indonesia, Hungary and Bangladesh come out well in this regard.



Figure 13: Real interest rates over 2014-2018, bank deposits as % of GDP in 2014 and the C/A as % of GDP in 2014-2018

	All countries	Under 40% GDP of bank deposits	Over 40% of GDP of bank deposits
Current account surplus	-0.1	-0.2	-0.1
Current account deficit	2.0	2.7	1.0

Source: IMF, Renaissance Capital

Some countries with high exports per capita, because of high natural resources and a small population, will be able to easily achieve a C/A surplus.

For those with neither a large share of bank deposits, nor a high level of exports per capita, then the implication is countries might do well to copy the example of China in the 20th century, which used a cheap currency to deliver a C/A surplus.

The Korean example suggests rapid development over 15 years can be achieved, while risking a C/A deficit, if there is a concerted strategy which aims to develop an export base that can pay off the resultant external debt. Cheap currencies would therefore help Serbia and Belarus, Tanzania, Uganda and Zambia, as well as mainstream EMs such as Turkey, if they could produce a C/A surplus which might allow real interest rates to fall.



CAUTIOUS – Nigeria and Angola

As Nigeria and Angola have low exports per capita, a high fertility rate and low bank deposits to GDP, real interest rates should be above 2% in the long term unless these countries run a C/A surplus. In 1Q19, Nigeria is running a C/A deficit and real interest rates are today over 2%. The implication of this piece is that the currency needs to be devalued to return the C/A to surplus and reduce interest rates. The other alternative is that oil prices rise significantly, which would also push down real interest rates and encourage higher growth. Without either of these, we believe higher investment to push up growth would increase external debt and risk long-term debt repayment difficulties.

IMPROVING PROSPECTS – Egypt, Ghana, Kenya, Pakistan and Zimbabwe

Such countries are likely to see domestic real interest rates halve over the coming decade, which will support their efforts to increase investment. We think investors should be more bullish on these countries, thanks in part to the declining fertility rate which should enter the 2-3 range in roughly a decade. Of course poor policy can undermine this so we cannot be as optimistic about Zimbabwe as the others.

GOOD PROSPECTS –Bangladesh, Cambodia, India, Indonesia, Morocco, the Philippines and Vietnam. Perhaps Brazil.

The data are most encouraging for these countries because fertility rates are good (ie, less than 3), the share of bank deposits and investment should be high or rising, while real interest rates should be low or falling. As these countries get their share of bank deposits above 80% of GDP, they can afford to run a C/A deficit and still keep real interest rates within a -2% to +2% range. We should be least worried by external debt ratios in these countries.

Overall, in low-fertility countries you either have 1) countries that look great (Morocco, Vietnam) with high investment and decent growth, or 2) you have countries that look worse on deposits but borrow to grow fast and run C/A deficits (Georgia, Indonesia) or 3) you have countries with low deposits, which don't borrow from abroad and grow relatively slowly such as Mexico, Russia and Argentina. Egypt looks good and much better than Zimbabwe as it has a high deposit/GDP base not wiped out by inflation, while Pakistan is on the line, not as good as Egypt but better than Zimbabwe.

Appendix items

Researching a piece like this throws up some interesting issues that are a distraction from the core message. We note them below. One specific point was that high interest rates don't encourage savings in the short term, but this may well be because rates might spike higher due to a crisis that discourages savings or cause job losses that weaken savings.

Anti-globalisation and the benefits of income inequality

The possible advantage of capital controls and financial repression kept cropping up in the work we read. While it is controversial to write this, research suggests capital controls might help trap capital in a country and contribute to lower interest rates. We have seen this in Vietnam, Morocco, apartheid South Africa and others. But research on China



suggests financial repression (forcing interest rates lower so you have to save more to be able to get the same income from those savings) does not encourage more savings¹⁴. Financial repression in Ethiopia may not be helping deposits rise, but perhaps capital controls do.

Moving from the controversial to heresy, research also suggests financial liberalisation may weaken savings in the short term¹⁵. As credit becomes more available, precautionary savings become less necessary. In the long run, a liberalised financial sector may help accelerate growth, increase incomes and therefore saving, but in the short term, it hurts. Ethiopia may be right to keep the foreigners out of its banking system.

Before I get thrown out of my job, to join the anti-globalising, anti-capitalists delighted by the above paragraphs, we should add one last point that greater income inequality is good for savings. Rich people do save much more (perhaps 50%) of their income, so as societies grow more unequal, savings increase. In China, over 1978 to 2015, this “contributed about 3 percentage points to the increase in the aggregate savings rate.”¹⁶

Savings and culture

There are cultural differences when it comes to savings. An ECB paper¹⁷ examined the saving behaviour of low- and middle-income households in Switzerland, and discovered that (surprise, surprise) Germans save more than the French. As shown above this cultural difference is greatly outweighed by other factors such as fertility rates and it is easy to confuse the two. As fertility rates change so slowly, it is easy to assume that Japan and the West are culturally different from the rest of the world, when in fact they are just farther advanced on the declining fertility curve.

Mobile money

The difficulty we have including Safaricom and mobile money in general into this report is that, by definition, mobile money is not banking sector money.

However, since Safaricom entered into a cooperation agreement with CBA Bank, it seems that the float of mobile money deposits does end up sitting on a zero interest rate account at CBA, and loans done via mobile money come from CBA.

Will mobile money increase deposits? Mobile money has brought basic banking-type services to largely unbanked FM economies. But we doubt this will do much to add to total deposits. A **World Bank 2017 report** states that 62% of the unbanked have a primary education or less (92% in Ethiopia, 86% in Tanzania and 75% in Pakistan), and their earnings are likely to be so low that they will have limited capacity to save. Nearly two-thirds of unbanked adults say they do not have enough money to use a bank account. The World Bank found that 3% of adults used digital accounts for saving (15% in Ethiopia, 7% in India). Meanwhile, lending via mobile money accounts tends to be more expensive than from a bank, and unlikely to support corporate or infrastructure investment. We think that mobile money can add a little to bank account deposits, but if we look at Kenyan banking deposit data, the total has actually fallen as a percentage of GDP in recent years,

¹⁴ <https://www.imf.org/~media/Files/Publications/WP/2018/wp18277.ashx>

¹⁵ <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.771&rep=rep1&type=pdf>

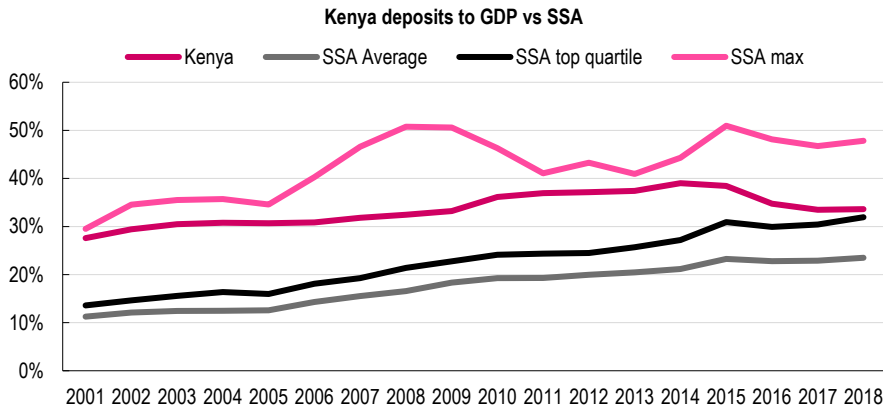
¹⁶ <https://www.imf.org/~media/Files/Publications/WP/2018/wp18277.ashx>

¹⁷ <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2069.en.pdf?a489f1abe4951dd2dbcb48562bc39b8c>



back to levels seen a decade ago. We suspect the recent fall is connected to the interest rate cap in Kenya.

Figure 14: Kenya's bank deposits in 2018 are back to the same share they were in 2008



Source: IMF



Figure 15: Key indicators

	GDP per capita (\$), 2018	Deposits to GDP, 2018 (MRV)	Total fertility rate (2015-2020 est)	Exports of goods and services per capita (2017), \$	Investment to GDP, 2019E	Current account balance (% GDP), 2019E	Real interest rates	Currency valuation	
China	9,608	206%	1.7	1,804	44.2	0.4	0.3	122%*	
Korea	31,346	165%	1.1	12,623	30.2	4.7	0.7	102%	
India	2,036	63%	2.2	365	31.6	-2.5	1.8	122%	
South Africa	6,377	60%	2.4	1,860	17.9	-3.4	0.6	92%	
Brazil	8,968	79%	1.7	1,215	15.4	-0.8	4.3	97%	
Mexico	9,807	31%	2.1	3,534	23.0	-1.8	-0.2	88%	
Russia	11,327	52%	1.8	2,872	23.0	7.0	0.6	108%	
Malaysia	10,942	115%	2.0	7,950	23.6	2.3	0.4	94%	
Thailand	7,187	114%	1.5	4,509	25.0	7.7	0.9	119%	
Indonesia	3,871	37%	2.3	738	34.5	-3.0	0.3	109%	
Poland	15,431	59%	1.4	7,731	20.6	-0.7	1.8	100%	
Philippines	3,104	68%	2.6	941	27.0	-2.6	0.0	118%	
Turkey	9,346	50%	2.1	2,487	29.2	-3.6	2.4	78%	
Chile	16,079	53%	1.7	4,321	22.7	-3.1	0.3	104%	
Qatar	70,780	79%	1.9	31,148	45.8	9.3	0.3	112%*	
UAE	40,711	81%	1.4	27,677	22.6	6.6	na	109%	
Colombia	6,684	23%	1.8	927	21.0	-3.8	0.8	95%	
Peru	7,002	39%	2.3	1,624	21.8	-1.5	0.2	114%	
Greece	20,408	76%	1.3	5,517	13.3	-3.4	0.6	95%	
Hungary	15,924	51%	1.5	14,289	26.9	0.5	0.7	102%	
Czech Republic	22,850	79%	1.6	19,741	26.3	0.2	-0.8	120%*	
Argentina	11,627	22%	2017	2.3	1,640	20.8	-5.4	2.6	84%
Egypt	2,573	77%	2017	3.3	457	16.7	-2.4	0.7	107%
Saudi Arabia	23,566	39%	2017	2.3	7,323	25.9	8.3	-0.7	110%*
Pakistan	1,555	37%		3.6	138	16.4	-6.1	1.5	89%
Kuwait	30,839	87%		2.1	12,456	23.6	12.7	-1.4	120%
Nigeria	2,049	17%		5.4	286	13.7	2.1	-0.8	125%
Morocco	3,359	101%		2.4	1,201	33.3	-4.5	1.9	100%
Oman	19,302	51%		2.9	8,536	31.5	-5.9	0.4	110%
Kenya	1,857	34%		3.5	229	17.2	-5.4	2.4	122%
Vietnam	2,551	139%		2.1	2,212	26.6	3.0	2.3	130%*
Romania	12,285	35%		1.6	4,794	23.6	-4.6	1.5	109%
Bangladesh	1,745	44%		2.1	216	31.6	-2.8	-0.2	134%
Sri Lanka	4,068	56%	2017	2.2	867	36.7	-3.2	3.6	107%
Kazakhstan	9,237	28%		2.8	3,011	26.1	0.6	1.6	82%
Senegal	1,474	32%		4.7	156	26.3	-7.2	4.3	94%
Estonia	22,990	62%		1.6	16,240	27.0	1.7	na	119%
Lithuania	19,143	48%		1.7	13,947	18.6	1.4	-0.8	117%
Slovenia	26,234	60%		1.6	22,531	21.2	6.5	-0.4	101%
Croatia	14,816	78%		1.4	7,534	20.6	2.9	0.7	101%
Bahrain	25,851	81%	2015	2.0	18,013	31.5	-5.8	-1.6	106%
Lebanon	9,257	250%	2017*	2.1	4,458	22.0	-27.0	5.2	120%
Serbia	7,243	48%		1.5	3,431	23.1	-5.2	5.4	98%
Tunisia	3,423	50%		2.2	1,455	20.1	-11.2	-0.2	75%
Jordan	4,278	101%		2.8	1,342	18.4	-7.4	1.2	121%
Mauritius	11,281	174%	*	1.4	4,019	18.4	-6.2	3.4	112%
Ivory Coast	1,680	32%		4.7	472	21.6	-3.4	3.5	100%
Iran	5,491	91%	2016	2.2	930	38.3	4.3	-1.0	41%
Georgia	4,400	45%		2.1	1,827	34.0	-7.9	4.1	97%
Armenia	4,149	37%		1.8	1,382	21.6	-6.2	6.7	120%
Azerbaijan	4,569	24%		2.1	1,617	26.4	12.6	1.6	94%
Belarus	6,306	32%		1.7	3,899	28.6	-2.3	4.2	73%
Moldova	3,218	33%		1.3	1,039	21.9	-9.9	3.5	136%
Ukraine	2,963	27%		1.4	1,337	23.5	-3.7	-5.3	101%
Cambodia	1,509	92%		2.5	969	22.0	-10.5	-1.4	125%

Very good	100%+	Under 2	2,000 or more	Over 35%	Over 3%	Lower than -0.5%	More than 20% undervalued
Quite good	60-100%	2 to 3	1,000-2,000	25-35%	0 to 3%	From -0.5 to 1	More than 10% undervalued
No opinion		Mauritius, Lebanon are financial centres		20-25%			*Means we discount the overvaluation message
Quite poor	40-60%	3 to 4	650 to 1,000		-3% to -6%	From 1 to 2	More than 10% overvalued
Poor	20-40%	4 to 5	300 to 650	15-20%	to -10%	From 2 to 4	More than 20% overvalued
Very poor	sub-20%	Over 5	Zero to 300	Under 15%	More than -10%	Above 4	More than 30% overvalued

Source: IMF, World Bank



Figure 15: Key indicators (continued)

	GDP per capita (\$), 2018	Deposits to GDP, 2018 (MRV)	Total fertility rate (2015-2020 est)	Exports of goods and services per capita (2017), \$	Investment to GDP, 2019E	Current account balance (% GDP), 2019E	Real interest rates	Currency valuation
Algeria	4,238	51%	3.1	906	48.9	-9.1	-3.1	96%
Angola	3,669	28%	5.6	1,101	20.6	1.3	-7.8	114%
Botswana	8,137	39%	2.9	3,188	26.8	9.6	-1.5	110%
Cameroon	1,548	17%	4.6	135	30.1	-4.0	1.0	103%
Equatorial Guinea	10,453	13%	4.6	6,000	10.3	-3.6	0.4	119%
Egypt	2,573	77%	3.3	457	16.7	-2.4	0.7	107%
Ethiopia	853	32%	4.3	47	39.1	-6.5	na	135%
Gabon	8,297	19%	4.0	1,996	30.4	-1.9	0.7	107%
Ghana	2,206	21%	3.9	744	21.8	-3.2	4.9	81%
Ivory Coast	1,680	32%	4.7	472	21.6	-3.4	3.5	100%
Kenya	1,857	34%	3.5	229	17.2	-5.4	2.4	122%
Mauritius	11,281	174%*	1.4	4,019	18.4	-6.2	3.4	112%
Morocco	3,359	101%	2.4	1,201	33.3	-4.5	1.9	100%
Mozambique	476	44%	4.9	185	49.2	-34.4	1.3	95%
Namibia	5,727	57%	3.4	2,414	16.6	-4.3	0.4	99%
Nigeria	2,049	17%	5.4	286	14	2.1	-0.8	125%
Rwanda	791	20%	4.1	140	24.3	-7.8	2.7	91%
South Africa	6,377	60%	2.4	1,860	17.9	-3.4	0.6	92%
Senegal	1,474	32%	4.7	156	26.3	-7.2	4.3	94%
Tunisia	3,423	50%	2.2	1,455	20.1	-11.2	-0.2	75%
Uganda	724	18%	5.0	120	26.5	-6.8	7.2	92%
Zambia	1,417	20%	4.7	528	42.2	-5.0	2.9	102%
Tanzania	1,134	17%	4.9	154	34.6	-3.7	5.6	102%
Central African Republic	430	13%	4.8	15	15.9	-8.6	-3.6	183%
Republic of Congo	2,511	18%	4.5	1,703	18.3	5.5	0.2	110%
DR Congo	449	12%	6.0	103	12	-0.5	-7.6	107%
Chad	874	8%	5.8	100	23.9	-4.8	1.3	104%

Very good	100%+	Under 2	2,000 or more	Over 35%	Over 3%	Lower than -0.5%	More than 20% undervalued
Quite good	60-100%	2 to 3	1,000-2,000	25-35%	0 to 3%	From -0.5 to 1	More than 10% undervalued
No opinion		Mauritius, Lebanon are financial centres		20-25%			
Quite poor	40-60%	3 to 4	650 to 1,000		-3% to -6%	From 1 to 2	More than 10% overvalued
Poor	20-40%	4 to 5	300 to 650	15-20%	to -10%	From 2 to 4	More than 20% overvalued
Very poor	sub-20%	Over 5	Zero to 300	Under 15%	More than -10%	Above 4	More than 30% overvalued

Source: IMF, World Bank



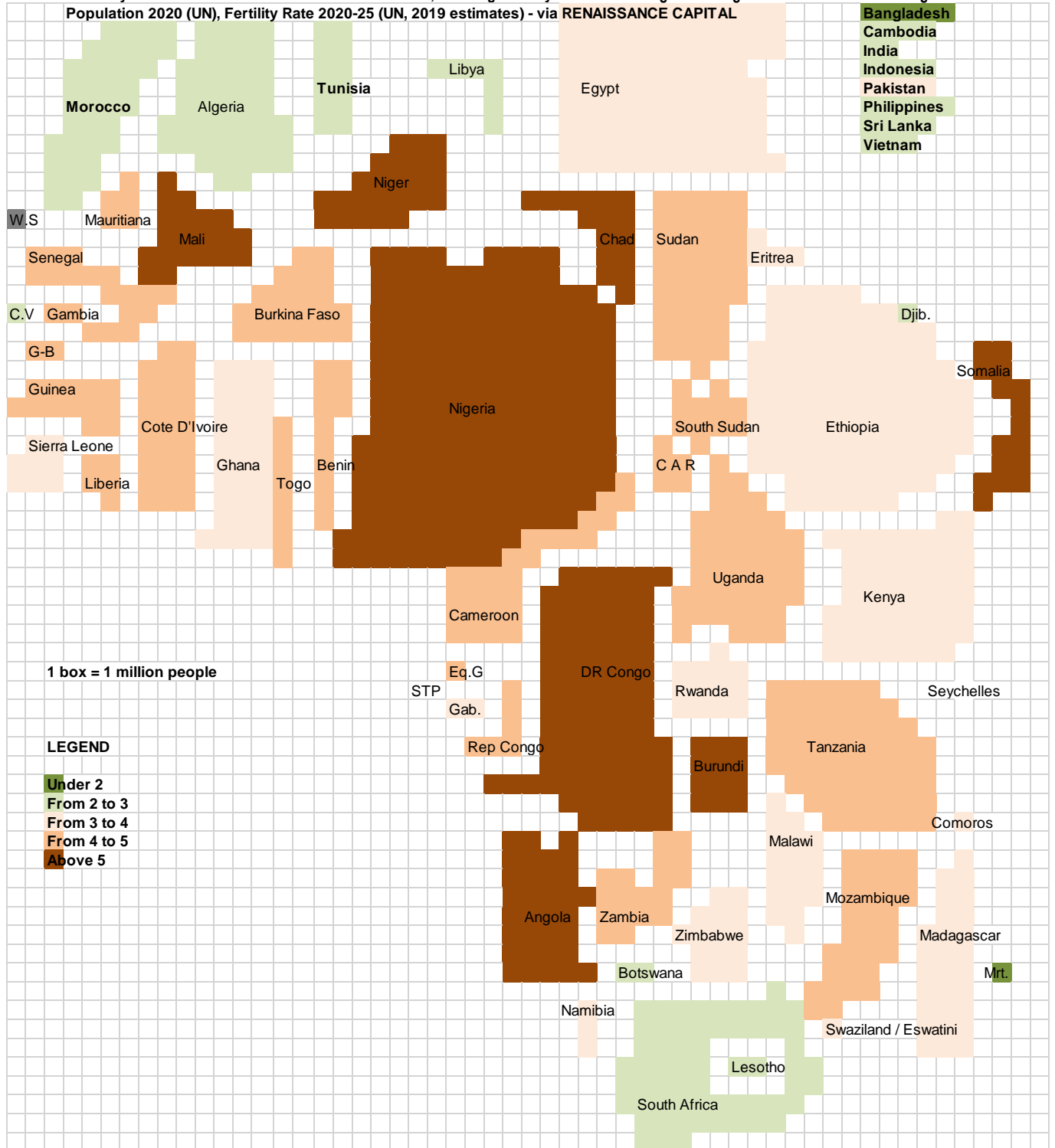
Figure 16: Fertility rates and bank deposits

	1950-1955	1955-1960	1960-1965	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	1960	1970	1980	1990	2000	2010	2018
China	6.1	5.5	6.2	6.3	4.9	3.0	2.5	2.7	1.8	1.6	1.6	1.6	1.6	1.7	na	na	36%	77%	135%	179%	206%
Korea	5.7	6.3	5.6	4.7	4.0	2.9	2.2	1.6	1.7	1.5	1.2	1.2	1.2	1.1	5%	28%	27%	31%	62%	134%	165%
India	5.9	5.9	5.9	5.7	5.4	5.0	4.7	4.3	3.8	3.5	3.1	2.8	2.4	2.2	11%	12%	25%	33%	44%	65%	63%
South Africa	6.1	6.1	6.0	5.8	5.5	5.1	4.9	4.4	3.5	2.9	2.6	2.6	2.6	2.4	na	55%	49%	49%	50%	59%	60%
Brazil	6.1	6.1	6.0	5.3	4.6	4.2	3.8	3.1	2.7	2.5	2.1	1.9	1.8	1.7	17%	17%	na	29%	44%	64%	79%
Mexico	6.8	6.8	6.8	6.8	6.3	5.3	4.4	3.8	3.2	2.9	2.6	2.4	2.3	2.1	18%	26%	23%	17%	19%	26%	31%
Russia	2.9	2.8	2.6	2.0	2.0	1.9	2.0	2.1	1.5	1.2	1.3	1.5	1.7	1.8	na	na	na	na	na	38%	52%
Malaysia	6.3	6.4	6.4	5.4	4.7	4.2	4.0	3.7	3.4	3.1	2.5	2.2	2.1	2.0	16%	32%	64%	52%	105%	120%	115%
Thailand	6.1	6.1	6.1	6.0	5.1	3.9	2.9	2.3	2.0	1.8	1.6	1.6	1.5	1.5	13%	23%	34%	68%	104%	91%	114%
Indonesia	5.5	5.7	5.6	5.6	5.3	4.7	4.1	3.4	2.9	2.6	2.5	2.5	2.5	2.3	na	na	9%	30%	44%	34%	37%
Poland	3.6	3.5	2.7	2.3	2.2	2.2	2.3	2.2	1.9	1.5	1.3	1.4	1.3	1.4	na	na	50%	25%	36%	48%	59%
Philippines	7.4	7.3	7.0	6.5	6.0	5.5	4.9	4.5	4.1	3.9	3.7	3.3	3.1	2.6	13%	19%	18%	25%	51%	53%	68%
Turkey	6.7	6.5	6.2	5.8	5.4	4.7	4.1	3.4	2.9	2.6	2.4	2.2	2.1	2.1	9%	25%	10%	15%	32%	49%	50%
Chile	4.9	4.8	4.6	4.1	3.5	2.9	2.6	2.6	2.5	2.2	2.0	1.9	1.9	1.7	na	10%	23%	29%	49%	40%	53%
Qatar	7.0	7.0	7.0	7.0	6.8	6.1	5.5	4.4	3.7	3.5	3.0	2.2	2.0	1.9	na	23%	16%	46%	42%	57%	79%
UAE	7.0	7.0	6.9	6.8	6.5	5.8	5.3	4.9	3.9	3.0	2.4	2.0	1.7	1.4	na	na	14%	30%	31%	70%	81%
Colombia	6.5	6.7	6.6	5.9	4.7	4.2	3.6	3.2	3.0	2.7	2.4	2.1	1.9	1.8	14%	15%	17%	18%	23%	22%	23%
Peru	7.0	7.0	6.9	6.6	6.0	5.4	4.7	4.2	3.6	3.1	2.7	2.7	2.4	2.3	12%	14%	na	16%	27%	32%	39%
Greece	2.5	2.4	2.3	2.6	2.5	2.4	2.1	1.5	1.4	1.3	1.3	1.4	1.3	1.3	10%	19%	36%	53%	49%	95%	76%
Hungary	2.7	2.3	1.8	2.0	2.0	2.3	1.8	1.8	1.7	1.4	1.3	1.3	1.3	1.5	na	na	na	32%	38%	53%	51%
Czech Republic	2.7	2.4	2.2	2.0	2.2	2.4	2.0	1.9	1.6	1.2	1.2	1.4	1.5	1.6	na	na	na	na	53%	67%	79%
Argentina	3.2	3.1	3.1	3.1	3.2	3.4	3.2	3.1	2.9	2.6	2.5	2.4	2.3	2.3	13%	17%	na	8%	25%	18%	22%
Egypt	6.8	6.8	6.7	6.5	6.0	5.7	5.5	5.0	4.2	3.6	3.2	3.0	3.5	3.3	17%	16%	37%	66%	62%	67%	77%
Saudi Arabia	7.2	7.2	7.3	7.3	7.3	7.3	7.0	6.2	5.6	4.4	3.7	3.2	2.7	2.3	na	3%	6%	13%	16%	27%	39%
Pakistan	6.6	6.6	6.6	6.6	6.6	6.6	6.4	6.3	6.0	5.4	4.7	4.2	3.8	3.6	17%	26%	21%	19%	26%	33%	37%
Kuwait	7.2	7.2	7.3	7.4	6.8	5.6	5.0	3.7	2.6	3.0	2.6	2.4	2.1	2.1	na	31%	34%	na	67%	75%	87%
Nigeria	6.4	6.4	6.4	6.4	6.6	6.8	6.8	6.6	6.4	6.2	6.1	5.9	5.7	5.4	5%	7%	na	8%	11%	18%	17%
Morocco	6.6	6.9	7.1	6.9	6.4	5.9	5.4	4.4	3.7	3.0	2.7	2.5	2.6	2.4	16%	15%	20%	31%	56%	95%	101%
Oman	7.3	7.3	7.3	7.3	7.4	8.1	8.3	7.8	6.3	4.5	3.2	2.9	2.9	2.9	na	na	11%	21%	28%	36%	51%
Kenya	7.5	7.8	8.1	8.1	8.0	7.6	7.2	6.5	5.7	5.4	5.0	4.7	4.1	3.5	na	22%	18%	17%	27%	36%	34%
Vietnam	5.4	6.2	6.4	6.5	6.3	5.5	4.6	3.8	3.2	2.2	1.9	1.9	2.0	2.1	na	na	na	na	na	na	139%
Romania	3.1	2.7	2.1	2.9	2.7	2.5	2.2	2.3	1.5	1.3	1.3	1.5	1.5	1.6	na	na	20%	48%	20%	34%	35%
Bangladesh	6.4	6.6	6.8	6.9	6.9	6.6	6.0	5.0	4.1	3.4	2.9	2.5	2.2	2.1	na	na	9%	17%	25%	42%	44%
Sri Lanka	5.8	5.8	5.2	4.7	4.0	3.6	3.2	2.6	2.4	2.2	2.3	2.3	2.2	2.2	14%	15%	20%	18%	28%	29%	56%
Kazakhstan	4.4	4.6	4.4	3.7	3.6	3.2	3.0	3.0	2.6	2.0	2.0	2.5	2.7	2.8	na	na	na	na	11%	31%	28%
Senegal	6.8	6.9	7.1	7.3	7.3	7.3	7.3	6.7	6.2	5.7	5.3	5.1	5.0	4.7	5%	6%	13%	13%	14%	22%	32%
Estonia	2.1	2.0	1.9	2.0	2.2	2.1	2.1	2.2	1.6	1.3	1.4	1.7	1.6	1.6	na	na	na	na	28%	56%	62%
Lithuania	2.8	2.7	2.4	2.3	2.3	2.1	2.0	2.1	1.8	1.5	1.3	1.4	1.6	1.7	na	na	na	na	17%	42%	48%
Slovenia	2.7	2.4	2.3	2.3	2.2	2.2	1.9	1.7	1.3	1.2	1.2	1.4	1.6	1.6	na	na	na	na	44%	57%	60%
Croatia	2.7	2.4	2.2	2.0	2.0	1.9	1.9	1.7	1.5	1.6	1.4	1.5	1.5	1.4	na	na	na	na	37%	73%	78%
Bahrain	7.0	7.0	7.2	7.0	6.0	5.2	4.6	4.1	3.4	3.0	2.7	2.3	2.1	2.0	na	na	34%	44%	59%	77%	81%
Lebanon	5.7	5.7	5.7	5.2	4.7	4.2	3.7	3.5	3.2	2.7	2.2	1.9	2.1	2.1	na	na	180%	179%	186%	231%	250%
Serbia	3.2	2.6	2.5	2.4	2.4	2.4	2.3	2.2	2.0	1.8	1.7	1.6	1.5	1.5	na	na	na	na	13%	40%	48%
Tunisia	6.7	6.9	7.0	6.9	6.4	5.7	4.8	4.0	3.0	2.3	2.0	2.0	2.3	2.2	na	23%	29%	38%	41%	47%	50%
Jordan	7.4	7.4	8.0	8.0	7.8	7.4	7.0	6.0	5.1	4.3	4.0	3.8	3.4	2.8	na	20%	52%	76%	90%	101%	101%
Mauritius	5.9	5.9	6.2	4.6	3.5	3.1	2.3	2.3	2.2	2.0	1.9	1.7	1.5	1.4	na	na	34%	55%	69%	183%	174%
Ivory Coast	7.5	7.6	7.8	7.9	7.9	7.8	7.3	6.9	6.4	6.1	5.7	5.3	5.0	4.7	10%	16%	17%	20%	13%	20%	32%

Source: IMF, World Bank



Figure 17: Total fertility rate in 2020-2025 and population size, Africa and some Asian countries for comparison (top-right corner). In general, lower fertility rate countries are likely to be able to self-fund more of their investment, while high fertility countries are at greater danger of debt distress in the long term.



Source: United Nations; Renaissance Capital

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