

Brazil Demographics Primer

Demographics to support Brazilian growth in the next 10yrs

Brazil is one of the best positioned among the 20 most populous countries to benefit from positive demographic trends in the next 10 years. The country is set to benefit from a 15mn increase in the working-age population, coupled with a significant class migration: more than 30mn have joined the middle class in the past seven years. Among the BRICs, only India seems to have a more favorable positioning, and developed countries have passed this phase of positive demographic dividend.

Working population to grow by 15mn until 2020

A demographic transition is leading Brazil to an increase in the total working population (those aged 15-64 years old) by 15mn in the next 10 years, an 11% increase. This change is driven by (1) a new generation of baby boomers joining the workforce, while an older generation joins the prime savers group, (2) a relatively young population, at 29 years old median age and a declining dependency ratio and (3) total population still growing at 0.7%/year. Coupled with the right government policies, these trends should continue to drive employment and boost disposable income.

Upward social mobility: 30mn joined the middle class

In the past 7 years, 30mn people have joined the middle class in Brazil, and 20mn migrated upward from the sub-poverty levels. A combination of factors has contributed to this change in profile, including (1) historical low levels of unemployment, (2) government subsidy programs directed at the lower income population, (4) higher levels of minimum wage and (3) the increase in the population bonus. The Government's Bolsa Família project has boosted the lowest class income, benefiting mostly the North and Northeast regions, the country's poorest.

Healthcare and Education major winners in this scenario

The healthcare and education sectors benefit directly from the positive demographic dividend in Brazil. Healthcare plans are 73% corporate in the country, so growth in population coverage is mostly driven by the increase in the working population. Post-secondary Education is mostly an out-of-pocket expense in Brazil, with growth driven by increase in disposable income. An efficient student financing initiative could be the main positive game-changer in the industry.

To play the theme: DASA, Anhanguera and Amil

Our preferred picks to play the demographic trends in Brazil and ride the upward social mobility are DASA, Anhanguera and Amil. We believe these are the national champions in their own segments, and should continue to benefit from the sector growth as well as consolidation.

Country Overview

Equity | Latin America | Healthcare & Education
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Chart 1: 2020: First baby boomers as prime savers & second boomers entering work age

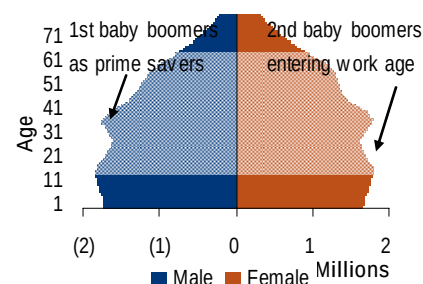


Chart 2: Brazil has a relatively low median age

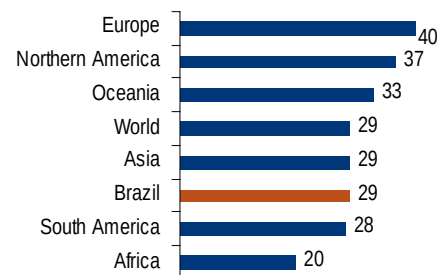
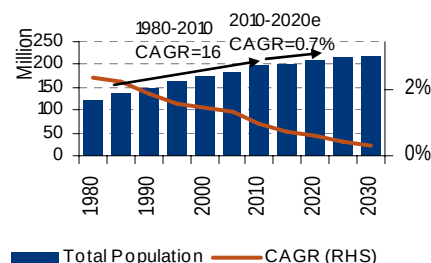


Chart 3: Total population to grow 0.7% annually



Source: BofAML Global Research, UN, IBGE

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Refer to important disclosures on page 27 to 30. Analyst Certification on Page 25. Price Objective Basis/Risk on page 25. Link to Definitions on page 25.10983629

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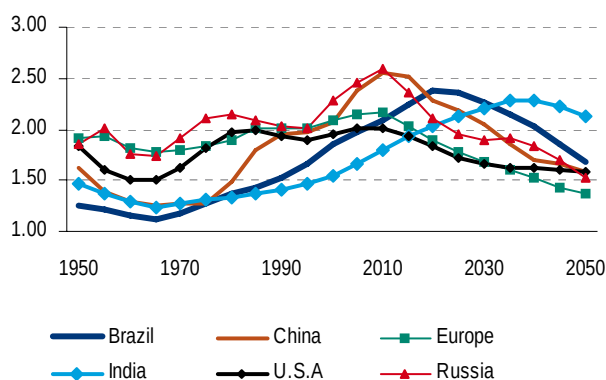
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We explore the demographic trends in Brazil for the next 10 years and its drivers. Brazil is set to benefit from a 15mn addition to the working age population driven by (A) a new generation of baby boomers joining the workforce, while an older one joins the prime savers group, (B) a relatively young population, with a median age of 29 years old and a dependency ratio trending towards historical lows and (C) total population still growing at 0.7% CAGR for the next 10 years.	
2) Brazil's upward social mobility	12
An analysis of the social mobility trends in the past seven years, with a positive implication to the population disposable income. More than 30mn people have joined the middle class in Brazil, driven by (1) government subsidy programs directed at the lower income population, (2) an increase in formal employment, (3) the increase in the population bonus, and (4) higher levels of minimum wage.	
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Our take on the effects of the positive demographic trends on the Healthcare and Education sectors. Healthcare is well positioned to grow at a 10%+ CAGR for the next 10 years, driven by employment and disposable income. Post secondary Education is still underpenetrated in Brazil at 20%, and an effective student lending program should be the main driver to boost sector growth in the next decade.	
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We prefer the national champions in each segment to add exposure to Healthcare and Education. The largest companies, with a premium track record, proven business model and solid brand awareness should benefit directly from the sector growth.	

1) Positive 10yr demographics trend

Population bonus: ratio of population 15-64 years-old to number of people under 14 and over 65 years old. It expresses the ratio of the income earning part of the population to the dependent and net consumer part of the population

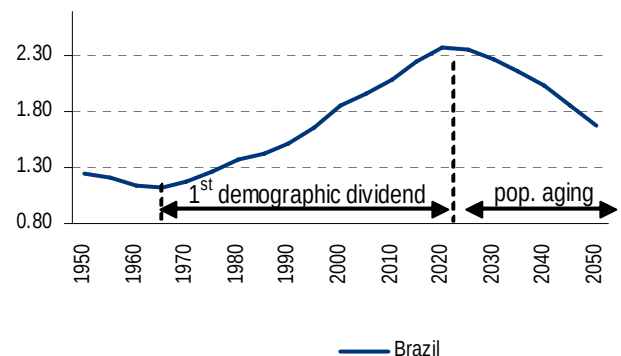
During the next 10 years Brazil should continue to benefit from what is called the first demographic dividend, as the economically active part of the population continues to increase faster than the dependent part, boosting economic growth. Since the 1970s Brazil has been benefiting from this increase in its population bonus, which should not peak until 2020. Among the BRIC countries, only India has more time to profit from this demographic dividend (peak in 2040). China's population bonus has reached its peak in 2010, and Russia's bonus is expected to decrease after 2015. Studies show that this demographic dividend accounted for almost 30% of GDP growth in Brazil from 1970-2000¹, and we believe this trend is set to continue in the next 10 years.

Chart 4: Population bonus



Source: BofAML Global Research, UN

Chart 5: Demographic dividend in Brazil



Source: BofAML Global Research, UN

Demographics explored in other regions: Our European Investment Strategy team has explored the implications of the changes in demographic profile in that region in their recent report, [European Demographics, Memento mori, 16 September 2010](#). Impacts on Asian countries were analyzed in [Youth Shall Set You Free, 29 June 2010](#). In Australia, the healthcare team has published [The impact of the Ageing Population on Healthcare, 09 September 2010](#).

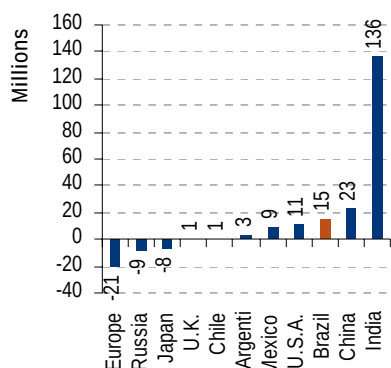
Working age population set to grow by 15mn

The Brazilian working age population (15-64) is set to grow by 15 million people in the next 10 years, an 11% increase from today's 132 million, driven by (A) a new generation of baby boomers joining the workforce, (B) a relatively young population profile, still trending towards a historical low in dependency ratios and (C) total population still growing at a 0.7% yearly rate for the next 10 years.

During the same period, total population is expected to grow by 14 million people, increasing the percentage of working age population to total population from 68% to 70%. This 272bp expansion in penetration of the working age population to total population is higher only in India (274bp), where the working age population will increase by almost 140 million people. Until 2020, this increase in the share of working age population will translate into a massive increase in workforce that, in our view, will probably be translated in a higher per capita income earning society.

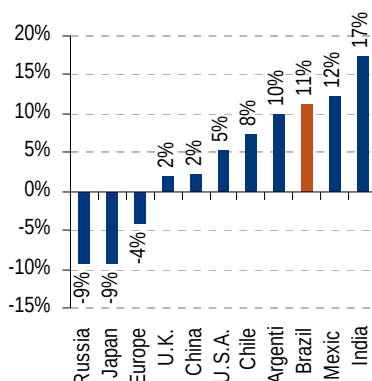
¹ Queiroz, et al. "The opportunities we cannot forget: economic consequences of population changes in Brazil".

Chart 6: Increase in number of working-age population



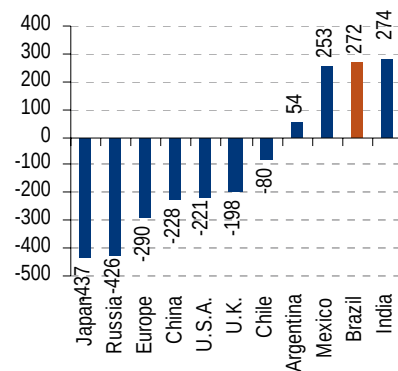
Source: BofAML Global Research, UN

Chart 7: Percentage increase in working-age population



Source: BofAML Global Research, UN

Chart 8: Increase in penetration of working-age population to total population (bps)

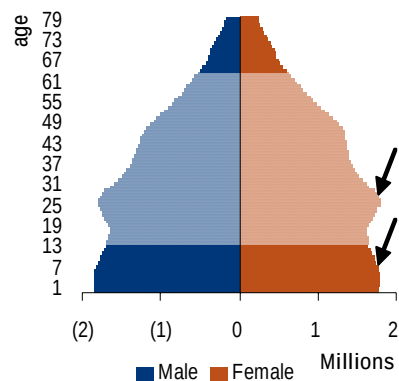


Source: BofAML Global Research, UN

A) Generations of baby boomers driving growth

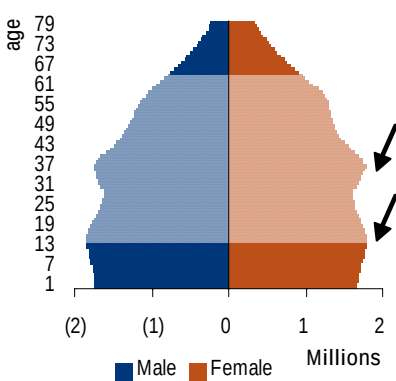
Brazil's age pyramid is what allows this significant expansion in the working force in the next 10-20 years. There are two distinct groups of baby boomers in the population that will drive this increase. The largest age group in the pyramid today is of those 20-30 years old. In 2020, this contingent will enter the prime saver group, which has the highest savings rates. At this point, a second baby-boom generation will enter the working age group and increase the income-earning segment of the population. By 2030, the first baby-boomers will be in their late prime-saver's stage and the second baby-boomer generation will be entering the prime savers' group.

Chart 9: 2010: First baby boomers at working-age



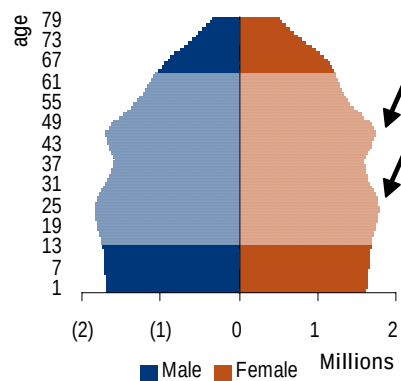
Source: BofAML Global Research

Chart 10: 2020: First baby boomers as prime savers & second boomers entering work age



Source: BofAML Global Research

Chart 11: 2030: First baby boomers retiring & second boomers at work age



Source: BofAML Global Research

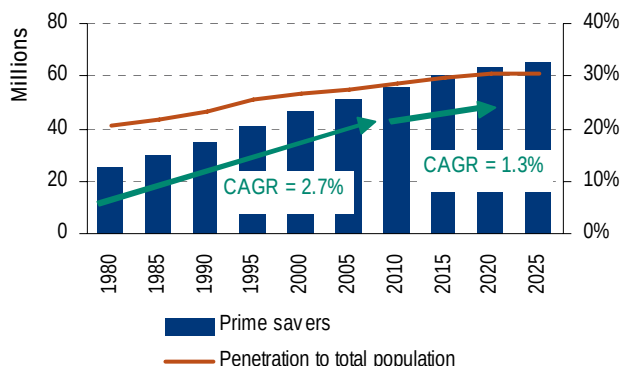
Prime savers are the part of population with the highest savings rate (the largest difference between income and expenditure), and highest productivity. There is no consensual definition about the age range of this group, but we consider 30-50 as the most relevant group in Brazil, given the income distribution along age-groups

Prime savers: growing share in total population

A portion of the working population deserves special attention when looking at the demographic changes in the country: the so-called prime savers. This is the population group that has the highest savings rate. Definitions vary regarding the age range of this group, but we believe 30-50 is a relevant group to compare Brazil given that this is the age at which Brazilians save the largest part of their income (see Chart 14). Roughly 63 million people will be between the ages of 30 and 50 years-old in 2020, 8 million more than in 2010 (a 14% increase).

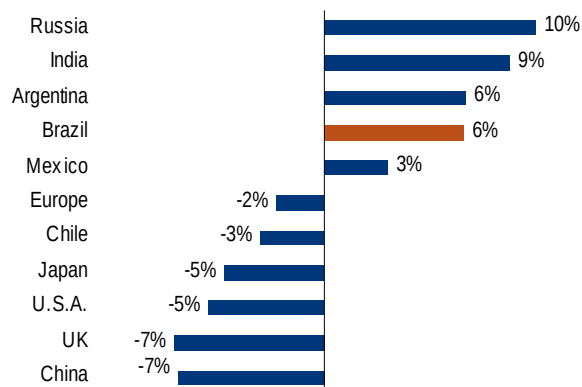
This part of the population will represent 30.3% of total population in 2020; 184bp more than today's 28.5% penetration and is expected to continue to increase until 2030. The increase in the penetration of prime savers, in particular, and of working age population, in general, to total population will act as a catalyst for economic growth, as output will expand on the back of an increase in input. The Asian economic miracle is accredited by economists to some extent to that growth in input², and Brazil still has 10-15 years to profit from it.

Chart 12: Prime savers will increase at a 1.3% 2010-2020 CAGR



Source: BofAML Global Research, UN

Chart 13: Prime savers to total population ratio change (2010 - 2020)



Source: BofAML Global Research, UN

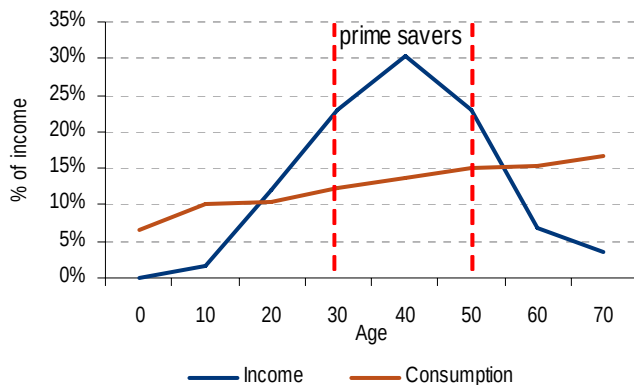
Disposable income to increase with demographic change

We estimate that the changes in the age structure alone could represent 0.7% increase in personal income per year for the next 10 years. Population aging affects income earning given that on average a person earns 76% of their total income between the ages of 30 and 50. After 50, income decreases due to an increase in percentage of retirees to total population. By 2020, almost 8 million people are expected to enter the prime savers', increasing per capita income by a total of 7% in the next 10 years.

² Krugman, P. (1994). The Myth of Asia's Miracle. Foreign Affairs; Nov/Dec, pp. 62-78.

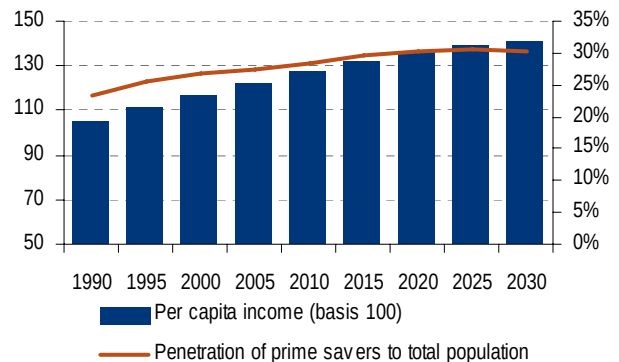
20 October 2010

Chart 14: Income and consumption age profile (normalized to total to 100% of income)



Source: BofAML Global Research, IBGE

Chart 15: Per capita income growth due to demographic changes (basis 100)*



Source: BofAML Global Research, IBGE

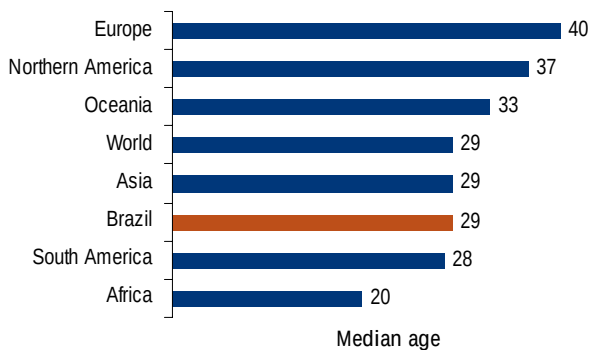
* theoretical calculation assuming no productivity gains and constant per capita income among same age groups along the years

The first demographic dividend refers to an increase in per capita income due to an increase in the productive part of the population to total population. Economic growth is due mainly to input growth.

B) Brazil is still a relatively young country

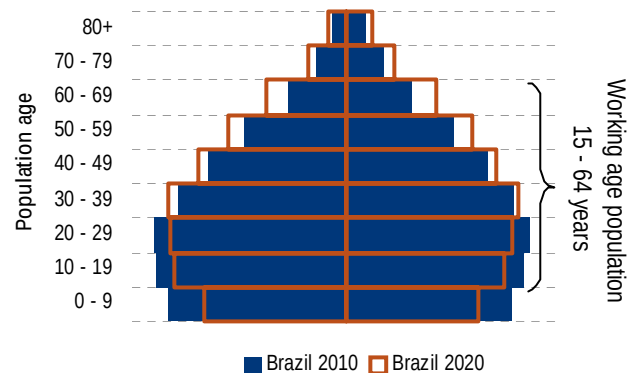
Brazil still has a relatively young population compared to developed economies, with a median age of 29 years old, versus Europe at 40 and North America at 37. A young population means Brazil will continue to benefit from a growing workforce, while worries of extra expenses caused by an elderly population are still decades away. Unless constrained by unfavorable public policies, we believe these trends should continue to drive Brazil to solid economic and wage mass growth in the next couple of decades.

Chart 16: Brazil has a relatively low median age



Source: BofAML Global Research, UN

Chart 17: Brazilian age structure will continue to increase working population



Source: BofAML Global Research, UN

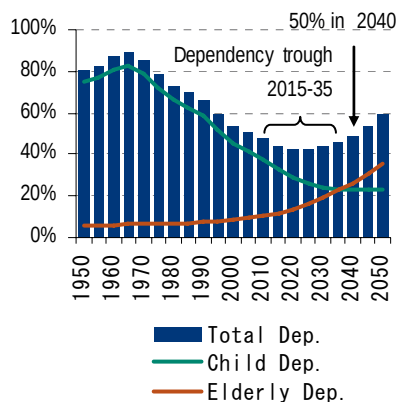
Dependency ratio: calculated as the sum of child dependency ratio (population below 14 to economically active population) and elderly dependency ratio (above 65 population to 15-64 years-old)

Dependency ratio levels off in 2020-25

Dependency ratios lead to the same positive conclusion: solid momentum for Brazil in the next 10 years. The dependency ratio in Brazil will reach its low point in 2020 when 40% of the economically active population will be dependent. This reduction in the dependency ratio has been driven by a reduction in fertility rates since the 1970s, lowering child dependency.

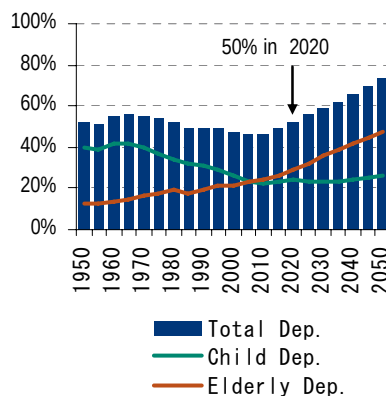
The total dependency ratio should increase only after 2025, according to UN estimates, when the reduction in fertility will be offset by the increase in life expectancy and the consequent surge in elderly dependency ratio. In Brazil dependency ratio is expected to reach 50% only in 2040 and in China in 2030. In Europe, the total dependency ratio is already at its trough and the elderly dependency ratio is increasing 300bp per year vs. a flattish child dependency ratio for the next 30 years. Already in 2020 more than 50% of the European population will be dependent. The US reached the same ratio in 1975 and has remained constant for the last 40 years.

Chart 18: Brazil dependency ratio



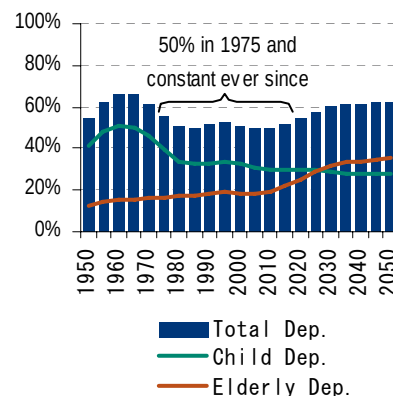
Source: BofAML Global Research, UN

Chart 19: Europe dependency ratio



Source: BofAML Global Research, UN

Chart 20: U.S.A. dependency ratio

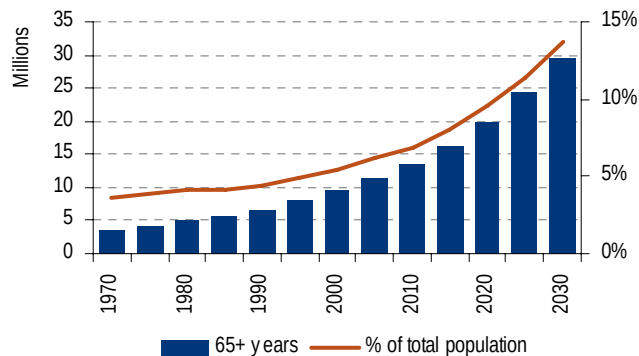


Source: BofAML Global Research, UN

Population aging is a medium-long term theme

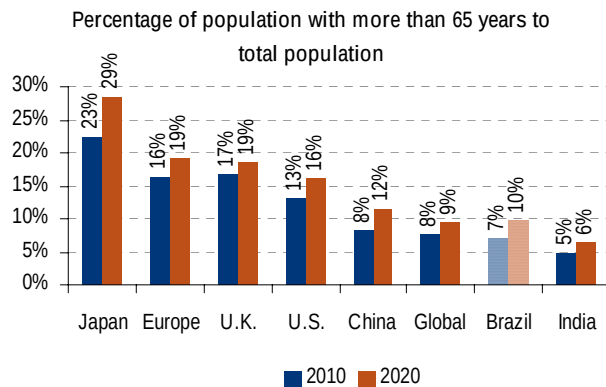
The effects of an old population are still a relatively long term theme for Brazil. While European and some Asian economies worry about the increasing number of elderly citizens in their population, it remains a subject of small repercussion in Brazil. Only 7% of the population is older than 65, low compared to developed countries at 16% and in line with the global average at 8%. In regions where the penetration of elderly population is a worry, like Europe and Japan, the percentage of people older than 65 is 16% and 23%, respectively. Such levels are not expected in Brazil until 2035 and 2050, respectively.

Chart 21: The 65+ population should increase rapidly



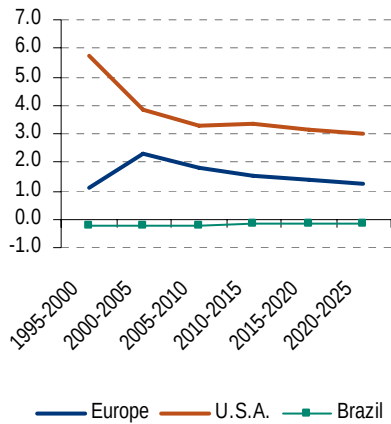
Source: BofAML Global Research, UN

Chart 22: But will remain low by global standards until 2020



Source: BofAML Global Research, UN

Chart 23: Net migration rate (per 1,000 population)



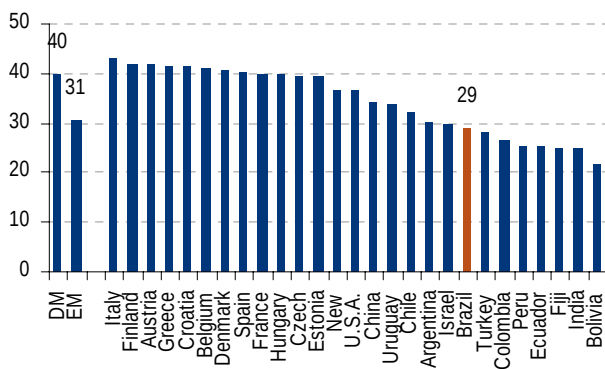
Source: BofAML Global Research, UN

Median age is below emerging markets and is growing fast

In the next 10 years the Brazilian median age is expected to grow 16% from 29 to 34. It is projected that median age will increase 2-3 years every five years, a relevant growth rate by global standards. Though the absolute levels of aging are mostly offset by a bigger working population today, Brazil should prepare itself for rapid population aging when population growth stabilizes.

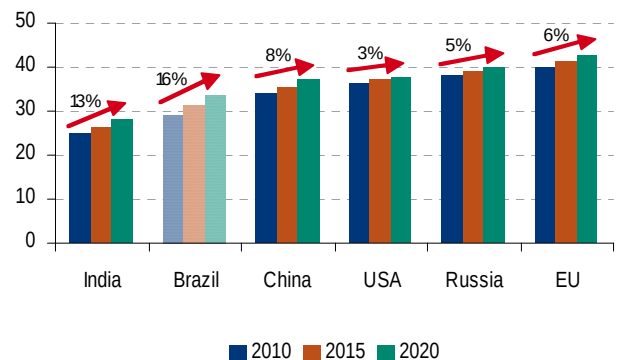
An increase in median age is a factor of (1) an increase in life expectancy, (2) a decrease in total fertility rates and (3) net migration rate. The first driver to an aging population is the increase in life expectancy due to better standards of living and better medical conditions. Thereafter, education and cultural changes in population reduce fertility rates, continuing to increase median age. Though net migration rates can have a strong impact in the increase of a country's median age, we do not consider this variable in our calculations because it has a limited impact on the Brazilian population (but significant to DM, such as U.S.A and Europe).

Chart 24: Life expectancy at birth in 2010 and 2030



Source: BofAML Global Research, UN

Chart 25: But is growing faster than average

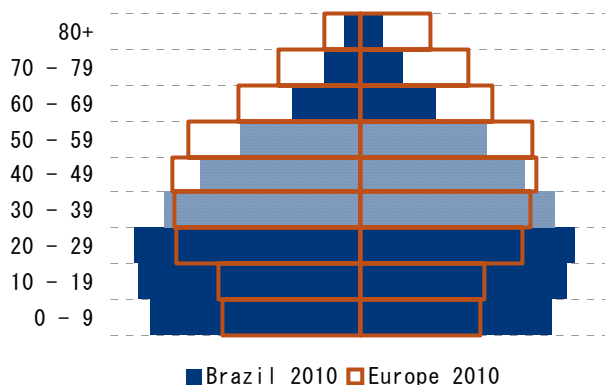


Source: BofAML Global Research, UN, WHO

Changing the population distribution among age groups considerably

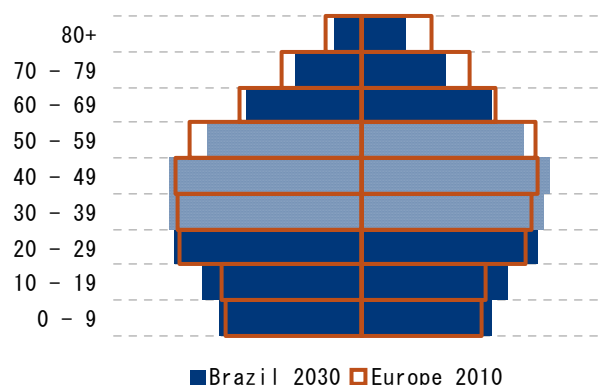
By 2030, Brazilian age distribution is expected to be approximately the same as Europe's currently. The reduction of fertility rates preceded by the increase in life expectancy will create a baby-bust generation that will live in a country where almost half of the population will be older than 40 years old. The percentage of people ages 0-19 to total population is expected to fall to 23% in 2030 from 34% in 2010, while those 60+ should increase from today's 10% to 19%.

Chart 26: In 2010 roughly 16% of Brazilian population is 60+



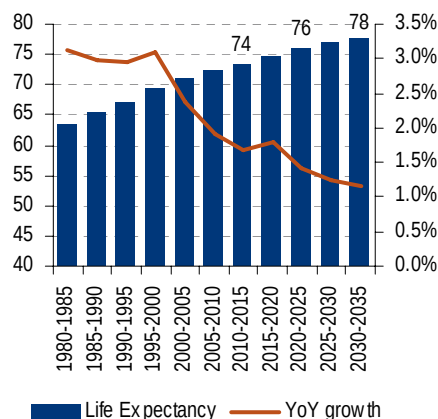
Source: BofAML Global Research, UN

Chart 27: In 2030 this percentage is expected to increase to 27%, almost the same as in Europe



Source: BofAML Global Research, UN

Chart 28: Life expectancy in Brazil



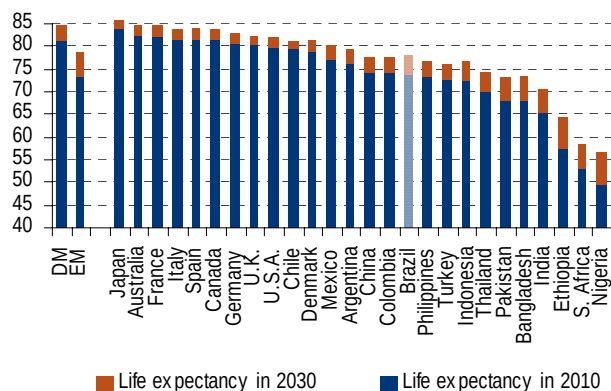
Source: BofAML Global Research, UN

Increase in life expectancy is the first driver to increase in median age

Increasing life expectancy has been a widespread trend in both developed and emerging markets, driven by better living standards, medical technology advances and lower child mortality rates, among others. Life expectancy at birth in Brazil is currently 74, significantly below developed countries at 81 years. During the next 20 years, life expectancy at birth in Brazil is expected to increase by 3 years, achieving the number of 78 years in 2030.

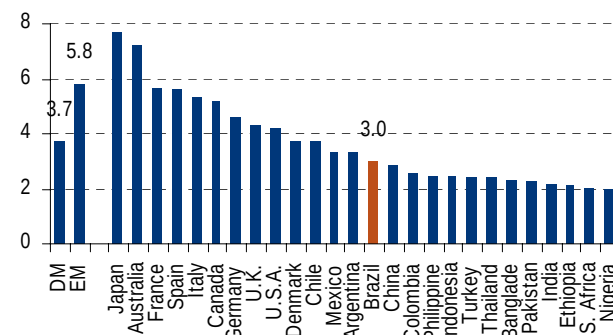
Life expectancy at birth is a measure of the average age a person is expected to achieve if born at a given year, thus the increase of that measure will only have an impact in the long term. The first impact is on the extension of the period a person expects to be economically active, and on the postponement of retirement age. This impact has a positive effect on the economy, as the period during which the population produces increases. The second impact is that retirement will last longer, and population aging becomes an economic concern. The increase in life expectancy in Brazil is impacting economy through the first effect, a positive one. Though the aging of population could become a potential long term issue, we don't expect it to happen in the next 20-30 years.

Chart 29: Life expectancy at birth in 2010 and 2030



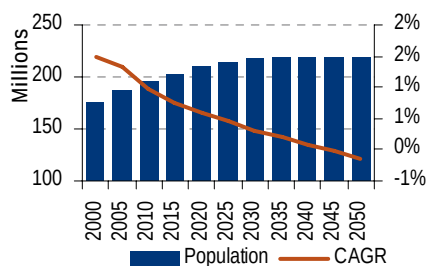
Source: BofAML Global Research, UN

Chart 30: Increase in life expectancy at birth 2010-2030 (in number of years)



Source: BofAML Global Research, UN

Chart 31: We do not expect a decrease in total population to happen in the next 30 years

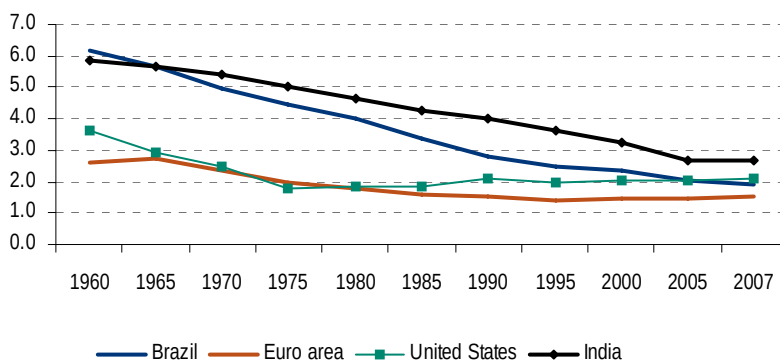


Source: BofAML Global Research, UN

Decline in fertility rates is the second driver in increasing median age

The fertility rate in Brazil has been declining for the last 50 years, and is currently below replacement level, trending downward. Fertility rates are at 1.88 per woman, vs. an average rate of more than six in 1960. Compared to other countries, Brazil is in the middle of the range. In 2007 India had a TFR of 2.7 and the Euro Area at 1.5. Even though fertility rates in Brazil are already below replacement levels, population will continue to grow given the still high percentage of young people and the increase in life expectancy. As the population gets older, the decline in total fertility rate is expected to decrease population size, but not until 2050 given the young average age of the population. This means many women are still going through their reproductive period.

Chart 32: Total fertility rate

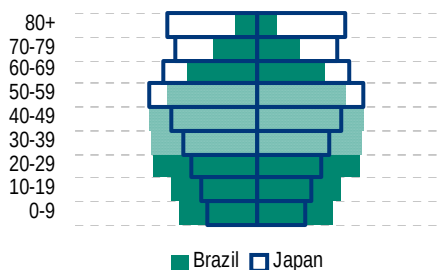


Source: BofAML Global Research, UN, World Bank

Demographic challenge in the very long term

There is still a long time for demographic changes to become a burden to Brazil, but the population bonus curve decline that will begin in 2030 could be steeper than in most countries. The basic comparison is Japan, where the population bonus is expected to fall to almost 1 in 2050, after which the number of dependent people will surpass the total amount of productive working age people. Already in 2010, Japan's total dependency ratio is at 56% and is expected to increase to 96% in 2050. For Japan it will mean that in 2050 there will be almost as many productive people as dependent ones.

Chart 33: Age pyramid in 2030



Source: BofAML Global Research, UN

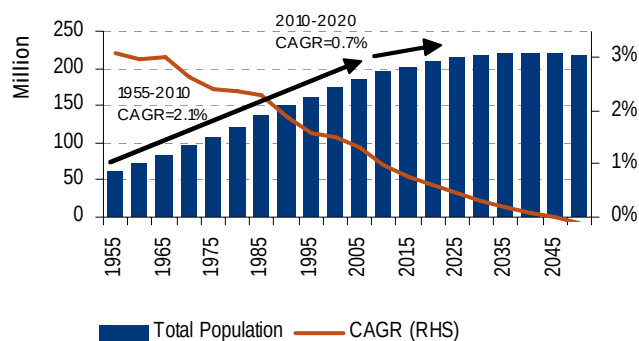
As this transition takes place Brazil will face a reduction in input-driven growth and depend on productivity gain to maintain its economic expansion – the second demographic dividend. For Brazil to benefit from the second dividend the elderly must be able to accumulate enough assets during their working years to support their own consumption, given that there will be a reduced base of dependents to support the elderly. In that sense, it is essential that per capita income rises so that population can save during working age.

These long term projections (10+ years) are usually very sensitive to the underlying assumptions, such as fertility and mortality rates, as well as migration patterns. As the European strategy team pointed out in their [European Demographics, Memento mori, 16 September 2010](#) report, these forecasts are often misguided by quite a large percentage.

C) Population growing at 0.7% 10yr CAGR

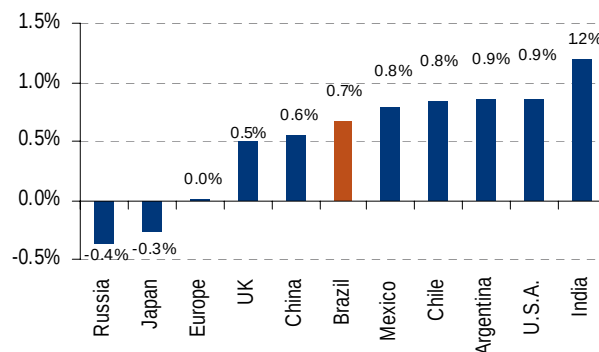
Total population growth in Brazil has been steadily declining as fertility rates drop, but it is still expected to grow at a 0.7% 2010-2020 CAGR. In terms of the BRICs only India is expected to grow faster than Brazil. This population increase provides another support for sustained growth in the employed population for the next 10-20 years. Most projections point to significantly lower growth rates by 2035, which make sense, though long term population projections generally tend to be significantly over or under estimated because there are various assumptions in play. Nevertheless, the bullish case for the next 10 years remains intact.

Chart 34: Population is expected to grow at a 0.7% 2010-20 CAGR



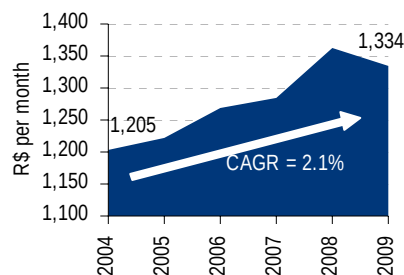
Source: BofAML Global Research, UN, EIU

Chart 35: 2010-2020 population CAGR in Brazil is still relevant



Source: BofAML Global Research, UN, EIU

Chart 36: Average real income has grown at a 2.1% CAGR

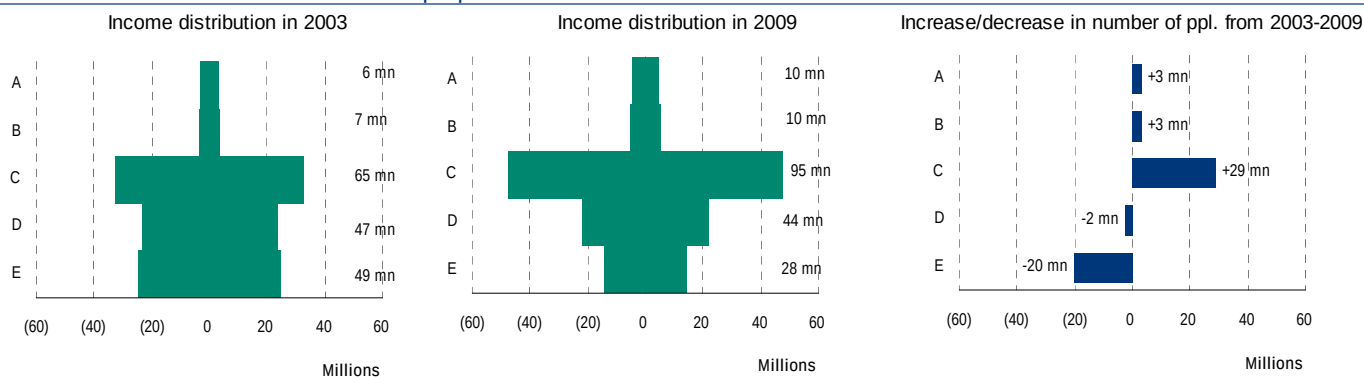


Source: BofAML Global Research, IBGE

2) Brazil's upward social mobility

The Brazilian population has been going through a major class migration the past decade. From 2003 to 2009 almost 30 million people entered the social economic class C (a monthly income of R\$1,126 to 4,854 per household) from the lower economic classes, majorly from class E, which represent 15% of total population, down from 28% in 2003. A combination of factors have contributed to this change in profile, including (1) historical low levels of unemployment, (2) government subsidy programs directed at the lower income population, (3) the increase in the population bonus, and (4) higher levels of minimum wage. This has resulted real income per month to increase by a 2.1% 2004-2009 CAGR, and it is currently at R\$1,334 per month per capita (~US\$667).

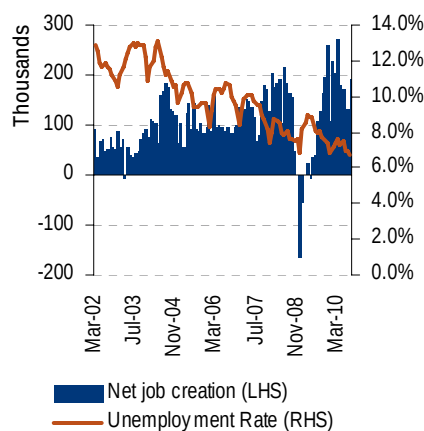
Figure 1: From 2003 to 2009 more than 29 million people entered social economic class C from classes D and E



Source: BofAML Global Research, CPS, FGV³, PNAD, IBGE

* Social economic levels are divided by income per month by households as follows: class E from R\$0 – 705, class D from R\$705 – 1,126, class C from R\$1,126 – 4,854, class B from R\$4,854 – 6,329 and class A more than R\$6,329.

Chart 37: Net job creation and fall of unemployment



Source: BofAML Global Research, IBGE

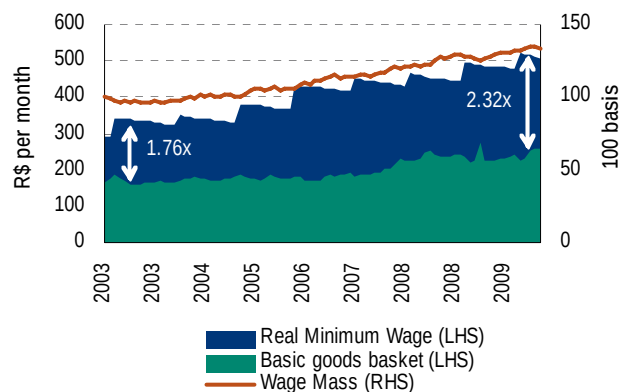
Driven by lower unemployment and higher wages

Two of the most important drivers of this change in Brazilian disposable income have been the fall of unemployment levels and the increase in real minimum wage, in our view. For the last seven years the government increased the minimum wage once a year by 5% on average. In turn, the value of the basic goods basket (i.e., the minimum quantity of food, cleaning and hygiene material deemed necessary for a family of four) has increased at a 4.4% CAGR in the same period, leading to an increase in the ratio of baskets acquired from 1.8x to 2.3x.

Formal employment creation has reached new historical highs in 2010, leading the overall unemployment ratio to an all-time low of 6.7% in August. This decrease in unemployment has been followed by a gradual increase in the formalization in the economy, as seen in Chart 39. Informal jobs have been reducing, down to 19% from 21% in 2003. We expect the trend of general formalization of the economy to continue in the next years.

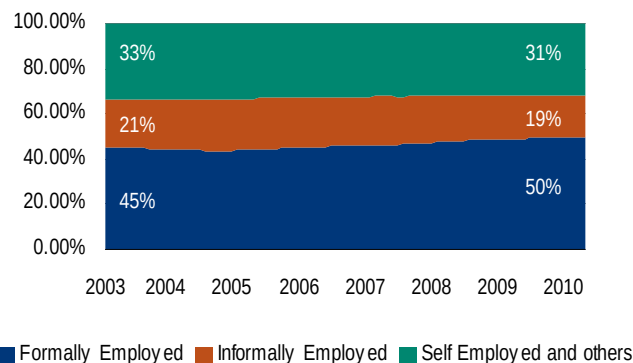
³ CPS/FGV: "A nova classe média: o lado brilhante dos pobres".

Chart 38: Wage mass and minimum wage have increased steadily ...



Source: BofAML Global Research, IBGE, IPEADATA

Chart 39: ... As has formal employment (% to employed population)



Source: BofAML Global Research, IBGE, IPEADATA

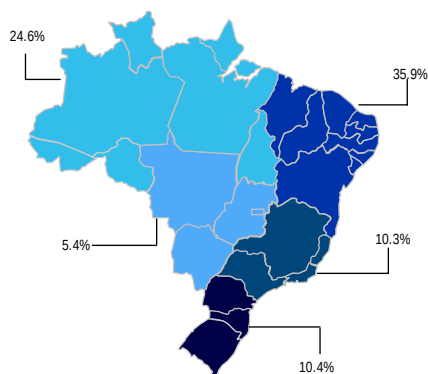
Bolsa Família is a government-sponsored program that transfers income to poor families (monthly income below R\$140), aiming to reduce poverty and assist needy families. For further details, please refer to the following website:
<http://www.mds.gov.br/bolsafamilia>

Public policies help drive lower classes

The Brazilian government has been active in reducing poverty and income inequality, mainly through the "Bolsa Família" program. This initiative aims to assist those families that have a monthly income below R\$140 with financial subsidies. The regions that have benefitted the most from the governmental assistance are the Northern and Northeastern regions, the poorest in the country. This is one of the main reasons why retail sales growth has been much higher in these regions than in the rest of the country.

- **Classes D/E** - The average income of the lowest deciles increased more than 6% in real terms (Chart 40) from 2001-2009 reflecting: (1) lower inflation; (2) a 9% CAGR in the minimum wage in the last 5 years; and (3) social programs to transfer income to the poorest ones. By comparison, the average income of the highest two deciles increased by 2.43% and 1.49%.
- **North and Northeast** – The strong performance of the Northern and Northeastern region retail sales (Chart 41) reflect: (1) the concentration of low-income domiciles in those regions: the average household income in the North region represents 76% of Brazil's average, while the Northeast region reaches 63%; and (2) the concentration of the government social program - 36% of all families in the northeastern regions are beneficiaries of "Bolsa Família" in the Northeastern region and 25% in the Northern region (Figure 2). In 2009 the program transferred R\$12.4bn to 12.3 million families, an average R\$84/month per family.

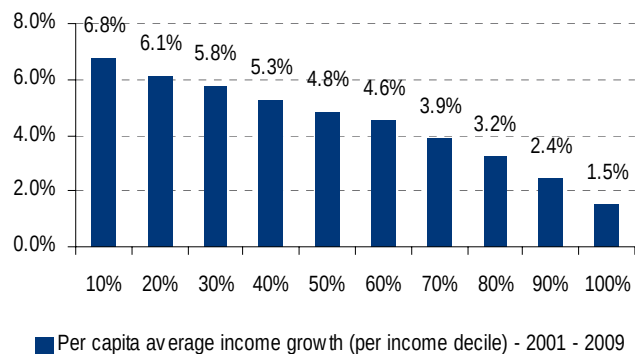
Figure 2: % of families assisted by "Bolsa Família" by region



Source: BofAML Global Research, IBGE

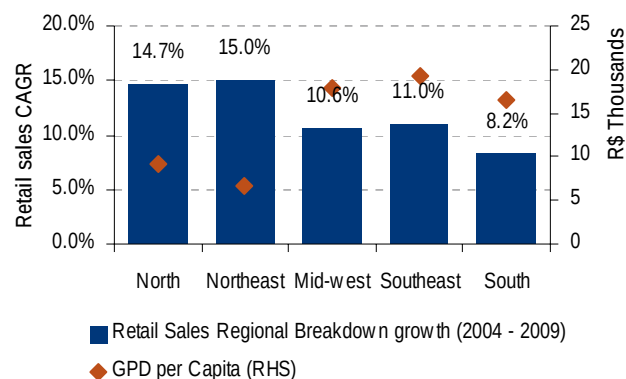
20 October 2010

Chart 40: Income inequality has been decreasing since 2001 in Brazil



Source: BofAML Global Research, CPS/FGV, PNAD

Chart 41: Retail sales has been growing faster in poorer regions of the country in the past 5 years



Source: BofAML Global Research, MCM Consultores, IBGE, PMC

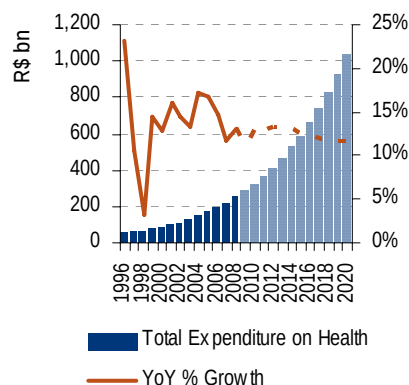
3) Healthcare and Education exposure

The healthcare and education sectors are directly exposed to the demographics trends, and thus benefit from the positive trends in the Brazilian market in the next 10 years. The healthcare sector has been benefiting directly from the increase in working age population, and a sustainable growth for the sector of over 10% in the next 10 years. Post secondary education in Brazil is still underpenetrated, at 21%, but a boost in growth will depend on increasing financing availability.

Healthcare: a sustainable 10%+ 10-year CAGR

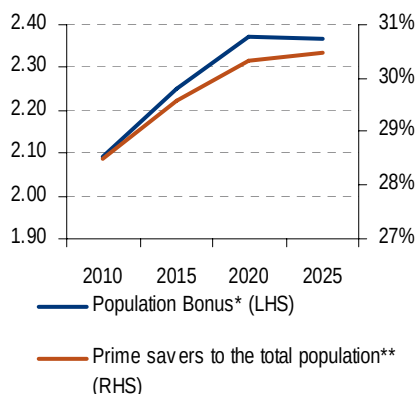
The main impact of the positive demographic trends of the healthcare sector is that they should support a sustainable spending growth for the next 10 years, with limited downside risk to sector growth. We expect healthcare spending in Brazil to grow at a 10-12% CAGR in the next 10 years, supported by (1) an increase of 15 million in working age population in the next 10 years; (2) an increase in formal employment; (3) disposable income growth; and (4) population growth and aging, as population is expected to grow at a 2010-2020 CAGR of 0.7% and share of population over 65 is expected to increase by 267bp to 10% of total population in that same timeframe; .

Chart 42: Expenditure on health growth ...



Source: BofAML Global Research, UN, IPEA

Chart 43: ... driven by demographic ...

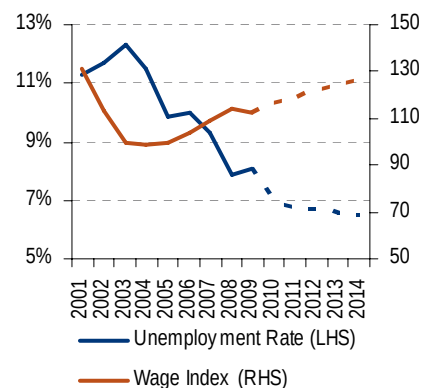


Source: BofAML Global Research, UN

* Population Bonus = (15 - 64 yrs.)/(rest of population)

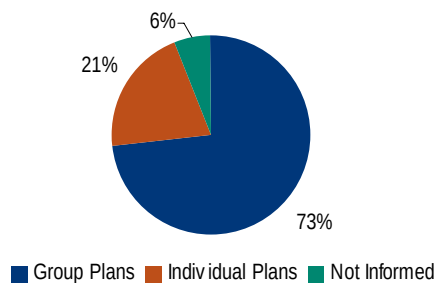
** Prime savers to total population = (30 - 50)/(total population)

Chart 44: ... and economic factors



Source: BofAML Global Research, EIU, IBGE

Chart 45: 73% of healthcare plans are group plans

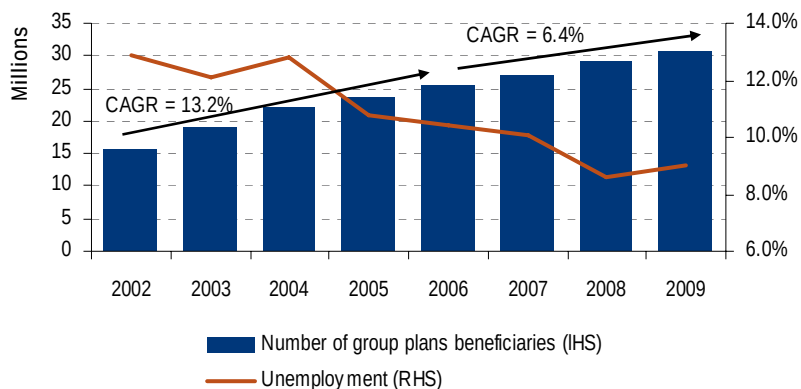


Source: BofAML Global Research, ANS

Employment is the most relevant driver

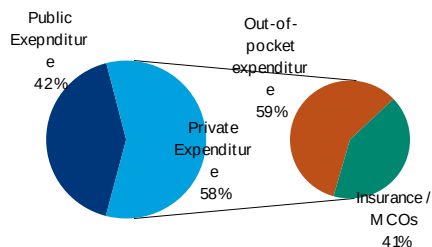
We expect the 15mn addition to working age population in the next ten years will continue to support the growth in private coverage in Brazil at an annual growth rate of 4-5%. Brazil has a universal public healthcare coverage system, which is supplemented by the private sector. Today, 22% of the population resorts to private coverage, and the vast majority of these – 73% – are corporate plans. Thus, formal job creation is the major driver to increase in private coverage, which in turn drives other private healthcare expenditures. The creation of formal jobs in Brazil is at all time highs, driving unemployment to a series low of 6.7%.

Chart 46: Fall in unemployment is a major driver for increase in group plans



Source: BofAML Global Research, ANS, IBGE

Chart 47: 59% of private expenditure on HC is out of pocket

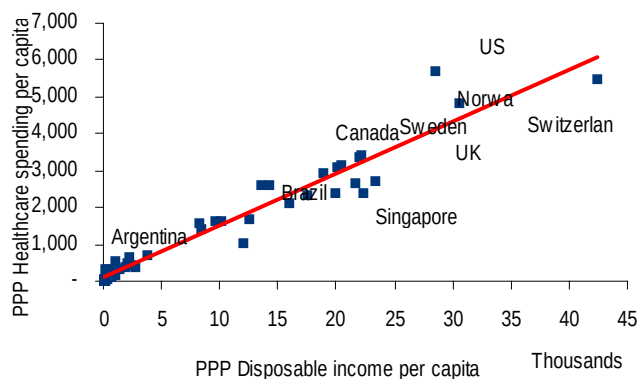


Source: BofAML Global Research, UN

Disposable income and aging are supportive macro trends

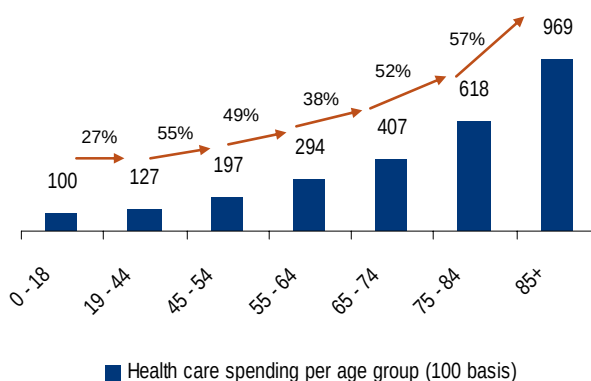
Disposable income is an important driver to healthcare spending, as 59% of the private expenditure on health is out-of-pocket in Brazil. The main item within this group is expenditure with drugs, which is an out-of-pocket item in Brazil, turning disposable income into a main driver for growth in the sector. There is a 97% correlation in countries HC expenses vis-à-vis their disposable income. Population aging adds to the equation, as expenses with health treatment rise exponentially in older ages. On average, a person 50-64 years-old spends twice as much on healthcare as a person with 0-18 years, and people 85 and older spend 8.7x more on healthcare than people under 20.

Chart 48: Disposable income: a driver for Healthcare



Source: BofAML Global Research, WHO, EIU

Chart 49: People with 85+ years old spend on average 9.7x what people with 0-18yrs. old spend on health

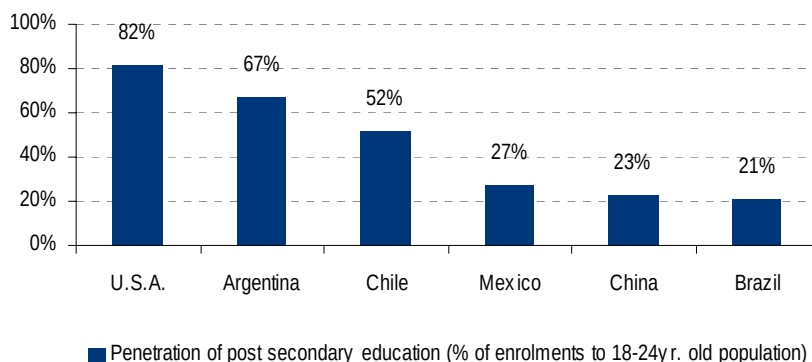


Source: BofAML Global Research, Centers for Medicare and Medicaid Services,

Education: underpenetrated sector

Penetration of post-secondary education in Brazil is low when compared to other countries. There are currently slightly more than five million students enrolled in post-secondary courses in Brazil (attending graduation courses only), roughly 20% of the total population with 18-24 years old. This ratio is low when compared to other countries, such as Chile (at 52%), Argentina (at 67%) and U.S.A. (at 82%). Out of this group, approximately 75% are enrolled in private institutions and the vast majority pays for these courses with out-of-pocket money.

Chart 50: Post-secondary education in Brazil has one of the lowest penetration in the world

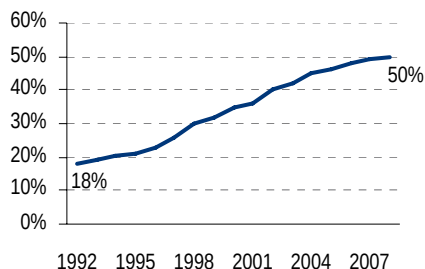


Source: BofAML Global Research, IBGE, Unesco

Demographics: secondary education increasing traction

Since 1992, Brazil has been benefiting from an increase in the average education level of its population. The percentage of people aged 15-17 years old attending secondary education is now at 50%, up from 20% in 1992. This has driven the number of people with 11 years of study (full secondary education, but no postsecondary) to 23.6% of total population, up from 12.5% in 1992 (see Chart 53), an increase of 17.5mn people who are eligible to seek post-secondary degree.

Chart 51: Net penetration ratio in secondary education is increasing substantially*

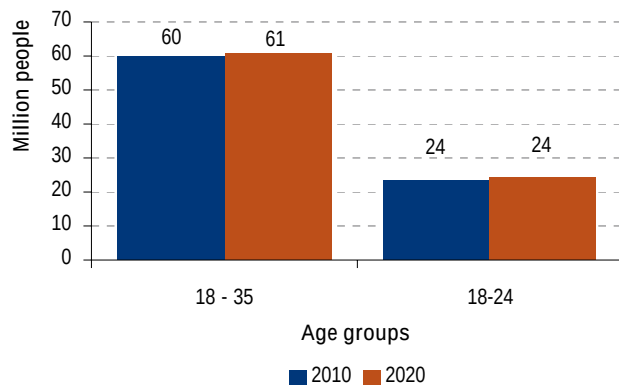


Source: BofAML Global Research, PNAD

* net penetration ratio = % of population enrolled in the education level that is according to their age

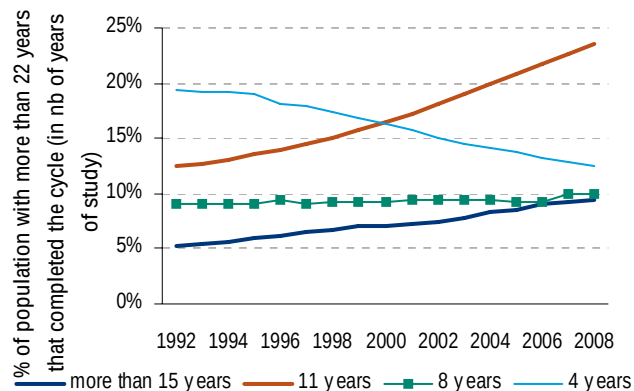
The relevant age groups for the post-secondary sector (18-24 and 18-35 years old) won't change much in absolute numbers in the next 10 years. Until 2020 it is expected that the age-group from 18 to 35 years will increase by 683 thousand people (Chart 52). Although this increase should not have a relevant impact on the sector, we expect the number of people with complete secondary education (11 years of study) to continue to increase, enhancing the potential client base of post-secondary education.

Chart 52: Relevant age-groups aren't expected to have significant changes in the next 10 years...



Source: BofAML Global Research, UN

Chart 53: ... though more people will be able to attend post-secondary education



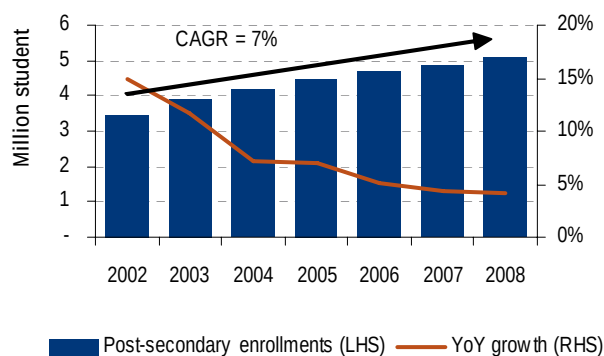
Source: BofAML Global Research, UN

Sector growing at low single digits because of affordability

Despite the low penetration ratio, the post-secondary sector in Brazil has been growing at a low single digit rate during the last five years, and a 4.5% CAGR in the last three years (Chart 54). The main reason for the sluggish growth in volumes despite a strong potential is affordability, in our view.

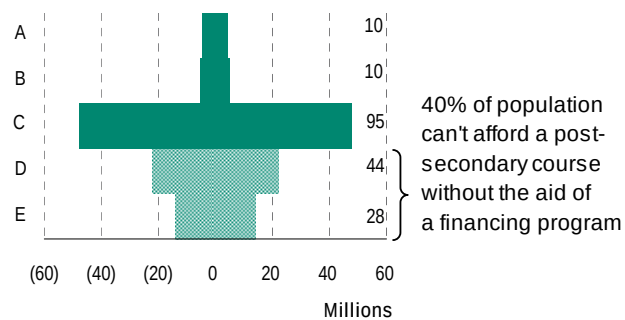
The average tuition of a traditional post-secondary course in Brazil is R\$500-600/month (US\$300-350/month), which although does not seem high in absolute terms, it is a high figure considering the average Brazilian population. Considering that most people are not willing to (or usually are unable to) spend more than 30% of their total income on education, only 60% of the population today has enough earnings power to actually finance their own education. This parcel of the population is already highly educated, thus the sector growth should only resume once the lower income portion is able to access cheap financing.

Chart 54: Sector has been growing at low single digits



Source: BofAML Global Research, INEP

Figure 3: Only 60% of population can finance their own post-secondary course



Source: BofAML Global Research, INEP

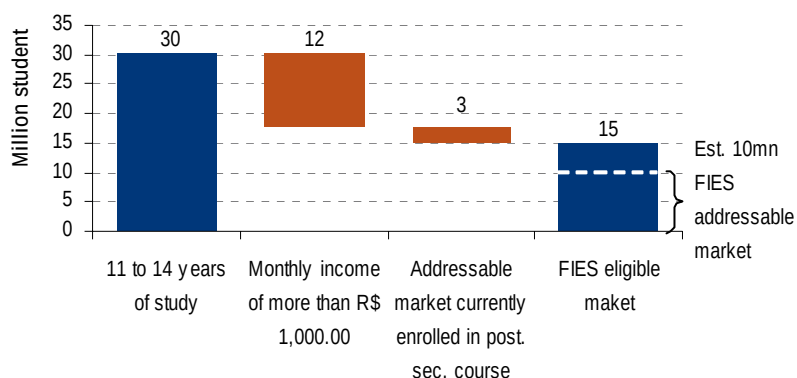
We explain the most recent changes in the FIES program in our report: [Positive changes in FIES – cosignership to be removed, 09 September 2010](#)

Student financing will be the major driver to growth

We estimate that only 20% of the students enrolled in the private post-secondary system have access to some sort of financing, all others pay out of pocket. An effective government-subsidized student financing program will be the main driver for unlocking sector growth and increasing penetration in the next decade, in our view. We believe the new FIES (Financiamento Estudantil; the Brazilian government student financing program) could attend to an addressable market of close to 10mn people that fit the program's eligibility criteria, more people than are currently attending to post-secondary courses today (see Chart 55).

The government has recently made some positive changes to its student lending program, but there are still barriers to be solved before a fast rollout, in our view. The major setbacks, in our view, are (1) students don't know about it: program will have to be heavily marketed by the government and the companies; (2) bureaucracy to get the loan is still a problem in most regions and (3) the need of a co-signer to guarantee the loan to students. This last impediment is already being changed by the government, and should cease to be a problem in the very near term (see link to our last report on FIES).

Chart 55: We estimate an addressable FIES market of 15 million people*



Source: BofAML Global Research, PNAD

* We refer as addressable market those who earn less than R\$1,000.00 per month and can finance up to 75% of tuition with FIES

4) Top picks to play demographics

Our favorite names to play the positive demographic trends in Brazil are DASA, Anhanguera and Amil. In our view, these companies are national champions in their segments, and are well positioned to benefit from positive sector trends set forth by these demographic changes in Brazil. Additionally, they are the main consolidators in their segments as well, and should continue to benefit from market share gains and scale/branding advantages.

DASA: multi-brand strategy

DASA is Brazil's largest medical diagnostics company and the fifth largest among listed companies in the world. The company began operations over 40 years ago and has been growing consistently since then, reaching an estimated 11% share of total medical diagnostics market today.

Growth: access to different growth channels

DASA is well positioned to continue growing market share organically, outgrowing the diagnostic market growth of 8-10% CAGR. DASA benefits from having exposure to all segments in diagnostics: traditional B2C, sales to state and city government, and the reference business, or B2B. DASA should continue to grow in line with the market in the traditional business, while the B2B business has been growing at a 30% YoY rate, benefiting from new labs added to the base and higher average tickets. The B2G segment depends on new contracts, as a step-function growth, which we expect will continue to outgrow the diagnostics market as well.

Differentiators: market positioning, scale

DASA has a solid strategic positioning in the market, with relevant local market share in its more important markets. The strong local share allows the company better than average bargaining power versus payers, as the latter usually depend on DASA as a low cost provider. The company's exposure to several segments allows a segregated client base, which helps DASA further hedge itself from payers' bargaining power. The company operates with more than 10 brands and assesses all of Brazil's social economic levels.

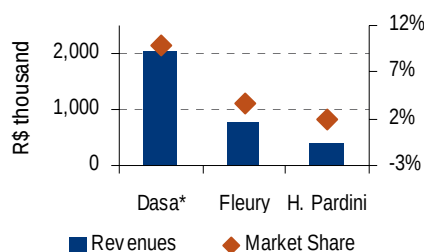
Scale: DASA is the largest national player

DASA is the diagnostic lab market leader in the country, with more than twice the revenues flow of the second player, and several times larger than all others. This permits better bargaining power in negotiation with payers, the main advantage of scale in healthcare. Additionally, it allows the company to dilute fixed costs, attaining higher margin efficiency, and allows for better asset utilization in central labs. DASA also benefits from procurement gains versus imaging equipment and reagent suppliers.

M&A: solid track record

DASA has acquired over 10 companies in the last five years (see Table 1), and we expect the company to remain active in M&A, boosting growth beyond the sector average. The majority of acquisitions were accretive and strategically coherent. DASA adopts the strategy of maintaining the acquired brand and making structural changes to profit from synergy gains, which we believe to be correct in the diagnostic laboratories' industry. The last acquired companies were focused on providing imaging services, and we expect DASA will continue to acquire this kind of company, mainly to improve its mix (only 40% of the company's revenues are from imaging services, compared to the market at 60%).

Chart 56: DASA is the largest player



Source: BofAML Global Research, companies

* includes revenues of Sergio Franco

Table 1: Recent acquisitions in the sector

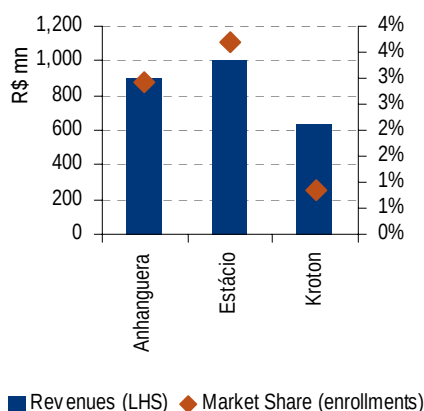
Acquirer	Acquired company	Price Paid	EV / EBITDA
DASA	MD1	R\$ 1.5 bn	15.0x
Fleury	DI Serviços Médicos	R\$ 11.5 mn	4.9x
Fleury	Weinmann	not disclosed	not disclosed
DASA	Cedic e Cedilab	R\$ 40 mn	5.6x
DASA	Unimagem	R\$ 16 mn	4.0x
DASA	MedImagem	R\$ 47 mn	4.4x
DASA	Cientifica Lab	R\$ 85 mn	6.4x
DASA	Frischmann Aisengart	R\$ 32 mn	6.7x
DASA	Álvaro	R\$ 28 mn	4.4x
DASA	LabPasteur	R\$ 13 mn	6.5x
DASA	Vita Lámina	R\$ 5 mn	5.4x
DASA	Atalaia	R\$ 31 mn	6.2x
DASA	Exame	R\$ 56 mn	6.8x

Source: BofAML Global Research, companies

Risks: payers consolidation, execution, competition

One of the main risks for DASA is price pressure from additional consolidation in the payers' base. A fast consolidation could lead to stronger bargaining power, pressuring providers, though DASA should be less impacted than smaller competitors. Other risks concerns execution, especially in delivering future M&A and competition with other local labs.

Chart 57: 3 publicly traded players



Source: BofAML Global Research, companies, HOPER

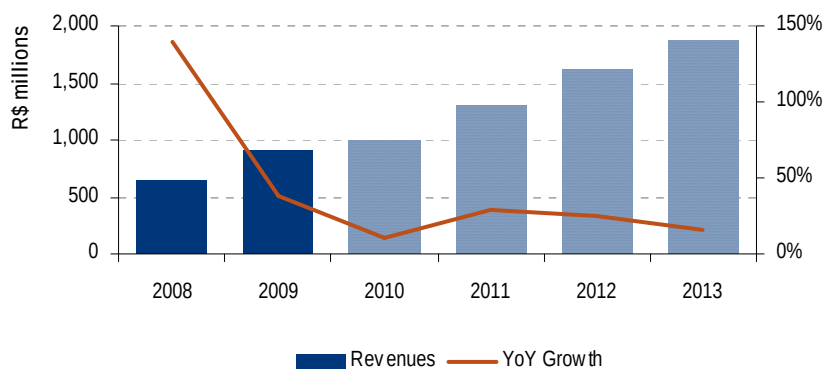
Anhanguera: main consolidator in Education

Anhanguera is one of the three largest post-secondary education companies in Brazil, currently with 168k in traditional post-secondary students (spread in 53 campuses), and 126k students in distance learning education. It has the most proven business model, commanding a premium margin to peers, and it has the most solid track record in acquisitions.

Growth: gaining market share organically and through M&A

Anhanguera has been growing at an accelerated pace since its IPO: it had 53k students in 2007, and currently stands at 168k traditional post-secondary students. This growth has been achieved through several acquisitions, and an average of 4-5 new organic campuses opened per year. We believe the company is well positioned to continue to largely outgrow the market pace, growing revenues at 15-20%+ for the next 3-4 years (see Chart 58).

Chart 58: Anhanguera's net revenues growing at a 21% CAGR



Source: BofAML Global Research, company

Differentiators: business model, brand, scale

Anhanguera has the most well-proven business model in post secondary education, in our view. Its centralized content creation and SG&A structure positions it as one of the low-cost providers in the segment, allowing for competitive prices with an above-peers quality, a result of the standardization of content. Although its footprint is still concentrated mostly in the countryside of Sao Paulo, it has been investing in its brand equity since inception, and has one of the most well-known brands in its regions, which we believe will play an important role in the future of the sector (as students focus shift towards brand/quality). The scale achieved in the 3 years post-IPO has been key in assuring SG&A dilution.

M&A: best segment track record

Anhanguera has acquired over 15 companies in the last five years (see Table 2), and we expect the company to remain active in M&A, boosting growth significantly beyond the sector average. Anhanguera has maintained a price discipline of making acquisitions at up to R\$5,000-6,000/student, which we see as an accretive level. The company has a solid track record of integrating acquired campuses into their operations, quickly stripping off unnecessary SG&A, while the academic migration takes 3-4 years to fully develop, as only new students are migrated to Anhanguera's academic model, while the acquired units' former students graduate in the old curriculum, to avoid a the hazard of change.

Table 2: Recent acquisitions from Anhanguera

Acquisition	Date	Students ('000)	EV (R\$ mn)	EV/student (R\$ '000)
Centro Universitário Ibero-Americano (operations)	Feb-07	2.7	16.7	6.2
Faculdade Fênix de Bauru	Mar-07	1.9	6.5	3.4
Faculdade Integração Zona Oeste (operations)	Apr-07	4.2	18.2	4.3
Faculdade Atlântico Sul *	Jul-07	2.9	13.1	4.5
UNIDERP and UAES **	Oct-07	37.6	226.8	6.0
Instituto de Ensino Superior Senador Fláquer ***	Dec-07	9.8	60.0	6.1
Sociedade Educacional Garra Ltda ("Faplan")	Feb-08	2.5	10.3	4.1
Faculdade de Negócios e Tecnologias da Informação ("FACNET")	Feb-08	3.7	20.5	5.5
EDUCAR and INTESC	Feb-08	5.7	30.0	5.3
FRIS	May-08	n/d	3.5	n/d
FAENAC / FABRAI	May-08	8.0	44.4	5.5
FACSUL	Jul-08	2.8	13.7	4.9
FASERT	Jul-08	0.5	2.6	4.8
Microlins	Jul-08	n/m	26.4	n/m
SBCEC (Faculdade JK)	Sep-08	5.3	31.3	5.9
Faculdade Santa Terezinha (FAST)	Sep-08	1.0	5.3	5.1
Faculdade Taboão da Serra	Sep-08	5.4	32.6	6.0
LFG	Oct-08	70.0	229.5	3.3

Source: BofAML Global Research, Anhanguera

* FAS: 2.9k students as of Mar-07. Multiple paid of R\$4.5k/student is relative to Mar-08 students; the implicit forecast of number of students is 3.7k for Mar-08.

** UNIDERP and UAES: currently totals 37.6k students (14.1k in hybrid distance learning model), but price paid already considers hybrid model achieving 20k students in 2008.

*** Instituto de Ensino Superior Senador Fláquer number of students is as of Jan-08

Risks: execution, management, competition

As an M&A story, management's ability of execution is key in Anhanguera's business case and we are very comfortable with the current management team's track record. However, this management is still linked to Patria private equity, which brought Anhanguera public, and they must ensure a smooth management transition process so as not to interfere with the operations once the fund decides to make the company fully independent. Competition in the sector is also a medium term concern: as more players become capitalized and trend towards a more efficient business model, Anhanguera will increasingly more competition on operations and on M&A. We believe the sector is still too fragmented for competition to be a short term concern (top 3 players concentrate less than 9% market share), as the larger players are focused on different geographic regions.

Amil: largest MCO with 6% market share

Amil Participações is Brazil's largest managed care operator and among health plan companies in terms of plan members. The company has 4 million members with a market share of 6% in total health plans and an average ticket of healthcare plans of R\$148 per month, significantly above the average ticket for the industry, of R\$116.

Growth: 10% organic growth 10-year CAGR

We believe Amil is the best positioned company among the managed care operators to profit from the healthcare sector growth of 10-12%. As the largest player in the industry, Amil benefits from bargaining power against providers, guaranteeing lower medical loss ratios, and has significant pricing power in the corporate contracts and new individual contracts. We believe the solid branding should allow Amil to continue gaining market share in health plans, potentially growing beyond the 10-12% organically, also boosting growth through M&A.

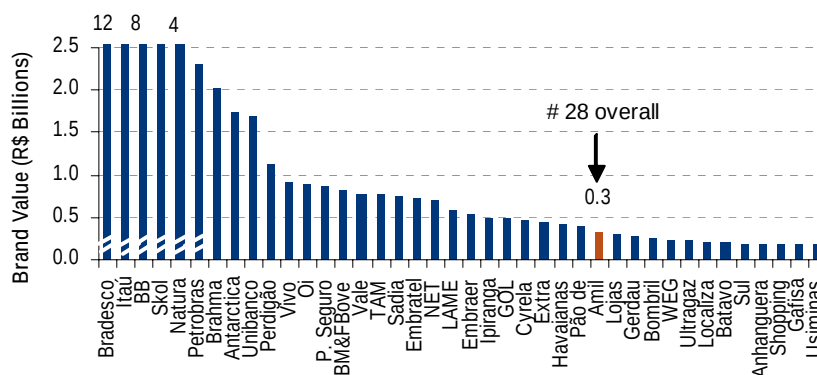
Differentials: Building a nationally strong brand

Amil has a national footprint and has been building one of the strongest national brands in health plans. The company's brand is worth R\$325mn the 28th most valuable in Brazil, and the second among payers (The only most valuable brand among payers is Porto Seguro's, an insurance company that offers different kinds of insurance, not only health plans). Additionally according to another survey, the "Top of Mind", Amil is the second most remembered brand in the MCO's segment, only behind Unimed, a conglomerate of regional medical cooperatives. Although Unimeds share the same brand name, they don't have a national coordination. This brand recognition places Amil in a good position to expand its footprint and gain market share. The company's strategy to enter new regions is to acquire local operations and implement its own brand.

Figure 4: Amil has a national footprint



Chart 59: Amil has the 28th strongest brand in Brazil, and the second among payers

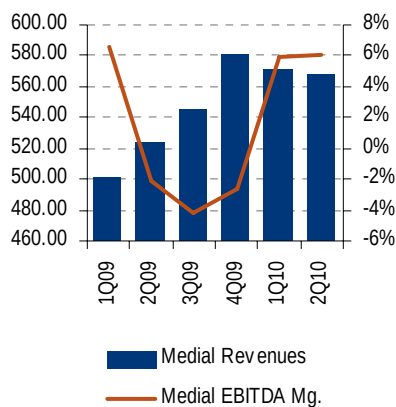


Source: BofAML Global Research, BrandAnalytics

State of the art IT supports pricing strategy

Amil has state of the art IT systems for health plan pricing in Brazil. Historically it has had an efficient and responsible pricing strategy, keeping MLRs under control. As a high-quality, high-ticket provider of health plans, it has enjoyed being a price-setter, leveraging on quality and branding, as its main population target is less price-sensitive than the lower income population.

Chart 60: Amil has been quickly turning around Medial's operations



Source: BofAML Global Research, company

M&A: accretive acquisitions and solid track-record

In 2H09 Amil completed its most important deal by acquiring Medial, its main competitor. This deal was a game-changer in the industry and created an improved competitive scenario. The acquisition was at an accretive valuation at 6.7x EV/EBITDA, and the restructuring process in place has been yielding solid results, again proving the company's solid track record in M&A. In the coming years we believe Amil will continue delivering acquisitions (though smaller, given the scarcity of larger players) at accretive multiples, potentially boosting the company's growth rate significantly beyond the organic 10-12%.

Risks: limited risks compared to other players

Amil faces the same sector risks as the rest of the payers, the most important being the regulatory overhang, but the impact on the company is relatively small compared to the impact on smaller operators. Since the company can profit from bargaining power against providers, the impact of regulatory changes such as the implementation of new mandatory procedures and the need for new provisions are diluted between payers and providers. Amil's strong brand allows for better pricing dynamic and lower customer churn. Moreover, the company's strong balance sheet makes it a relatively safe play in the payers' sector.

Price objective basis & risk

Amil Participacoes (AMPIF, C-1-7, R\$17.83)

Our price objective for Amil is R\$22.0, which is based on a DCF analysis that assumes a 12.4% WACC in nominal BRL, a 4.2% nominal terminal growth rate and a 20% liquidity discount. We derived our WACC using a 5.7 percent equity risk premium, a beta of 0.9, a BRL exchange rate risk premium of 180 bps, and a target capital structure of 100 percent of equity.

Risks to our price objective are (1) governance issues with related parties, (2) long-term risk if the company migrates attention to the lower-income segment, (3) dependency on government regulation and (4) an unexpected slowdown in Brazilian economy.

Ananguera (XANHF, C-1-9, R\$29.80)

Our R\$39 PO for AESA is based on a DCF assuming a 11.7% WACC and 4.2% nominal terminal growth, with a 10% liquidity discount. We expect the company to open 4 new campuses per year in 2010-2012e and acquire 6 campus/year in 2010-2012e.

Risks to our price objective are (1) regulatory risks, especially regarding the ProUni program, (2) failure to execute the acquisition and expansion strategy, (3) unexpected increases in delinquency rates.

DASA (DIAOF, C-1-7, R\$19.90)

Our R\$23 price objective for DASA is based on our DCF model, using a WACC of 10.7% and a 4.2% terminal growth rate. DASA's robust earnings growth is a result of (1) exposure to the rapidly growing healthcare market, (2) a successful consolidation strategy and recent management focus on improving business ROIC, and (3) a diversification of its business model that should boost revenues.

Risks to achieving our PO are (1) restructuring efforts could not lead to expected margin expansion, (2) future acquisitions could be less accretive, (3) competitive threats from payers and other labs, and (4) price pressure inherent in the sector.

Link to Definitions

Healthcare

Click [here](#) for definitions of commonly used terms.

Industrials

Click [here](#) for definitions of commonly used terms.

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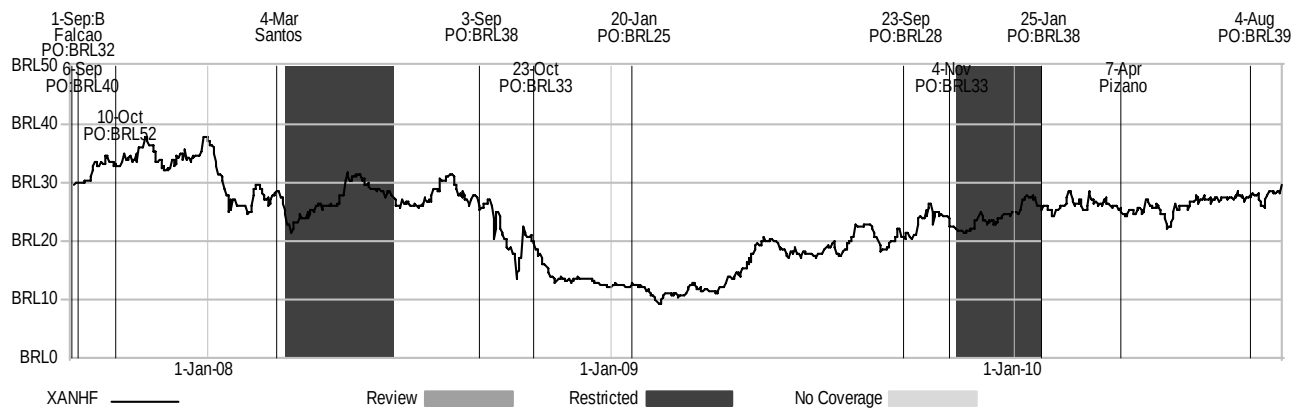
LatAm Food & Tobacco, Healthcare and Education Coverage Cluster

Investment rating	Company	BofAML ticker	Bloomberg symbol	Analyst
BUY				
	Amil Participacoes	AMPIF	AMIL3 BZ	Alexandre Pizano
	Anhanguera	XANHF	AEDU11 BZ	Alexandre Pizano
	Cremer	COQEF	CREM3 BZ	Alexandre Pizano
	DASA	DIAOF	DASA3 BZ	Alexandre Pizano
	Profarma - ON	XPFAF	PFRM3 BZ	Alexandre Pizano
NEUTRAL				
	Estacio Participacoes	ECPCF	ESTC3 BZ	Alexandre Pizano
	Kroton	XKROF	KROT11 BZ	Alexandre Pizano
UNDERPERFORM				
	Odontoprev	XODVF	ODPV3 BZ	Alexandre Pizano
	Souza Cruz	SOZCF	CRUZ3 BZ	Alexandre Pizano

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Important Disclosures

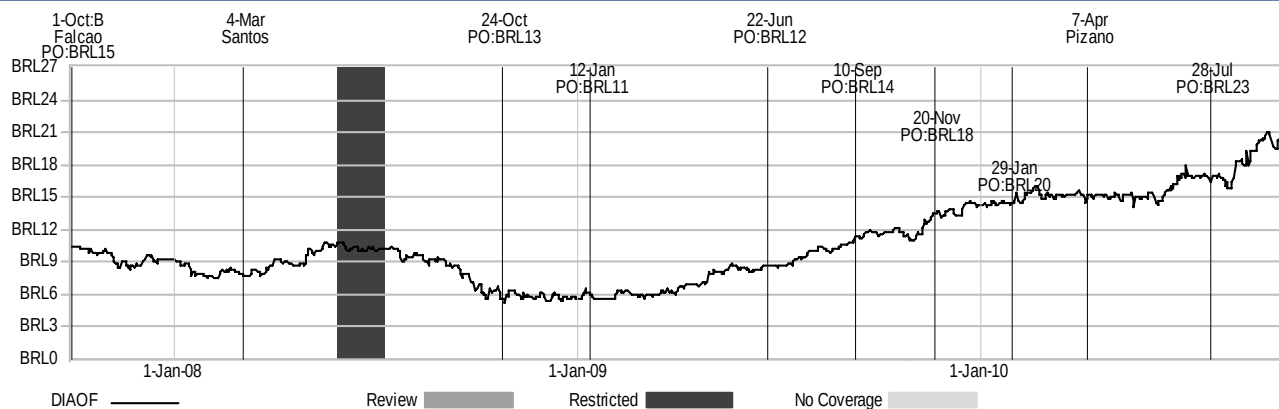
XANHF Price Chart



"Prior to May 31, 2008, the investment opinion system included Buy, Neutral and Sell. As of May 31, 2008, the investment opinion system includes Buy, Neutral and Underperform. Dark Grey shading indicates that a security is restricted with the opinion suspended. Light grey shading indicates that a security is under review with the opinion withdrawn. The current investment opinion key is contained at the end of the report. Chart is current as of September 30, 2010 or such later date as indicated.

BofAML price charts do not reflect analysts' coverage of the stock at prior firms. Historical price charts relating to companies covered as of December 31, 2008 by former Banc of America Securities LLC (BAS) analysts are available to BAS clients on the BAS website."

DIAOF Price Chart

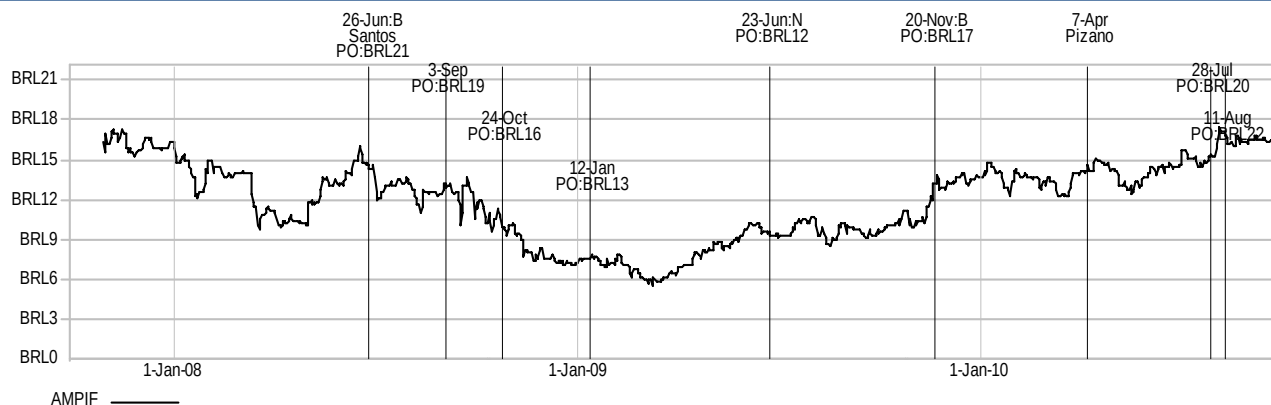


"Prior to May 31, 2008, the investment opinion system included Buy, Neutral and Sell. As of May 31, 2008, the investment opinion system includes Buy, Neutral and Underperform. Dark Grey shading indicates that a security is restricted with the opinion suspended. Light grey shading indicates that a security is under review with the opinion withdrawn. The current investment opinion key is contained at the end of the report. Chart is current as of September 30, 2010 or such later date as indicated.

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AMPIF Price Chart



B : Buy, N : Neutral, S : Sell, U : Underperform, PO : Price objective, NA : No longer valid, NR : No Rating

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Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	10	50.00%	Buy	5	50.00%
Neutral	7	35.00%	Neutral	2	28.57%
Sell	3	15.00%	Sell	2	66.67%

Investment Rating Distribution: Health Care Group (as of 01 Oct 2010)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	122	53.51%	Buy	52	45.61%
Neutral	55	24.12%	Neutral	31	59.62%
Sell	51	22.37%	Sell	16	32.00%

Investment Rating Distribution: Global Group (as of 01 Oct 2010)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	1948	54.31%	Buy	821	46.73%
Neutral	891	24.84%	Neutral	397	49.07%
Sell	748	20.85%	Sell	259	37.16%

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
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Underperform	N/A	≥ 20%

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