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Emerging and Growth-Leading economies

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Economic Analysis

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Emerging middle class in "fast-track" mode

The new paradigm for "emerging" people is worth keeping

The extension of middle classes entails economic and social benefits. A sustained high growth is behind impressive gains in purchasing power during the 21st century. However, what should be considered an achievement has also brought about some challenges. The most important one may be increasing inequality notwithstanding the reduction in poverty levels. A "healthy" leveraging and supply policies will also be key factors to extend current trends and avoid middle income traps.

An explosive process is already underway

Low-income and poor people stood at about 80% of the population in emerging countries during the 80s and 90s. Things started to change dramatically in 2000; in fact, by 2010, 660 million people had been added to the first stages of the middle class. In the same vein, medium and high middle classes more than doubled in a decade.

The middle-class boom will accelerate this decade

According to our forecasts, the ranges of lowest income will keep on losing share in the distribution, reducing to 40% in 2020 from 60% in 2010. This will be reflected in a vast transition of population to low and medium middle classes, adding 400 million people more in each segment. Wealthier citizens will also rise considerably.

Middle classes spreading very fast in Asia: now China then India

Middle classes increased in East Asia up to 900 million people in 2010. The boom is leaded by China, where the process is entering a new phase: wealthier segments are taking the lead this decade. Two thirds of the new affluent in emerging countries will be Chinese. In South Asia, transition out of poverty has been predominant so far. India is also giving birth to an incipient medium middle class.

People becoming wealthier in Latin America, Russia and Turkey

The recovery from the crises in the 1980s and 1990s has been impressive. Middle classes in Latin America increased their share to 70% in 2010 and we expect this shift to continue although concentrating more on the medium-high segment. Peru is the best performer in the region. In Emerging Europe, the share of people in the medium middle class to the affluent range will climb by 41pp in Russia and 27pp in Turkey between 2000 and 2020.

More value in consumption and changing patterns

The booming new middle class in the emerging world implies that discretionary expenditure will increase much more than food consumption. Transport, leisure, personal products and financial services will be among the most benefited. China is already undergoing the most relevant transition, mimicking rapid development of Korea some decades ago. In Latin America, Peru and Colombia aspire to consolidate medium-income condition, with positive implications in non-basic expenditure. Mexico and Turkey will start the 'wealthy transition' shortly after 2020.

The extension of middle classes fosters financial inclusion

On the one hand, basic needs are covered more loosely, increasing ability to save. On the other hand, the income/expenditure life-cycle is eased through higher and regular income, providing collateral and leading the way to access financing and financial deepening extension. The amount of intermediated savings will increase due to both factors.

An explosive process already underway

Growth in emerging markets was already high in the 90s, but macroeconomic reforms after severe crisis turned it also to be quite stable during the last 15 years. This new paradigm is behind a substantial reduction not only in poverty rates but also in the number of poor people, especially in the East Asian region[1]. The increase of purchasing power is allowing at the same time the birth of extensive middle classes in the emerging world; a boom in low-income countries and a progressive widening of wealthier classes in more developed economies.

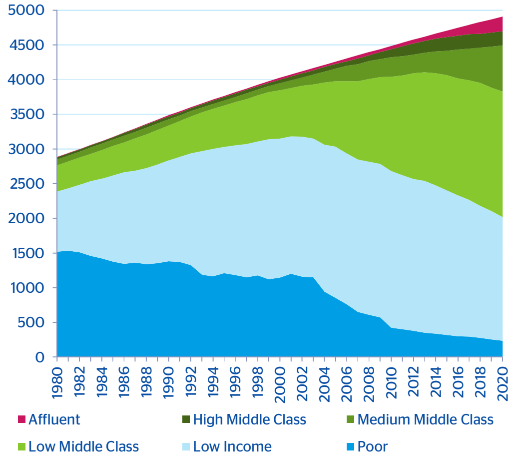
In order to assess the size, dynamics and implications of booming middle classes, we present here our own estimations and projections of population according to income ranges (see the box below for definitions and the annex for complete methodological details and alternative scenarios).

Our main global findings are the following:

- The process underwent a "slow-motion" phase during the 80s and 90s. Low-income and poor people steadily represented around 80% of the population in emerging countries (Charts 2&4). There was a progressive transition out of very low readings, but in general middle classes remain quite stable, with a marginal share of wealthy citizens. Only demographics allowed an increase in absolute numbers for all categories, including the generation of around 360 million 'middle classers' in the emerging world (Charts 1&3).
- The "fast-track" mode started at the beginning of this century, leading to a radical different picture today. Not only the share of poor people is in free-fall, but also the share of population in the low-income range, although in the latter case the number of people kept on rising. The entry of citizens in the early stages of middle class represented the bulk of population increase between 2000 and 2010, adding around 660 million people to this income range and pushing up its distribution share by 13 percentage points during this period. Relevant progress was also recorded for medium and high middle classes, more than doubling in a decade and reaching together almost 400 million people in 2010.

Chart 1

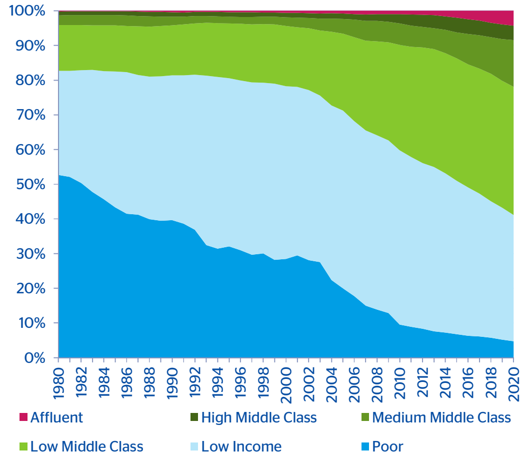
Population in Emerging Economies by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 2

Distribution of population in Emerging Economies by range of GDP per capita (in %)



Source: BBVA Research

[1] "Inclusive growth in emerging markets? Rapid poverty reduction but increasing inequality?", EAGLEs Economic Watch, BBVA Research, January 2013: http://www.bbvaresearch.com/KETD/fbin/mult/130107_EW_EAGLEs_Inclusive_Growth_tcm348-364126.pdf?ts=912013

Box: a quick definition of middle classes

The reference variable is GDP per capita measured in PPP-adjusted 2010 USD.
Income ranges are defined homogenously for all countries:

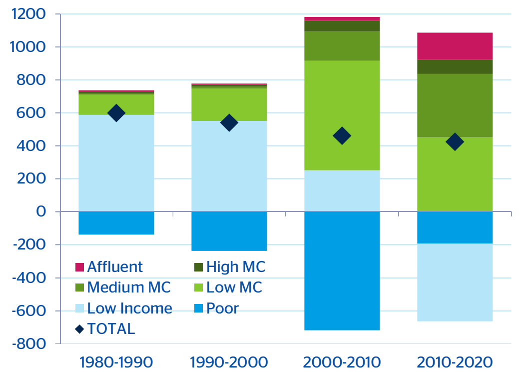
- Poor: up to 1,000 USD per year)
- Low income: 1,000-5,000 USD
- Low middle class: 5,000-15,000 USD
- Medium middle class: 15,000-25,000 USD
- High middle class: 25,000 to 40,000 USD
- Affluent: over 40,000 USD

Countries in the sample are grouped as follows:

- East Asia: China, Indonesia, Korea, Malaysia, the Philippines, Thailand and Vietnam.
- South Asia: India, Bangladesh and Pakistan.
- Latin America: Brazil, Mexico, Argentina, Chile, Colombia and Peru.
- Emerging Europe: Russia, Turkey, Poland and Ukraine.
- Africa: Egypt, Nigeria and South Africa.

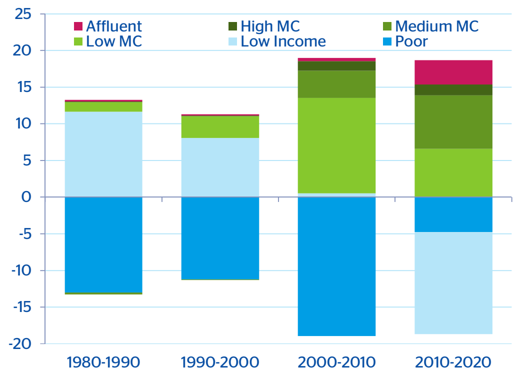
- Wealthier segments are already gaining prominence and we expect this process to accelerate in coming years. According to our forecasts, the ranges of lowest income will keep on losing share in the distribution, reducing to 40% in 2020 from almost 60% at present. Unlike the previous decade, the number of people with low income will contract dramatically and with higher intensity than the poor range. This will be reflected in a vast transition of population to middle classes, almost equally to the low and medium segment with around 400 million people more in each case. Wealthier citizens will also rise considerably, with two thirds of the new affluent living in China.

Chart 3
Population change in Emerging Economies by decade: contribution by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 4
Population change in Emerging Economies by decade: contribution by range of GDP per capita (percentage points; net balance = 0)



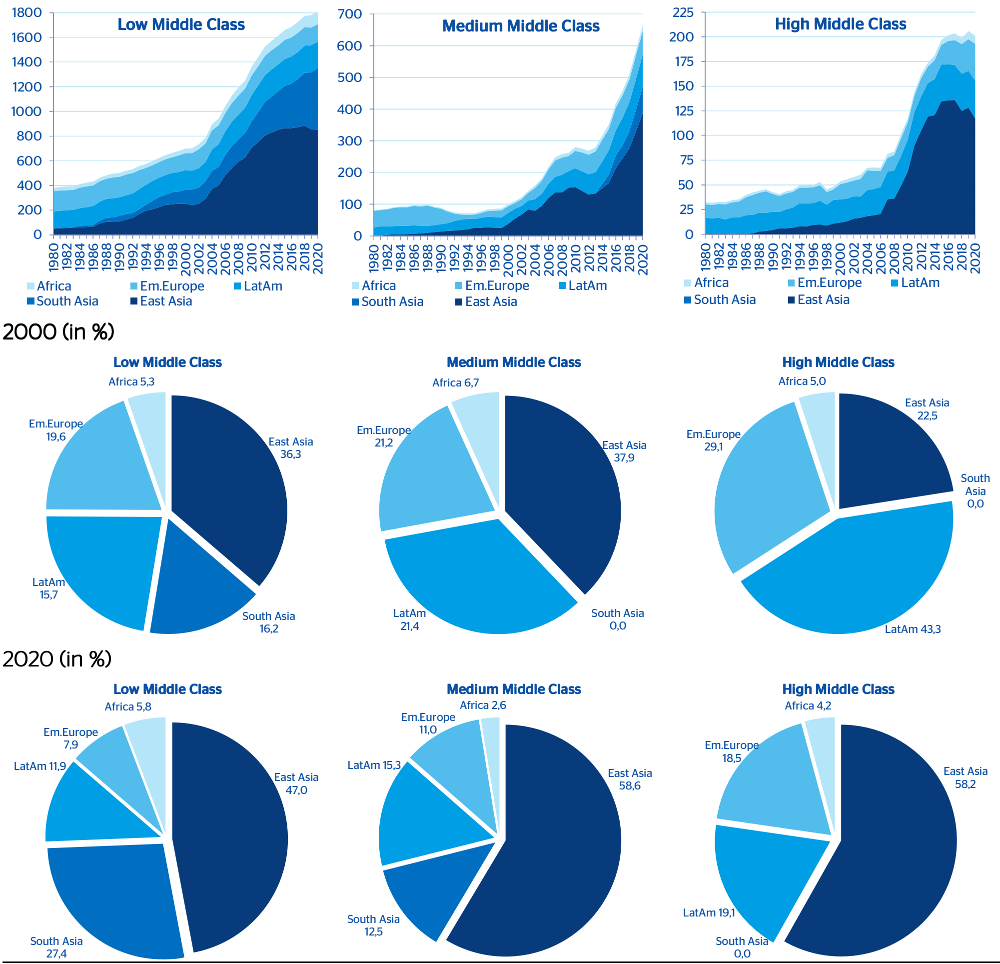
Source: BBVA Research

- The role of Asia in spreading middle classes is remarkable (Charts 5). In 2000 Latin America and Emerging Europe were dominant in both medium and high middle classes, while on par with East Asia in the low segment. Ten years later, middle classes in East Asia represented more than 50% in the three segments. We expect the dominance to intensify up to 2020, with South Asia becoming second power in low middle class and reaching the relevance of Latin America and Emerging Europe in the medium segment. We will have to wait a bit longer to see the South Asian region scaling to wealthier ranges, while Africa shows an stable contribution to low and high middle classes and a decreasing one for the medium segment[2].

[2] The aggregate hides a quite heterogeneous picture in the sample, with wealthier South Africa enjoying a wide low middle class, Egyptians transitioning out of the low-income range and Nigeria struggling with still significant poverty.

Charts 5
Regional distribution of emerging middle classes

Population (mn)

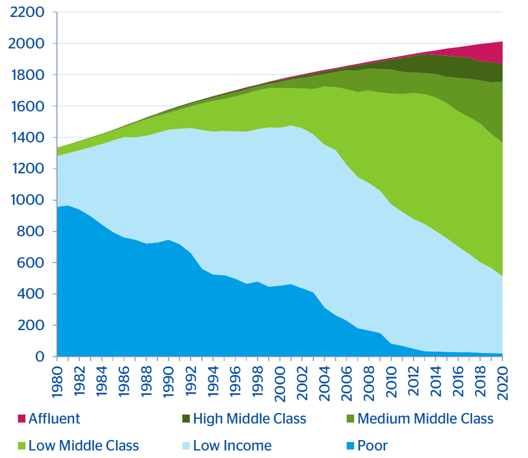


Source: BBVA Research

Middle classes spreading very fast in Asia: now China then India

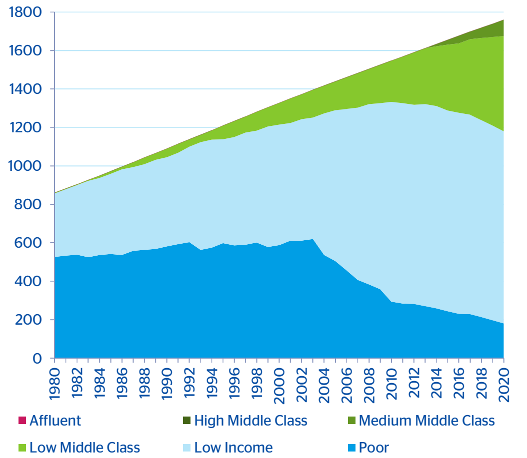
Middle classes were almost inexistent in developing Asia in 1980 and the picture had changed little in 1990 and even in 2000 (Charts 6&7), with the exception of Korea and to a lesser extent Malaysia and Thailand. The real boom started with the new century, leaded by China (Chart 8), but followed by the rest of East Asia. Middle classes increased their share in this area to almost 50% in 2010 from less than 20% in 2000, including more than 900 million people at the end of the decade. The starting point in South Asia was much lower in terms of income per capita and therefore a transition out of poverty has been predominant so far. Anyway, progress hasn't been negligible, especially in India (Chart 9), where in 2010 close to 200 million people (or a 15% of total population) belonged to the low middle class compared with less than 100 million in 2000 (a 9%).

Chart 6
Population in East Asia by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 7
Population in South Asia by range of GDP per capita (millions of people)

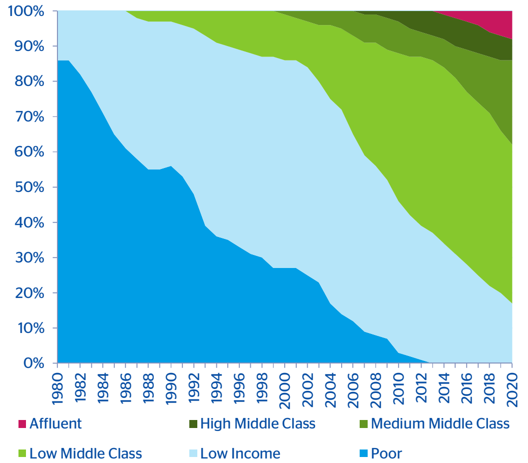


Source: BBVA Research

Our projections show that middle classes will keep on gaining share both in East and South Asia. Two distinctive features must be highlighted:

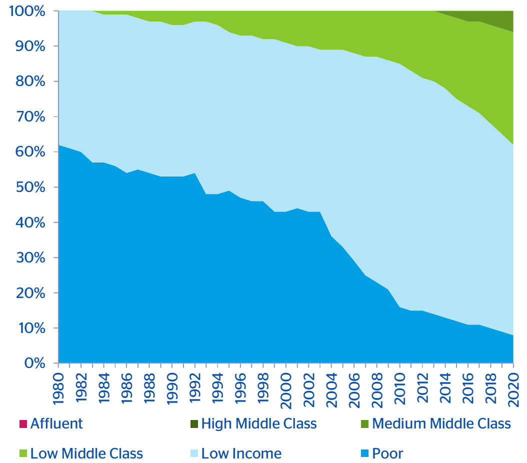
- The process is entering a new phase in China. Wealthier segments are already taking the lead, bringing the share of medium and high middle class to 30% in 2020 from 12% in 2010. Furthermore, affluent citizens are expected to rise to over 100 million people by the end of this decade, becoming one of the most populated "countries" in the world.
- India has started an unprecedented decrease in the number of people living in poverty or with low incomes. At the same time, the low middle class will more than double this decade and a medium middle class is born and approaching 100 million in 2020. India seems to be drawing now the pattern of China with a 12 to 15-year lag (real GDP per capita is expected to reach in 2020 Chinese levels from 2006-07).

Chart 8
Population in China by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 9
Distribution of population in India by range of GDP per capita (in %)



Source: BBVA Research

People becoming wealthier in Latin America, Russia and Turkey

Middle classes have a stronger background in Latin America and Emerging Europe. These areas are therefore a good reference to test the devastating consequences of crises in the purchasing power of population, as well as to contrast these negative episodes with the blessings of stable and high growth during the last decade (Charts 10, 12 and 13).

As a result of the Latin American debt crises in the 80s, the share of the low-income segment increased by 9pp between 1980 and 1991 at the expense of low and medium middle classes. The impact of successive crises in the second half of the 90s and the beginning of the new century was even more intense. The middle classes shrank their share by 12pp between 1993 and 2003, while inequality climbed significantly with an increasing number of both poor and affluent citizens. A similar pattern was followed in Turkey during the same decade. Much more dramatic was the aftermath of the dissolution of the Union of Soviet Socialist Republics (USSR) in 1991. In the case of Russia, the number of people in the low-income range increased to close to 60 million in 1994 from a marginal share in 1990, while the medium middle class almost disappeared compared to more than 50 million people at the end of the 80s.

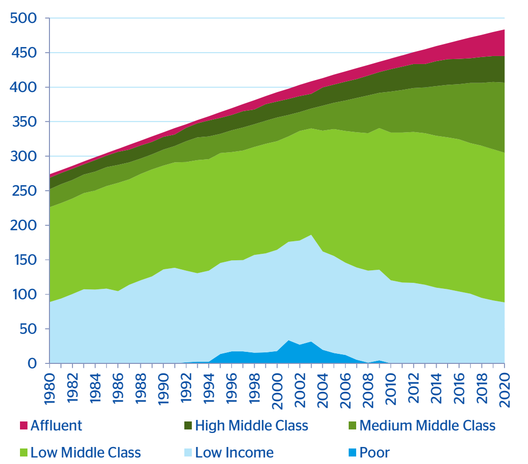
As mentioned before, the turning point was policy reaction to these crises, the foundation of subsequent rapid and stable growth. The new century has witnessed a general improvement of purchasing power for citizens in Latin America and Emerging Europe.

Countries in Latin America recovered quickly the income distribution previous to turmoil in the 90s and from the mid-00s extended gains. Almost 70 million people transitioned from poverty and the low-income range to middle classes between 2003 and 2010, increasing the share of the latter to 70% from 50% during this period. We expect this shift to continue up to 2020, although more focused on increasing wealthier segments, from medium and high middle classes (almost 50 million more with respect to 2010) to affluent citizens (adding more than 20 million).

On a country basis there are also remarkable examples (Chart 11):

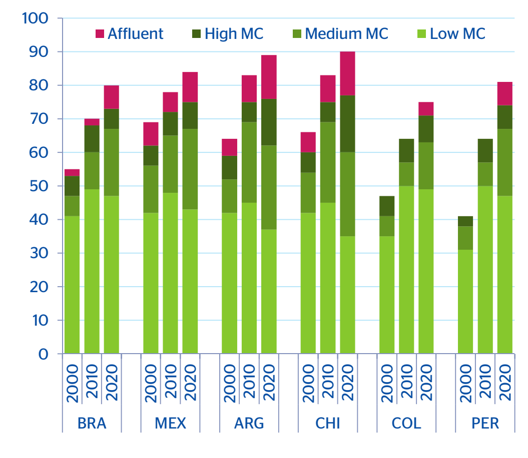
- The process is impressive in Peru and to a lesser extent in Colombia, the economies with the lowest real GDP per capita at present. Both countries will widen further their medium middle class this decade and will generate a brand new affluent segment.
- Argentina and Chile made an outstanding progress in the 00s, quite relevant in the former case leaving behind a severe crisis, and according to forecasts they will be extending gains now to high middle class and affluent citizens.
- Brazil and Mexico, as the two most populated countries in the region, are expected to boost medium middle class across Latin America, reaching 40 and 30 million respectively out of an aggregate of 100 million in 2020.

Chart 10
Population in Latin America by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 11
Share of middle classes and affluent in Latin American countries (2000, 2010 and 2020) (in %)

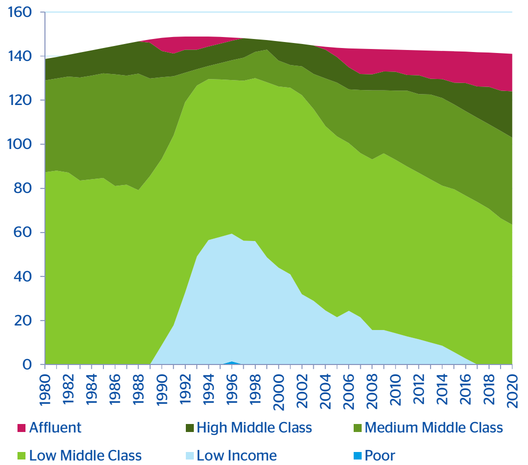


Source: BBVA Research

Emerging Europe has also witnessed outstanding changes in the speed and intensity of the process:

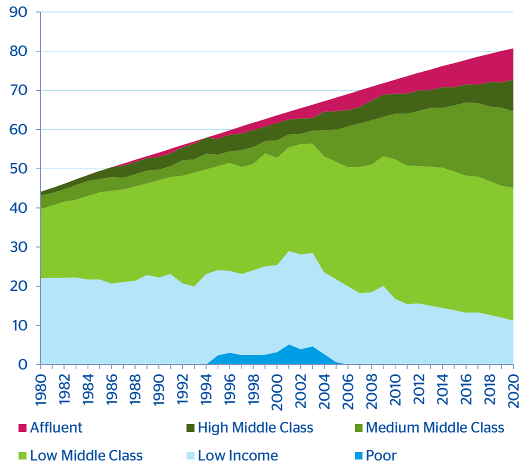
- According to our forecasts, the share of people in the medium middle class to the affluent range will have climbed by 41pp in Russia between 2000 and 2020. The situation could be seen as a 'déjà vu', although socioeconomic conditions are quite different today than in the USSR times and the wealthier segments have a more relevant role at present.
- In Turkey the change of the wealthier segment are expected to be also sizeable (27pp). As we have seen for other regions, a middle class boom is unprecedented. Population was concentrated up to low middle class between 1980 and 2000. This relatively stable picture is changing dramatically and we project that 36 million people out of a total population of 81 million by 2020 will have a purchasing power within or above the medium middle class.

Chart 12
Population in Russia by range of GDP per capita (millions of people)



Source: BBVA Research

Chart 13
Population in Turkey by range of GDP per capita (millions of people)



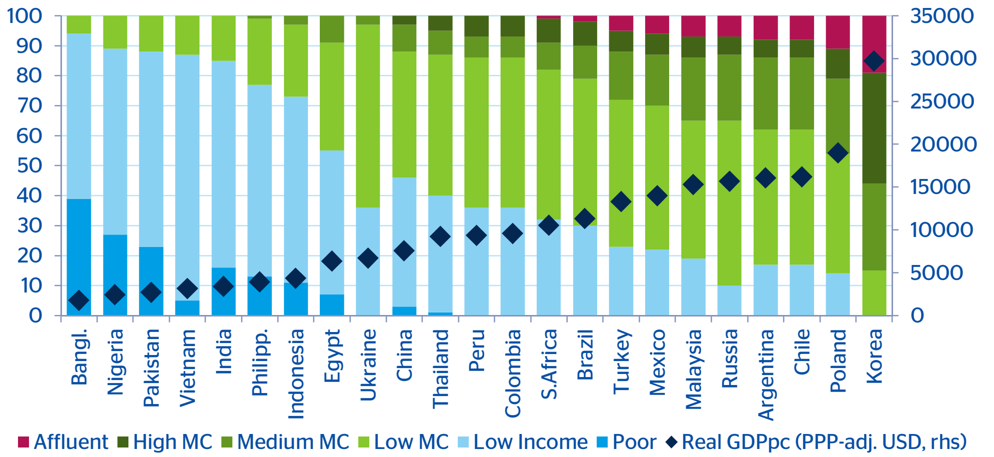
Source: BBVA Research

Middle classes are changing consumption patterns

The extension of middle classes is reflecting a general increase in the purchasing power of citizens, implying not only that the aggregate value of consumption is growing but also expenditure patterns.

To analyze this link we use as a reference the level of real GDP per capita as it implicitly represents a distribution of income classes, which is very heterogeneous among countries in the sample (Chart 14). Differences are significant between poorer countries in Africa and South Asia and more developed economies like Poland and Korea. On the expenditure side, although we complement the analysis with other criteria, our starting point is the Classification of Individual Consumption by Purpose (COICOP), which group products in 12 categories.

Chart 14
Share of income ranges by country (2010): ranked by real GDP per capita (from lower to higher)



Source: BBVA Research

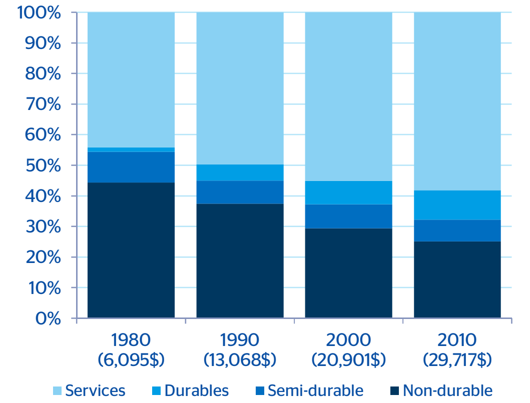
Korea is a very good case study to test the effects of increasing income on consumption patterns (Charts 15&16). Available data for the last decades allow analyzing changes on a continuous basis. Besides, the country experienced a very rapid development transition, increasing five-fold its income per capita between 1980 and 2010. Three decades ago, Koreans were spending most of the income in necessities or semi-necessities[3], such as food or housing services, while today, discretionary expenditure has taken the lead with an increase share of durable goods and other services like communications or leisure.

The case of Korea proves to be fairly consistent with a short of augmented Engel's law[4]. However, some precisions have to be made before trying to infer lessons for what lies ahead for emerging economies. Data for OECD countries between 1980 and 2010 confirm that we have to take into account factors beyond income elasticity:

- Country effects: many factors condition different shares of product expenditure and may lead to divergences between countries with a similar income level; some examples are the significant weight of private health in the US, the higher share of housing services in the Nordic countries or the much larger expenditure in education in Korea.
- Time effects: here we include structural changes such as demographics (affecting health expenditure), preference for leisure (recreation&culture good and services), the generation of new products (communications) and social habits (tobacco).

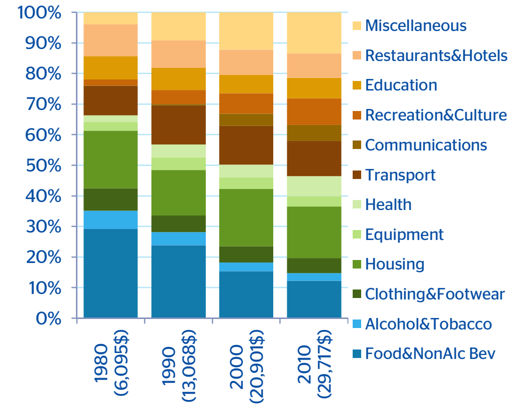
[3] These broad categories are for example used "Meet the Chinese consumer of 2020", McKinsey Quarterly, March 2012. http://www.mckinseychina.com/wp-content/uploads/2012/03/mckinsey-meet-the-2020-consumer.pdf
[4] According to original Engel's law, the share of food in the consumption basket falls as the income rises, but a changing elasticity applies also for other products.

Chart 15
Consumption patterns in Korea (1980-2010): special groupings
(real GDP per capita in brackets in PPP-adj. USD)



Source: BBVA Research

Chart 16
Consumption patterns in Korea (1980-2010): COICOP subgroups
(real GDP per capita in brackets in PPP-adj. USD)



Source: BBVA Research and Haver

Unfortunately, continuous data is not available to assess changes in consumption patterns beyond OECD countries. Therefore, our starting point is the situation at present (Chart 17). Despite country effects, some general considerations can be made for the cross-section[5] [6] (Chart 18):

- Countries with low income per capita (and therefore a limited extension of middle classes) present a significant share of food expenditure: an average of 45% for seven economies with a real GDP per capita between 2,000 and 7,000 USD. On the contrary, the share is lower than 30% for twelve countries between 9,000 and 19,000 USD (where low middle classes are predominant and the medium segment is rising). In Korea, with almost 30,000 USD and wealthier income segments, the share plunges to 12% (the OECD average).
- Divergences in basic consumption are reflected in divergences in discretionary expenditure. The seven countries with the lowest income per capita have an average slightly above 20% in contrast with almost 40% in the more developed group, while in Korea is above 50%, in the upper range of the OECD benchmark. Among discretionary expenditure:
  - The share of transport climbs the most between groups[7], doubling from around 6% in low-income economies to 12% in the medium segment, reducing slightly when transitioning to wealthier OECD standards. A similar pattern is observed for communications, jumping first from 2-3% to 4-5% and then falling somewhat.
  - Three categories increase their share in both income transitions, keeping a similar pace in the case of restaurants&hotels and accelerating in recreation&culture and the miscellaneous group (personal care and effects, financial services). The three products sum up to 8% in the least developed group, 16% in the medium one and almost 30% in OECD economies.
  - According to data in the sample, expenditure in education progressively loses weight from 4% to 1-2%.
- Regarding other products, shifts are not that significant, although is worth highlighting:
  - Clothing&footwear decrease their consumption share progressively but with moderation (from 6% to 5%).
  - Expenditure share of alcohol&tobacco and housing equipment jump in the first transition from low to middle-income by around 1pp to 4% and 6% respectively, remaining stable afterwards.

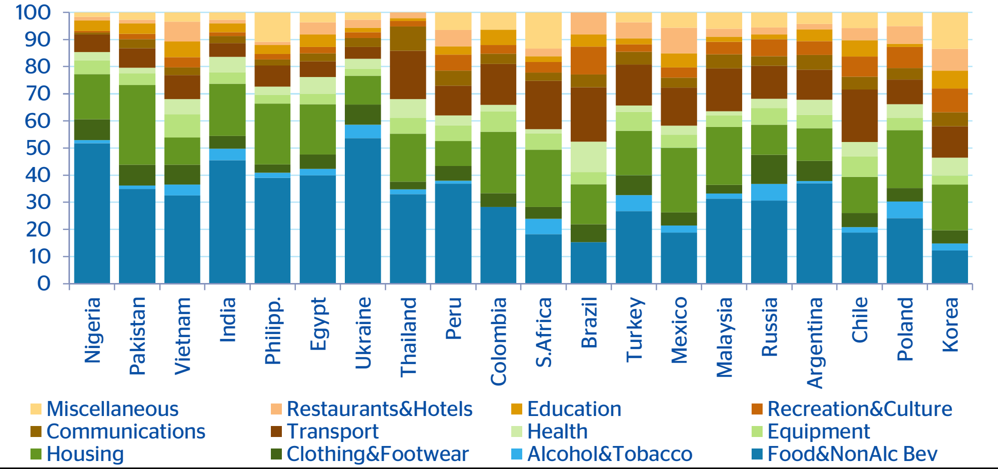
[5] Results for the transition to wealthier income segments are fairly consistent with estimations for income elasticity in OECD countries using panel data in the period between 1980 and 2010, which includes both country and time effects.
[6] Data is not available for Bangladesh, China and Indonesia.
[7] Transport includes the purchase of vehicles and operation expenses (parts, maintenance and fuel), as well as transport services. On car demand determinants: "Emerging markets key for the automobile sector", EAGLEs EW, October 2012. http://www.bbvaresearch.com/KETD/fbin/mult/121010_EAGLEs_AutoProjections_EN_tcm348-359255.pdf?ts=1712013

- Reversely, the share of housing doesn't change until the second transition, when it rises from around 18% to 22%.
- Average health expenditure appears quite stable among groups once the US is taken out of the OECD aggregate, with a share of 4%.

According to this analysis, which are the countries worth looking for a transition in consumption patterns? (Chart 19):

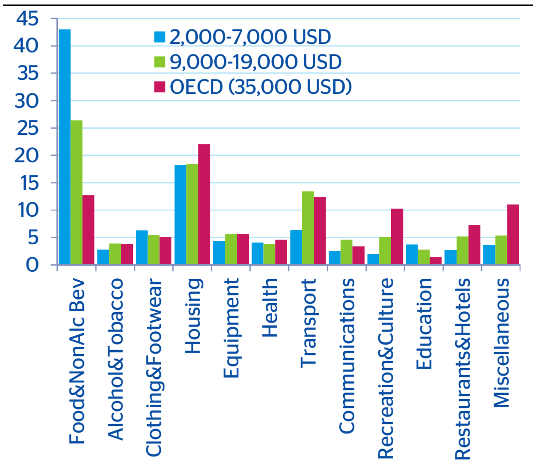
- China is expected to increase its real GDP per capita from around 7,500 USD in 2010 to almost 16,000 USD in 2020, completing therefore the transition from a low to a middle income country.
- In the baseline scenario, Egypt and Ukraine are in the way out of low income levels, while Thailand, Peru and Colombia are to consolidate the process during this decade. The time for India and Indonesia will probably arrive after 2020.
- Up to five countries are expected to start transition towards the wealthier group this decade, although in 2020 they will still be below today's levels in Korea: Malaysia, Russia, Argentina, Chile and Poland. Turkey and Mexico will follow suit some years later.

Chart 17
Consumption patterns in emerging economies ranked by real GDP per capita (2012 CPI shares)*



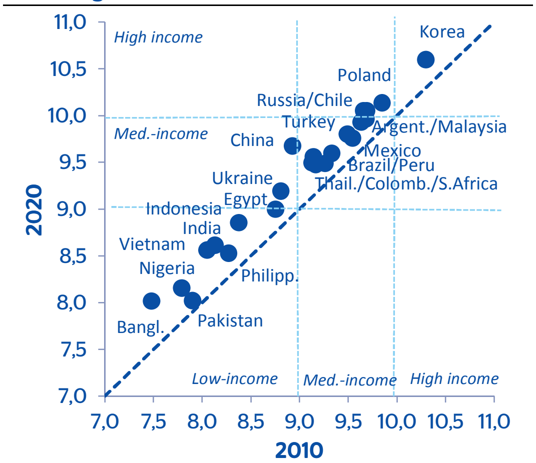
*Exact or very approximate COICOP correspondence for Nigeria, Pakistan, the Philippines, Ukraine, South Africa, Turkey, Mexico, Malaysia, Russia, Chile, Poland and Korea; some adjustments have been made to the other countries; no data available for Bangladesh, China and Indonesia
Source: BBVA Research and Haver

Chart 18
Consumption patterns by country groups (2010)



Source: BBVA Research and Haver

Chart 19
Real GDP per capita transition between 2010 and 2020 (log of USD)



Source: BBVA Research and Haver

A new paradigm for "emerging" people: relevance and challenges ahead

A sustained high growth is behind impressive gains in purchasing power during the 21st century. The implied extension of middle classes entails economic and social benefits:

- A higher purchasing power allows covering basic needs more loosely, increasing households' welfare and their ability to save and spend in education, key to step out of poverty traps.
- The income/expenditure life-cycle is eased through higher revenues; regular income is enough to provide collateral and leads the way to access to finance, with very relevant implications for consumer lending, in particular auto financing but also mortgages. Thus providing the basis for an acceleration of financial deepening.
- A growing share of middle classes increases the amount of intermediated savings due to both higher aggregated savings and to financial inclusion; this ideally provides a larger base to finance productive and infrastructure investment without increasing external financing pressures.
- Higher earnings for a wider population base should reduce informality, increasing tax revenues and giving fiscal policies more room to support long-term growth and well-targeted social measures.
- An extension of middle classes provides economies of scale to produce more consumer goods, supporting thereby the production of such goods which tend to be labor abundant and, thus, very relevant for these countries.
- Consumption patterns change with higher income, reducing the share allocated to basic needs and increasing expenditure in other goods and services with more value added; competition is therefore extended to inter-industry and value chain levels.
- People in middle classes have education opportunities, time for leisure and income for the future, giving social cohesion and political stability to economies[8].

Middle classes are therefore quite relevant and hence worth keeping. Making the transition from a low-income economy to a country with an extensive middle class entails a big challenge, avoiding the so-called "middle-income trap"[9]:

- At first stages of development, countries exploit their low-wage competitive advantage to expand activity and create jobs in labor intensive sectors. However, as long as production gets more expensive, economies need higher capital and labor skills to move to higher added-value products.
- Beyond this traditional approach, there are other ways through which nations could fail from their middle-income condition:
    - The first one is related to inequality. Beyond growth-enhancing policies, the progress should be also supported by a balance between efficiency and inclusion. Excessive inequality could be quite damaging for growth[10].
    - A second risk is debt-driven growth. Financial deepening is positive as it favors the income/expenditure life-cycle. However, demand policies must be accompanied by structural or supply measures to avoid bottlenecks. A very relevant one is excessive leverage. As the current global crisis is showing, deleveraging processes are long and painful for growth, with very negative effects to middle-classes.

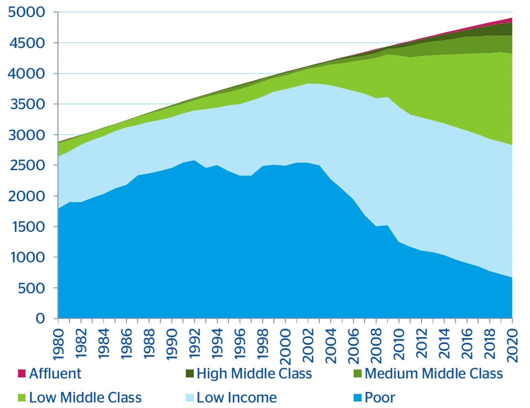
[8] On democracy and social views from middle classes: "The Global Middle Class: View on Democracy, Religion, Values and Life Satisfaction in Emerging Nations", The Pew Global Attitudes Project, Pew Research Center, 2009. http://www.pewglobal.org/files/2009/02/Global-middle-class-FINAL.pdf
[9] "Avoiding Middle-Income Growth Traps", World Bank Economic Premise N98, November 2012. http://siteresources.worldbank.org/EXTPREMNET/Resources/EP98.pdf
[10] See reference in footnote 1.

Annex: Our approach to measuring middle classes

Despite the common knowledge that middle classes are convenient for economic and social progress, we are far from consensus identifying a quantitative definition:

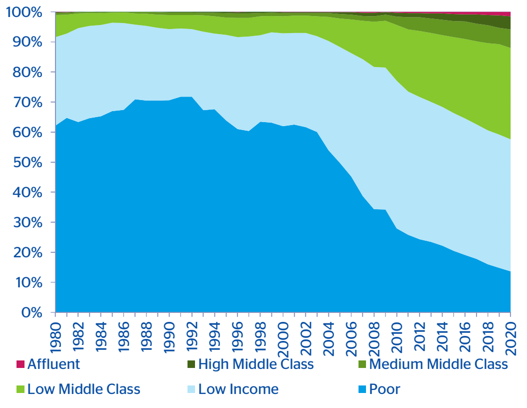
- Reference variable: A lot of discussion is on the table about the convenience of using income or expenditure variables. For the sake of homogeneity, conditional on data availability and betting on an easy and comprehensive methodology, we use GDP per capita as the reference variable. We give priority to national rather than international purchasing power and we therefore use PPP-adjusted figures. Companies focused on exports or offering international services would find more suitable not to adjust income by domestic prices and consider exchange rates as a more relevant variable (unadjusted results in Chart.s A1&A2).
- Ranges: They vary considerably among literature and ultimately definition relies upon the purpose of the analysis[11]. Our target is a macroeconomic view on the global and regional trends, always having in mind the EAGLEs[12] horizon of the next 10 years. We therefore don't consider we need to be that precise when specifying ranges. These are defined homogenously for all countries:
  - Poor[13], up to 1,000 USD per year.
  - Low income, from 1,000 to 5,000 USD.
  - Middle class, between 5,000 and 40,000 USD, divided into three subgroups:
    - Low middle class, from 5,000 to 15,000 USD.
    - Medium middle class, from 15,000 to 25,000 USD.
    - High middle class, from 25,000 to 40,000 USD.
  - Affluent, over 40,000 USD.

Chart A1
Population by income range (millions of people): based on real USD not adjusted by PPP



Source: BBVA Research

Chart A2
Distribution of population by income range (in %): based on real USD not adjusted by PPP



Source: BBVA Research

Further details on our methodology:

- Data description and sources: We use PPP-adjusted real GDP per capita measured in 2010 dollars. GDP values and projections correspond to the October 2012 edition of the IMF/WEO database, while population estimations and forecasts are from the 2010 revision of the UN

[11] A global reference is "The Emerging Middle Class in Developing Countries", Homi Kharas, OECD Development Centre Working Paper No. 285, 2010. http://www.oecd.org/dev/44457738.pdf. Interesting regional approaches are also available, like "The Rise of Asia's Middle Class", Special Chapter in Key Indicators for Asia and the Pacific 2010, Asian Development Bank (http://www.adb.org/sites/default/files/KI/2010/KI2010-Special-Chapter.pdf) and "Latin American Middle Classes: The Distance between Perception and Reality", Lora, E. and Fajardo, J., IDB Working Paper No.275, 2011 (http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=36559121)

[12] Read more about the EAGLEs and Nest countries at http://www.bbvaresearch.com/KETD/ketd/ing/nav/geograficas/eagles/index.jsp

[13] The definition of poor diverges from the one in our previous research on poverty and inclusive growth. In that case we used international measures defined by the World Bank on daily consumption. Relative and absolute differences arise as the income range here used seems to be more restrictive. However, it's only a matter of scale, with more people classified as low-income population rather than poor citizens. Trends on middle classes are not affected.

World Population Prospects. Regarding income distributions, our starting point is the information available in the WDI/World Bank, which includes the two top and bottom deciles and all quintiles. As data are not continuous we interpolate missing data. Projections until 2020 keep distributions constant from the latest observation.

- Geographic sample: Countries correspond to EAGLEs and Nest members and regional groupings are the following (data not available for Taiwan):
  - East Asia: China, Indonesia, Korea, Malaysia, the Philippines, Thailand and Vietnam.
  - South Asia: India, Bangladesh and Pakistan.
  - Latin America: Brazil, Mexico, Argentina, Chile, Colombia and Peru.
  - Emerging Europe: Russia, Turkey, Poland and Ukraine.
  - Africa: Egypt, Nigeria and South Africa.
- Estimation procedure: We first distribute GDP into available deciles and quintiles, calculating a reference per capita figure in each case. We then match this reference to the percentile accumulating 60% of the income in the corresponding quantile, except for the top two deciles, for which the accumulation share is 70%. We then linearly interpolate these references to obtain a GDP per capita reference for each percentile. Finally, we group population according to income ranges and using as a unit a 1% of total population.

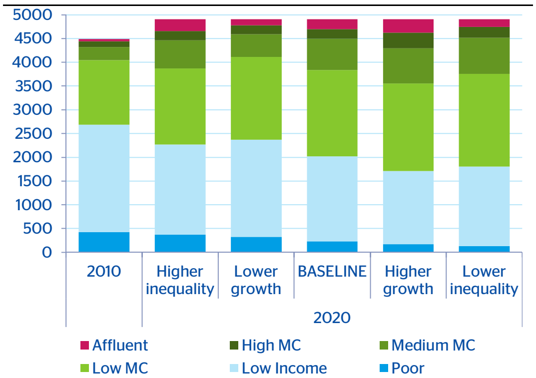
In order to test robustness and uncertainty of results, we carry out four alternative scenarios for the period between 2010 and 2020 (Charts A1&A2):

- Two alternative scenarios related to changes in the growth of real GDP per capita:
  - Lower growth: all countries increase purchasing power parity at a rate 2 percentage points lower than in the baseline scenario.
  - Higher growth: growth is 2 percentage points higher than in the baseline scenario.
- Two alternative scenarios related to a change in the income distribution:
  - Higher inequality: for each country we consider the relative worsening in China during the 90s; i.e. the top decile gaining 5pp share in a decade and the lowest 60% losing 6pp.
  - Lower inequality: we apply the relative improvement in Brazil during the 00s. In this case the top decile loses 5pp share and the central 60% of the distribution gains the piece.

In general terms, results show that changes in inequality have a similar dramatic effect in income classes than shifts in growth rates. For middle classes, alternative 'higher growth' and 'lower inequality' scenarios imply a similar outcome, adding around 240 million people more in a decade than the baseline one. The same happens on the other way for 'lower growth' and 'higher inequality' scenarios, forecasting 280 million people less in this segment by 2020.

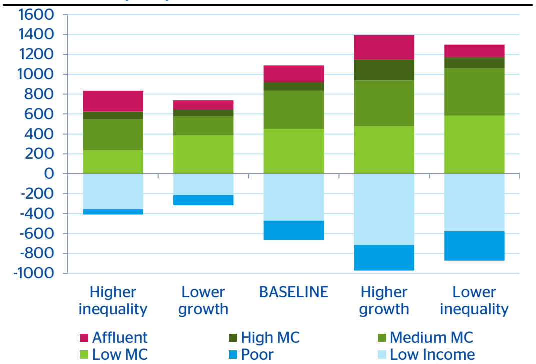
However, there are some distribution effects worth highlighting, with implications for consumption industries. For example, affluent citizens are expected to increase significantly in absolute terms under the 'higher inequality' scenario, adding 40 million more than baseline and providing a kind of "inequality premium" for demand of luxury goods.

Chart A3
Population by income range (millions of people): scenarios for 2020



Source: BBVA Research

Chart A4
Population change 2010-2020 by income range of (millions of people): scenarios



Source: BBVA Research

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