The unfeasibility of pay-as-you-go pension systems in countries that still enjoy a demographic dividend: The case for Colombia

Santiago Montenegro¹  Jorge Llano²  
Karim Fajury³  Maria Camila García⁴

Abstract

This article argues that in emergent countries such as Colombia, the combination of the demographic transition process and the country’s high levels of labor market informality makes pay-as-you-go pension systems unfeasible. In theory, Colombia’s population is still relatively young and, as such, enjoys a so-called demographic dividend. Given Colombia’s demographic composition, it still has a relatively high ratio of economically active individuals to individuals 65 years old or over. This, at least in principle, would mean that workers’ contributions could finance the pensions of the retired. Such a ratio, currently close to seven, is what enables the so-called intergenerational solidarity of the young with their elders. Unfortunately, this solidarity is neither sustainable in the future nor feasible in the present should a country expect reasonable levels of pension coverage, given that the ratio of workers to elders will fall to four by around 2040 and to two by around the year 2060. But what is really critical for a PAYG system is that the informality of Colombia’s labor market reduces the ratio from seven to two already today. In such circumstances, even if strong measures were taken now to radically increase labor market formality, by the time these measures have some kind of effect in Colombia, the ratio between the active and aging population will have fallen significantly and Colombia will most probably have lost its demographic dividend. Those young workers who are currently supporting the elderly would therefore have no one to support them as they age.

JEL Classification Code: H55 H75 J11 J21 J32 J46

Keywords: pensions, demography, labor market, informal labor markets, individual accounts, Pay-As-You-Go regimes

¹ President of the Colombian Association of Pension Fund Administrators and Severance Payments, Asofondos. smontenegro@asofondos.org.co  
² Director of Economic Studies, Asofondos. jllano@asofondos.org.co  
³ Economics PhD student at the University of Southern California. fajury@usc.edu  
⁴ Analyst, Asofondos. cgarcia@asofondos.org.co
La inviabilidad de los regímenes de pensiones de reparto en países que aún gozan del dividendo poblacional: el caso de Colombia

Santiago Montenegro¹

Karim Fajury³

Jorge Llano²

Maria Camila García⁴

Resumen

Este artículo argumenta que, en países emergentes, como Colombia, la combinación de la transición demográfica con una alta informalidad del mercado laboral hace inviable la existencia de un régimen de pensiones de reparto. En teoría, un país como Colombia tiene aún una población joven y está, por lo tanto, “gozando” del llamado Bono o Dividendo Demográfico. En estas condiciones, cuenta con una relación entre la población económicamente activa y los adultos en edad de retiro relativamente elevada, lo que debería permitir que los trabajadores activos puedan durante algún tiempo más financiar con sus cotizaciones las pensiones de los adultos mayores. En Colombia, dicha relación es de casi siete trabajadores activos por cada adulto mayor de 65 años. Esta elevada relación es lo que permite la llamada “solidaridad intergeneracional”. Pero en la realidad, debido a la informalidad, solo hay dos trabajadores formales que cotizan a la seguridad social en pensiones por cada adulto mayor. En esas condiciones, aún si se adoptasen a la brevedad todas las medidas necesarias para incrementar radicalmente la formalidad laboral, cuando dichas medidas tuviesen efecto alguno en Colombia, la relación entre activos y adultos mayores habrá caído significativamente y, muy seguramente, Colombia habrá ya perdido su dividendo demográfico. Como consecuencia, los jóvenes, que hoy son solidarios con los mayores, no tendrán quiénes sean solidarios con ellos al llegar al retiro laboral.

Códigos JEL: H55 H75 J11 J21 J32 J46

Palabras Clave: pensiones, demografía, mercado laboral, informalidad, cuentas individuales, régimen de reparto

¹ Presidente Asociación Colombiana de Administradoras de Fondos de Pensiones y de Cesantía, Asofondos. smontenegro@asofondos.org.co
² Director Estudios Económicos Asofondos. jllano@asofondos.org.co
³ Estudiante de doctorado en economia de la University of Southern California. fajury@usc.edu
⁴ Analista Estudios Económicos Asofondos. cgarcia@asofondos.org.co
1. Introduction

Few topics are so extensively debated but so poorly understood as are social security, health and pensions. Discussing them is very difficult because they can be technically complex and their debate is likely to be ideologized and politicized.

The purpose of this document is to shed light on the topic providing a diagnosis of the context in which the Colombian pension system exists. We do this by combining an analysis of the demographic transition in which our country is immersed, with the critical characteristics of our labor market and, in particular, its elevated level of informality. Our population is no longer as young as it was half a century ago, when the ratio between the economically active population (EAP) and adults over 65, was over 11 to one. Today, this ratio is only 6.7, but it is still relatively high compared to countries such as Chile, Spain or Japan, the latter with a ratio of just 2 to 1. As our population continues to age, we will be reaching a ratio of 4 to 1 in 2030 and one like that of Japan by 2065. This means that, even if we assume that the entire economically active population were to contribute to the pay-as-you-go system, and even if we pretended that the current funding gap did not exist, the regime would not be viable in the future.

In practice, pay-as-you-go systems are viable, but only at the expense of heavy rationing. That is, a section of the working population finances the retired workers through its pension contributions, but it can only finance a small number of them, while the rest do not have access to a monthly pension payment. Those benefited are, in many cases, ex civil servants, who obtained their pensions under conditions that, in today’s perspective, are extremely favorable and very burdensome for the state and for the younger generations.

In this article, we do not refer to other characteristics pertaining to the Colombian pension system or to the pay-as-you-go system, or its fiscal cost, or its impact on inequality indicators, such as the Gini coefficient. It is enough to say, that the fiscal deficit in pensions has reached an extremely high level - 4% of the PIB - and a number of studies point out that the pay-as-you-go system is extremely regressive as it subsidizes the pensions of the highest incomes, while deteriorating the national Gini (Montenegro et. al, 2013A; Montenegro, Jiménez, & Hurtado, 2013B; Nieto, 2014; Jimenez, 2015; Lustig, 2016).

This document presents the interaction between the labor market and the Colombian demographics and it assesses the PAYG pension system assuming a scenario in which there is
no individual accounts system and an initial scenario in which the system would today be in balance, given reasonable parameters.

The results indicate that, because of the fall in the ratio between active workers and pensioners, the system would soon become imbalanced and would therefore have to be financed with resources from the National budget, by hugely increasing pension contributions, by reducing the replacement rate, or by a combination of these measures. The panorama is less encouraging when we assess Colombia’s real situation whereby only formal workers make contributions. The exercise is carried out assuming that all the elderly receive an average pension (be it contributors or not). But, even if we assume that many of them receive a minimum solidarity payment, the system is still not sustainable.

The rest of the document is organized as follows: the second section presents a brief description of Colombia’s demographic transition from the beginning of the 20th century to the present as well as its projections to the end of the 21st century. The third section shows an analysis of the evolution of the Colombian labor market. The fourth, presents the interaction between demographics and the labor market and how this can affect the pension system. The fifth, presents a stylized model to illustrate the parametric adjustments that would have to be made in order to compensate for the effects of the demographic transition and labor informality. Finally, Section 6 presents our conclusions.

2. Colombian demographic transition

At the beginning of the 20th century, Colombia only had 5 million inhabitants, by around 1950, it had 12 and, in 2015, it had 48 million. By 2050, it will have around 55 million and by the end of the 21st-century, this figure will fall to 45 million inhabitants (see Figure 1).
Population growth was relatively low until the 1930s, but this increased rapidly especially between the 1950s and 1960s. This dynamic can be explained by four factors. First, many children were born at the beginning of the 20th century, but many also died very young, and life expectancy at birth was very low. According to Figure 2, the birth rate at the beginning of the 20th century was of around 43 births for each thousand inhabitants, and the mortality rate was situated at 24 per thousand inhabitants.

Thus, the population grew by just less than 2% per year. As indicated in Figure 2, as the mortality rates began to fall drastically beginning in the 1940s, the birth rate went up and only began to fall again around the first half of the 1950s when it reached a rate of more than 47
births per thousand inhabitants. Thus, the population growth rate reached its peak, expanding to 3.2% per year in those five years. The fall in the death rate beginning in the 1940s and 1950s is fundamentally explained by the arrival of penicillin and other antibiotics to the country, helping to combat infections, which were one of the main causes of disease and death. In particular, the new medication was fundamental to drastically reducing infant mortality, whose rates began to plummet in the 1940s, from levels of over 160 to values of 100 per thousand inhabitants around 1950. In the middle of the second decade of the 21st-century, it was situated at 15 per thousand inhabitants and, by the end of the century, the mortality rate will have reached its minimum historical value (3 per thousand inhabitants).

Figure 3. Infant mortality in Colombia (1905-2100)

The second significant fact regarding Colombia’s demographic transition during the 20th century was the fall in the birth rate. As shown in Figure 2, this fall lagged in relation to the mortality rate, explaining the accelerated population growth beginning in the middle of the 20th century. During the first decade of the 20th century, the birth rate was very high because women, on average, had a lot of children. Towards the beginning of the century, they had around 8 children and around 1950, this figure reduced a little to around 7 children, on average. The birth rate only just began to fall in the 1970s, when the contraceptive pill made its way to the country together with the implementation of family-planning campaigns and women starting to study more, first by finishing high school and then starting to go to university. Another related factor was that female participation in the labor market began to increase, leading to the average number of children per woman decreasing to its current rate of 2.1.
The current birth rate is around 17 and the death rate is at almost 6, implying a growth of 11 people per every thousand inhabitants, equivalent to a growth rate of 1.1%. By the middle of the century, the birth rate will have dropped by at least 12 per thousand inhabitants, implying a very low population growth of a third of the current growth rate. If the trends projected by the United Nations continue, by the third part of the century, the total population will begin to decrease.

A third factor that affects countries’ demographic transition processes is migration. For Colombia, however, this phenomenon has not been as significant as it has in the past for Argentina, Venezuela or the United States. Although, of course, immigrants have come to Colombia and many Colombians have left for other countries, the population growth is fundamentally explained by birth and death rates. However, internal migration has been a very important factor in explaining domestic demographic transition.

The Colombian demographic increase was accompanied by an increase of the urban population and a stagnation of the rural population (Figure 4), consistent with global trends. The number of people that lived in cities in the 1950s corresponds to a third of the total population, showing the fundamentally agricultural nature of the Colombian economy of the time. It is estimated that by 2050, the rural population will be of around 8.6 million, similar to the number in the 1950s; while the population in cities will be of 46.4 million approximately, corresponding to a number almost 10 times greater than the same category in 1950.

The main causes of rural-urban migration are associated to the better provision of public services in urban centers (including water, sewage treatment systems, energy, health and education, etc.), better salaries, and, to a lesser extent, to violence (Flórez, 2000). In turn, the greater population concentration in cities means that in the future, more people will have a better quality of life given their greater access to services and opportunities, leading, in turn, to a reduction in the mortality rate (particularly infants) and increased life expectancy.
The fourth phenomenon linked to Colombian demographic transition is life expectancy. Around 1900, with the very high infant and general mortality rates, people lived an average of 44 years. By the middle of the 20th century, this figure had risen to 50 years, and with the arrival of antibiotics and other medication and the development of medicine and better diets, life expectancy at birth rose to 75 years by the second decade of the 21st-century. It is expected to rise to 81 years by 2050 and to 87 by the end of the century.

Figure 6 captures the same trends analyzed, in the format of the so-called population pyramids. In the vertical axis, Colombia’s total population has been divided by five-year periods, considering men on the left and women on the right. The horizontal axis, records the
percentages of the grand total represented by each of these age groups. Panel A of Figure 6, for example, records the population pyramid for Colombia in 1950, which was one of the years with the greatest population growth as we saw above. It is no surprise, therefore, that the base of the pyramid is very broad, reflecting the existence of many youngsters in relation to the working age population and the elderly. In time, however, the base of the pyramid begins to narrow and, by the year 2100, the figure looks more like a bottle of water than it does a pyramid.

The narrowing of the base of the population pyramid and the increased older population in Colombia is an interesting phenomenon, especially when it is compared to the rest of the world. When the Colombian population aged over 80 is compared to the rest of the world as a proportion of the total number of inhabitants in the country using the same indicator, we can see that the domestic growth has been much more rapid than the world average. This would situate Colombia, as from 2100, as a country with a greater proportion of elderly inhabitants.
than the average for more developed countries (see Figure 7). This is worrying, as the country seems to show accelerated ageing with respect to its level of development, which may be a serious obstacle for the future sustainability of the social security system.

**Figure 7. Early ageing in Colombia: Percentage of over 80s with respect to the total population. Global comparison.**

This behavior, which at first sight seems rather odd, responds mainly to 2 factors: Colombia presents a relatively accelerated convergence of the demographic variables of its population compared to more developed countries, specifically in terms of its birthrate, life expectancy and mortality rate. Nevertheless, it differentiates strongly in terms of an element that determines, to a great extent, the demographic dynamic of developed countries, and even some middle-income countries: the migration of foreigners. Colombia has been characterized by being a relatively closed society, highlighted by low foreign migration data with respect to the whole population. While in developed countries this ratio is greater than 10%, in Colombia it only reaches 0.2% (in middle income countries, it is more than seven times this percentage). This immigration, which is high among people under 40, means that the over 80s population, as a proportion of the total population of developed countries, does not grow very much. For Colombia however, not receiving so many foreign migrants, means that the ratio will grow much more quickly. If the estimations are fulfilled, by 2075, there will be more over 80s as a proportion of the total population here than in developed countries.
The dependency ratios

The above demographic trends are crucial to understanding and planning a country’s social, economic, and political development. They determine, for example, the planning of the number of day nurseries, schools and hospital that a society needs in the present and future, given the changing populational composition.

To deal with the problem and ensure the coverage of old age risks, based on the above-mentioned trends, it is of particular interest to study the structure of a country’s population in terms of two general components: the working population and the so-called dependent population. The working population is the working age population, which, of course, can be arbitrary, depending on the customs and traditions of each country. For the purposes of analysis and comparison between different nations, it has been established that the working population is that which is aged between 15 and 64 years.

The dependent population, on the other hand, is the sector of population that does not work and is therefore in principle “dependent” on the population that generates income, saves, invests, pays taxes and makes social security payments. There are two large groups among the dependent population: children and the elderly. In a country such as Colombia, it is common to find children that do not study and are forced to work from an early age. But in general terms and for the purposes of statistical analysis, the child population is considered to include youngsters between zero and 15 years.

The other section of dependent population is made up by those over 65. In very general terms, it is considered that at such an age, people should not be working and, instead, be enjoying a well-deserved retirement. But, as happens with the above-mentioned populations, this limit too is arbitrary given that many people work many more years, while some are lucky enough to retire before they reach 65. According to Colombian legislation, it is considered that men have the right to a pension at 62 years, and women at 57 years. But these ages change in time and depending on the country. In a number of European countries, for example, the retirement age is 65, but in others, such as France, it is 67.

Given the above definitions, we can now calculate the so-called dependency ratios, which are crucial to understanding the scope of the problem related to the risks associated to old age and pensions.
When we look at global dependency ratios, and when differentiating the countries according to income level, we found that the richest countries present a growing trend in terms of this indicator, due to the fact that their birthrates reduced during the last decade, life expectancy increased significantly, and their populations are ageing. For middle-income states, there are around 15 years left before their dependency ratios begin to rise and manifest the real problem of having an ageing population (see Figure 8).

The relatively lower life expectancy of poor countries and the maintenance of not very low birth rates will allow the dependence ratio to reach its minimum value by the end of the 21st-century, when the natural population ageing process already suffered by the rest of the world begins.

![Figure 8. Dependency ratio (1950-2100)](source: UN Population Division)

It is common to estimate three types of dependency ratios: the child dependency ratio, the old-age dependency ratio, and the total dependency ratio. The first rate shows the number of youngsters aged between zero and 15 divided by the working age population (the population between 15 and 64 years), which, for over a century in Colombia, has experienced truly dramatic and pronounced changes (see Figure 9). The old-age dependency ratio, on the other hand, was situated below 10%, during the whole of the 20th century, until the second decade of the new century, and, from there, will begin to rise rapidly until situating itself at levels above 50% by the end of the 21st-century.
As indicated in Figure 9, the total dependency ratio equals the sum of the child dependency ratio and the old-age dependency ratio. The curve shows that the total dependency ratio was about 50% for the whole of the 20th century, and that it will rise again in the second half of the 21st-century. For the periods considered, it is a high rate, first because of the number of children, and then, the elderly. That is, during these periods, the working population was relatively small in relation to minors and the elderly. It was very costly for the WAP to have sustained so many minors during the 20th century, and it will be similarly costly to support the elderly during the second half of the 21st century. Another very didactic way of presenting the old-age dependency ratio is by expressing the ratio of the economically active population to the over 65 population, as we can see in Figure 10. By the middle of the 20th century, Colombia had 11 active workers to every elderly person; today, it has 6.7, and by 2060 it will only have two. Meanwhile, Chile, Spain and Japan, countries in which the demographic transition is more advanced, present ratios of 4, 2, and less than 2 respectively.
As a whole, we can affirm that as from the second decade of the 21st century until the 40s, Colombia will benefit from a low dependency ratio. This is the so-called demographic advantage or is the demographic “dividend”, a state in which the country currently finds itself. This is an important phenomena that deserves more detailed analysis.

The demographic dividend

When the dependent population (those under 15 and over 65) is relatively small in relation to the working population, we say that a country enjoys a “demographic dividend”. This is a dividend or a benefit because it is assumed that an important section of the total population is working, generating income, saving, paying taxes and making contributions to the social security system, and a relatively small part of all these resources have to be dedicated to education and the care of the young and elderly. Thus, many of these resources can be invested, for example, in a country’s greater productive capacity, in the form of factories, transport infrastructure, better universities, technical training and higher education, etc. Saving and investing a considerable portion of the national income, does not only create more and better employment in the present, but also for the future. Also, the working population pays taxes and social security contributions with which governments can cover social security costs in health, old age, and professional risks. Eventually, if there are many workers in relation to the dependent population, a far-sighted and responsible government can save the surplus to cover the social security needs of future generations.
Many of the countries today known as developed countries reached this status because they took full advantage of their demographic dividend when they could, educating their youngsters, creating productive jobs, employing the working population en masse, promoting innovation, saving, and investing in broadening the productive capacity of their economies.

An example of a country that took successful advantage of its demographic dividend is Japan. Figure 11 shows the country’s old-age dependency ratio and the growth rates of the GDP during the 1960-2010 period. In the 1960s, the country’s old-age dependency ratio was very low (10%), meaning that there were 10 working age people for every elderly person. With a large young working population, Japan managed to grow to rates of 7% real average during the decade and it maintained its elevated growth rates for many years. As the population began to age, the growth rate attenuated, but the income per capita at the end of the first decade of the 21st-century was situated at around US$45 thousand. Once the dependency ratio is above 30%, it becomes very difficult to grow to very high ratios, but it is also true that it is no longer so necessary as the per capita income is sufficiently high.

![Figure 11. Old-age dependency ratio and growth in Japan (1961-2014)](source: UN Population Division and the World Bank)

3. The labor market

The population tree is the first approach that must be considered when trying to understand a country’s labor market. The tree shows the main subdivisions of the population from a perspective of the labor variables (see Figure 12).
The component that corresponds to the employment offer, described above, is known as the economically active population (EAP); which represents the set of people that are actively participating in the labor market, either as workers or as people looking for work. The EAP, in turn, is made up of two population groups: the employed and the unemployed. As we describe further on, the former is made up of over 16s that work at least one hour a week and receive remuneration in cash and in kind. Non-remunerated family workers that work for at least one hour a week are also included as are those that are formally employed, defined as those workers that have legal social security coverage, in contrast to those who work informally and do not pay into a pension scheme.

The unemployed population, on the other hand, is defined as the group of people who do not work, but that have been looking for work during the last month. It also includes those that, despite not having actively looked for work during the past month, have done so during the past year, and have valid reasons for their demotivation with respect to no longer actively doing so. Also, the unemployed population must be immediately available to begin to work once work is offered to them.

In Colombia, by April 2017, the employee population was of 22.3 million people, where the number of unemployed was slightly over 2.2 million, meaning that the EAP was equivalent to almost 25,000,000 people. This, in turn, is a component of the working age population (WAP), which corresponds to the group of individuals that could commit to employment. In Colombia, the DANE (the official statistics entity) calculates the WAP as the number of people over 12 in the urban area and over 10 in the rural area. This description differs from the United Nations’ estimation of the WAP for the purposes of the analysis of the demographic transition that we will use in Section 2. For this section, and to undertake a comparison with other countries, we will use the WAP with the over 16 population. The above does not indicate that all those of working age must do so, many should be studying, or, if they’re older already, enjoying a well-deserved retirement. Nevertheless, this entire population is grouped within the definition of the working age population, given that some very young or very old people work and, as such, contribute to national production.
The WAP therefore is made up of the EAP and of a population known as economically inactive (EIP), made up by those working age individuals who are not working or looking for work. For example, the EIP includes some high school or university students, and retired people (with or without a pension) that do not work, among others. For April 2017, the country’s EIP was around 10 million people and the WAP, for the same period, was made up of almost 35,000,000 people. For April 2017, the country’s non-working age population was around 13.1 million people, making the country’s total population around 48 million people.

Of the 10 million people in the EIP, 7 million are women, of which 63% is dedicated to housework, while 18% (592 thousand) is studying. On the other hand, 40% of the men in the EIP are studying and only 9% (129 thousand) dedicate their time to housework. The third type of inactivity is known as other activity and Figure 13 indicates that those in this category are permanently unable to work, landlords, pensioners or retired individuals, or simply do not want to work or do not think it is worth doing so. Half of the men fall within this latter category, as do 18% of the women.\footnote{Figures calculated based on the people who responded to the question: “in what activity did you occupy most of your time in the last week?”}

More detailed analyses are being carried out to study young people aged between 15 and 24 that neither work nor study and who are known as ninis. In Latin America, one in five people
in this age group is a nini\(^2\) whereas in Colombia, this figure is one in six,\(^3\) corresponding to 5% of the EIP. The effects of having a population of approximately 580,000 economically inactive individuals are diverse. According to the World Bank, school desertion and the non-accumulation of human capital among a significant section of the population may hinder economic growth and, therefore, affect the country’s productivity. In turn, these people are more likely to fall into the poverty trap due to the incidence of teenage pregnancy and a lack of future work opportunities due to their lack of experience. Such factors can contribute to the transmission of intergenerational inequality. In countries such as Colombia, with its high rates of violence, the probability of ninis’ involvement in criminal activities is an additional problem to society. Finally, an accelerated increase in the number of ninis is another factor that impedes the country from enjoying its demographic dividend.

Figure 13. Economically inactive population per type of inactivity and gender. Data from April 2017 in thousands.

<table>
<thead>
<tr>
<th>Type of Inactivity</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housework</td>
<td>2,058</td>
<td>-</td>
</tr>
<tr>
<td>Studying</td>
<td>592</td>
<td>583</td>
</tr>
<tr>
<td>Other activity</td>
<td>593</td>
<td>751</td>
</tr>
</tbody>
</table>

Source: GEIH – DANE, Authors’ calculations

As expected, the working age population has grown over the past forty years, given the population growth shown in the first section. As mentioned above, the WAP is made up of the economically active population and the economically inactive population. Figure 14\(^4\) shows that, in 1976, the EIP exceeded the EAP, as the former included around 6 million people, whereas there were 5.3 million people employed and around 400 thousand unemployed, which together made up an economically active population of 5.7 million people. For 2014, the EIP was of 13.1

\(^2\) (Hoyos, Rogers, & Szekely, 2016)
\(^3\) (Ospina et. al, 2017)
\(^4\) The estimations in figures 14 and 15 were made using the DANE’s original definition of WAP: people over 12 years old in urban areas, and over 10 years old in rural areas.
million, while the EAP was made up of around 23.6 million people, of whom 2.2 million were unemployed and 21.5 were employed.

**Figure 14. Working age population: Employed, unemployed and EIP (1976-2014).**

The last 40 years reveal, therefore, a sustained EAP growth in relative and absolute terms in Colombia. Figure 15 shows the evolution during this period of the Global Participation Rate (GPR), which is defined as the ratio between the EAP and the working age population. Broadly speaking, an increase of this indicator shows whether the working age population decides to enter the labor market or not.

Figure 15 shows that since 1976, the GPR has grown in a sustained fashion, as the EAP went from 47% of the WAP to 64% in 2014; this growth was faster in the 1970s and the 1980s and it has been stabilizing throughout the last two decades. The increase in the indicators suggests that during this period, there were structural changes that accelerated the increase of the EAP with respect to the EIP.

Part of this increase may be explained by the demographic transition. As we saw in the section above, the population pyramid for Colombia has changed substantially so that the proportion, in relative terms, of the younger population has reduced with respect to the total number of inhabitants in the country. As such, even though children have tended to stay in school for longer over the past 40 years, the demographic transition towards an older society has meant that the number of people that are effectively working or looking for work because, for example, they have finished their studies, has risen with respect to the total of the working age population.
Informality

To introduce this topic, Figures 16 and 17 and Table 1 show the demographic and labor data for Spain, a country that, in absolute values, presents figures very similar to those pertaining to Colombia. Taking the same population tree as for Colombia, we can see that almost all the variables are similar except those representing formality, showing the importance of this variable on nation’s economic development through greater productivity and revenue collection.

Figure 15: Global Participation Rate (1976-2014)

Source: DNP and DANE. Authors’ calculations.

Figure 16. Population tree for Spain. Data from April 2017 in thousands.

Source: INE, Agencia Tributaria del Gobierno de España
In 2017, Colombia has a population of 47.7 million inhabitants, which is very similar to Spain (46.4 million), as are the rates of the economically active population (EAP) and the working age population (WAP) between the two countries.

But, when we look at the numbers of workers that pay into the social security system, the difference becomes abysmal. While in Spain 18.1 million people make such payments, in Colombia, this figure only reaches 7.8 million. With an EAP similar to Colombia’s, in Spain, over 19 million people declare their income, while in Colombia only 2 million do so. These figures are alarming and they reflect the number of informal workers that for the European country is of only 316 thousand people, while in Colombia, informal workers reached a number of 14.4 million.

Although the Colombian labor market has evolved significantly over recent decades, informality in Colombia is situated at critical levels. According to Figure 12, of the 22.3 million employed people, 14.4 million are informal, which is equivalent to 65% of the employed population. We define informality as the employed population that does not pay into a pension fund (as defined by the OECD and the IDB). Figure 18 shows the Colombian populational pyramid again, this time compared to the formal population that pays into a pension fund, and which corresponds to a little under 35% of Colombian workers. Although in theory, Colombia has great potential to enjoy its demographic dividend, the reality is different. Colombian workers generate income and save, but most don’t pay taxes or social security because, even if they would prefer to do so, they cannot find work that fulfills the labor protection obliged by the law, or
because they prefer to set up their own businesses (without paying taxes and social security). The latter may be as a response to the lack of formal employment, to enjoy a greater income, or to avoid paying taxes.

**Figure 18. Populational pyramid. Total population and formal population (2014).**

A high level of informality is very serious because, in the first place, the population would not be covered for the risks associated to old age, and it would not be insured against adverse situations, such as the loss of employment, work accidents, death or disability, among others. Similarly, the firms in the informal sector tend not to be very productive, as they do not have access to credit and to larger markets, which discourages innovation and the hiring of more productive employees. A large informal sector is therefore a concern as it contributes to a lack of protection for the population and an inability to hire more productive employees, it contributes to the population’s vulnerability in terms of the risks associated to old age and other risks, and it is both the cause and the consequence of low levels of productivity in an economy.

The panorama of informality is aggravated if we consider rural and urban settings separately. Figure 19 presents the evolution between 2007 and 2015 of informality differentiated by zone, defined as the proportion of those employed that do not make pension payments over the total number of workers. While in rural areas, informality has remained at around 90% between 2007 and 2015, in urban centers, it has hovered around 60%. This is an alarming situation for the Colombian rural sector, as a significant percentage of workers will not enjoy adequate protection in old age or in dealing with disability or survival.
There are two main reasons behind Colombia’s high level of informality: stagnating production levels among the workers and low GDP per capita growth. If we evaluate the evolution of labor productivity for various countries around the world, measured as the GDP per worker (EAP), and compare this to values for the United States, we can see that Colombia presents very low levels of productivity. According to the OECD, productivity in Colombia today is 25% lower than it was half a century ago, which, when compared to other countries, leaves us in a position that is not particularly positive (Figure 20). According to the methodology and design shown in Figure 20, a country needs to have a positive slope and a long trajectory, which is precisely what happens for South Korea and China. While Chile has been able to at least maintain its levels of productivity, Colombia’s levels have decreased. Furthermore, the trajectories of Colombia and Chile are short when compared to South Korea and China, which have experienced true economic revolutions.

In 1960, labor productivity in South Korea was even lower than that of Colombia, as it was equivalent to 15% of that of the United States. During the following fifty years, the country, through great effort to increase standards through education, the implementation of industrialization policies and trade and financial liberalization, was able to increase its labor productivity consistently until reaching a level of 65% with respect to the United States in 2010.

Another country which stands out in terms of this figure is China, whose labor productivity

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remained relatively stable during much of the 20th century and began a sustained growth in the last decade of the past century which is still ongoing now, reaching the same productivity per worker as for Colombia in 2010, and with a marked upward trend.

The Asian countries have presented sustained economic growth, which has gone hand-in-hand with increased productivity, allowing sound economic development and the harnessing of the benefits of demographic change. Meanwhile, Chile has experienced a growth in its GDP per capita despite there not being a significant increase in its labor productivity. If Colombia does not correct its labor informality and does not increase its productivity, it will not be able to take advantage of its demographic dividend to reach a level of economic development equivalent to that of South Korea.

Figure 20. Economic growth and productivity in Colombia, Chile, China and South Korea (1960 – 2010)

According to Ronald Lee and Andrew Mason (2006), the transition of a rural and agrarian society with high levels of fertility and mortality, to one that is predominantly urban and industrial with low levels of fertility and mortality, is accompanied by two types of demographic bonus. The first, which lasts approximately five decades, corresponds to an increase in the per capita income produced by an increased workforce and low dependency ratios. This dividend is temporary precisely because, in time, the size of the workforce will decrease and dependency ratios will increase. The second bonus, for its part, comes from people’s savings for their retirement. This accumulation of assets, invested in the country or abroad, allows the national income to increase and favor economic development.
It seems therefore that the formula for a country’s economic development, based on the experiences of developed countries, is to take full advantage of its population’s demographic dividend. However, the bonus must be interpreted as an opportunity and not as a guarantee, as it depends mainly on efficient public policies and the conditions of the country’s markets.

Colombia has immense difficulties when it comes to taking full advantage of the two types of demographic dividend set out by Lee and Mason. On the one hand, the first bonus cannot be fully taken advantage of while we continue to have high levels of unemployment and informality. In addition, our workers’ stagnating productivity will make it impossible for the per capita income to grow, as it would be expected to in the midst of a demographic transition. On the other hand, our country will not be able to take advantage of the benefits of the second dividend given that, to do so, it would need, among other things, an increase in private and public savings rates and a reframing of the current social security system for this to be possible.

4. The impact of demography and the labor market on the pension system

The demographic changes of recent decades have made it necessary to rethink pension systems in most countries. The aging population has turned into a risk for the sustainability of pay-as-you-go social security systems, in which young people pay the elderly’s pensions and/or a part of the national budget has to be spent on pension contributions. But it is not only demography that requires an urgent redesigning of the pension system. The malfunctioning of the labor markets characterized by the existence of a large section of the society which does not make pension payments -due to unemployment or informality- makes coverage very low, pension contributions reduced, and systems unfeasible. Such problems become more acute with the presence of “special” pension schemes that grant exaggerated benefits to certain populational groups. Going back to Figure 10, which illustrates the relationship between active workers and people over 65, we can see that the relationship shows a marked decreasing trend. This is a critical ratio for a pay-as-you-go pension system, as it requires pensions to be paid for through the workers’ contributions. In the middle of the last century, Colombia had more than 11 active workers to each elderly person; today this figure is 6.7. Although the ratio has fallen, given
reasonable pension parameters, if all the active workers made pension contributions, the system could finance monthly pension payments for today’s pensioners. But, as shown in the same figure, this ratio will be of only 4 in 2030 and 2 in 2060. Clearly, this trend makes a public pension system unsustainable in time. In other words, if we calculate future obligations and income and bring them to a present value, the system would have a net debt.

This situation already makes the feasibility of a PAYG pension system critical, but by introducing labor informality, the variable becomes unrealistic. Taking the ratio older dependents to Working-Age Population as a reference, informality in Colombia creates a situation whereby instead of having almost 7 active workers per older dependent, only 2 effectively make pension contributions (Figure 21). In other words, we should be at point A of Figure 21, but informality drags us towards point B leading us to a situation similar to the ratio Colombia should, in theory, be in by 2060 (point C). With this ratio, a public pension system is not viable today. Today’s youth support the elderly, but when today’s young people are old, there will no one to support them. This, in principle, could be corrected through labor market reforms that allow the use of the entire potential of Colombian workers during their productive years and that facilitate their access to the General Pension System from an early age.

**Figure 21. The effect of informality on the ratio of economically active people to each older dependent**

In this sense, the news is unfortunately not good. In Figure 22, we present the results of the following exercise: let’s suppose that labor informality in Colombia -today at 65%- falls 10 percentage points every five years, until reaching 25% in 2040. As shown in this figure, the ratio
of active workers to elderly people rises slightly, but it is situated at the same levels today as it will be in 2040. Despite the enormous effort made to increase formalization, the demographic transition defeats the favorable trend of the labor market and the ratio of active workers to older dependents remains unaltered.

This result confirms the unfeasibility of a pay-as-you-go system in a country such as Colombia, but – even more importantly – it points out that Colombia is losing its demographic bonus and may even have already lost it irremediably. The country’s political and economic leaders must pay particular attention to this particular conclusion of this study.

Point D in Figure 22 was calculated using a definition of formality based on the question: “Did you make a pension contribution last month?” If we use a definition with workers that have made pension contributions for over nine months in the last year, the situation is really worrying as it is estimated that of the 7.8 million formal workers, only 2.4 million make regular payments. This means that instead of of a ratio of 2 active workers to each older dependent, there are only 0.65 formal workers that make regular pension contributions. In other words, these figures indicate that average citizens cannot fulfill the requirements for their retirement because they spend a large part of their working lives in the informal sector, without making pension contributions.

If we combine an inefficient labor market that does not facilitate pension contributions during individuals’ working age (reducing the probability of fulfilling pension requirements once
the time comes), with the growing number of elderly people, the pensionless population will be very high.

Finally, we end this section with Table 1, which compares pension coverage figures between Colombia, Spain and Chile. It shouldn’t surprise us, then, that of the 2 million 65+ adults in Chile, 1.71 has an old age pension, which is equivalent to 86% pension coverage. Spain too has a good coverage rate, whereby of 8.77 million elderly people, 5.8 million have a pension (66% coverage). Colombia is far from reaching these figures given that of the 3.87 million over 65 year olds, only 945 have a pension for their old age, equivalent to 24% pension coverage. It is worth clarifying that there are more retired people in Spain because there are 10 million more pension payers than there are in Colombia, because they make contributions for more years, and because these contributions take up a much higher percentage of their salaries than in our country.6 These figures are alarming, and a clear example of the effect of informality on pension coverage. Countries such as Chile and Spain, with their low levels of informality, are able to cover more than half of their populations’ pensions, while Colombia is very far from achieving the sufficient coverage if we don’t first correct the problem of informality in working age individuals.

Table 1. Demography and pensions in Colombia and Spain

<table>
<thead>
<tr>
<th>Pension figures</th>
<th>Colombia</th>
<th>Chile</th>
<th>Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>65 + Population</td>
<td>3.876</td>
<td>2.004</td>
<td>8.778</td>
</tr>
<tr>
<td>Old-age pensioners</td>
<td>945</td>
<td>1.716</td>
<td>5.802</td>
</tr>
<tr>
<td>Pension coverage</td>
<td>24%</td>
<td>86%</td>
<td>66%</td>
</tr>
</tbody>
</table>

Source: Colombia: DANE – SFC; Chile: INE – Superpensiones; Spain: INE (Estadística de Afiliación de Trabajadores a la Seguridad Social)

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6 In Spain, people make contributions for 40 years and the contribution rate corresponds to 28% of their salary, while in Colombia, people make contributions for only between 22 and 25 years with a contribution rate of 13%.
5. Alternatives of parametric adjustments in the face of demographic transition and informality

In a public pension system, the pension received by currently retired individuals is financed by current active workers. In other words, the contributions that current retirees made previously were used to finance the pensions at the time when they were actively working. Thus, an individual’s pension will not depend on the contributions he or she has made to the system but rather on the pension contribution capacity of active workers and on the government’s commitments or promises at the time when that individual has retired. In this sense, the demographic dynamic takes on a singular relevance given as the ratio of active workers to each older dependent will tend to fall as the years go by. Equation 1 reflects this definition:

\[ twL = PA \]  \hspace{1cm} (1)

Where \( t \) is the contribution rate, \( w \) corresponds to the average salary, \( L \) is the labor force, \( P \) is the average pension, and \( A \) is the elderly population, which has a pension. Thus, the total value received through the contribution payments -a percentage of the workers’ salaries- in a balanced scenario, must be exactly the same as the value of the average pension so that all retirees are able to receive a monthly payment. For this analysis, we will take the ideal scenario where all 65+ adults receive a pension. Furthermore, we will assume that the contribution rate is part of the legally established rate destined to the common purse (that is, the net of the commission and the survival insurance) -13% in Colombia- and, that for 2015, the average salary is of COP$1,200,000 (US$ 400). On the other hand, we assume that the system starts off in balance, and not with the current 4% deficit of the GDP. Finally, we assume that there only exists a pure pay-as-you-go system; in other words, we will assume that there are no special regimes nor an individual savings account system (RAIS).

Based on the above, we can obtain an expression for the average pension, which will be a function of the contribution rate, of the salaries defined by the labor market, and of the worker to older dependent ratio.

\[ P = f(w, \frac{L}{A}) = tw \left( \frac{L}{A} \right) \]  \hspace{1cm} (2)
As mentioned above, the ratio \( \frac{L_A}{t} \) will have to drop in time, so everything else remaining constant, the average pension will also fall. Equation 3 shows the balance of the public pension system more clearly:

\[
\frac{L_A}{t} = 1 \\
\text{(3)}
\]

Where \( R \) is the replacement rate,

\[
\frac{1}{R} = \frac{w}{P} \\
\text{(4)}
\]

Now, in a country such as Colombia, where informality and unemployment play against the pension system as only formal workers make pension contributions, the reality is very different. Currently, there should be a ratio of 6.7 workers per older dependent, but, given the problems of the labor market that reduce the size of \( L \), this ratio decreases to 2.37 formal workers per every older dependent. This final figure is equivalent to the worker/elderly person ratio that we would expect for the year 2050. Given the above, a realistic scenario for the Colombian system will be taken into account as in Equation 3, so that:

\[
\frac{L_f}{A_R} t = 1 \\
\text{(5)}
\]

\[
L_f < L \\
\text{(6)}
\]

To maintain the balance of a pure public pension system is not easy. The well being of the pensioners and of those who make payments is represented in an intergenerational trade-off between the cost of present workers’ contribution, or the contribution rate, and the sum of the pensions for the older dependents, or the replacement rate. For the subsequent exercises, the analysis was carried out using a replacement rate of 88% which is the result of the average pension as a proportion of the average salary if all active workers paid into the General Pension System.

Knowing this, to maintain the balance of a public pension system, one of the following four situations would have to take place: i) the State assume the cost of the imbalance, ii) the contribution rate increases as the number of older dependents grows, iii) the replacement rate decreases year after year, or iv) the pension age increases. Below is a detailed explanation of each of these cases.
Case 1

The first alternative is to sacrifice the equilibrium of the public pension system, by keeping the contribution rate and replacement rate constant. In this case, as the years go by, the contributions raised will not be enough to pay current pensions, as the extra cost will have to be assumed by the State, be it through taxes or greater indebtedness. In time, Equation 3 will stop being an equality due to the fall in \( \frac{L}{A} \), everything else being constant:

\[
\frac{L}{A} \frac{1}{R} \bar{t} < 1 \quad (7)
\]

Where \( R = 88\% \) and \( \bar{t} = 13\% \). Figure 23 presents the imbalance of the public pension system brought about by a natural imbalance in the population’s age.

![Figure 23: Imbalance of the public pension system](source: Asofondos)

Based on equations 1 and 6, the cost of the imbalance that the State would have to assume is much greater in the scenario in which only formal workers make contributions:

\[
PA - twL > 0 \quad (8)
\]

\[
(PA - twL_f) > (PA - twL) \quad (9)
\]
Figure 24 presents the costs of the imbalance as a percentage of the GDP maintaining the contribution rate of 13% of the salary and a replacement rate of 88%, and maintaining the assumption that indicates that all elderly people receive a pension.\(^7\)

Figure 24: Cost of the imbalance of the public pension system assumed by the State

Source: Asofondos

One of the reasons for which the cost of the imbalance is not currently greater has to do with the fact that only a very low percentage of the people that make contributions actually retire, rendering the Colpensiones public pension system relatively sustainable. In a scenario in which formality increases, this regimen would present a much greater imbalance. Estimations made by the Inter-American Development Bank (IDB) show that, if the current low levels of formality continue, there will be a reduction in the pension deficits to levels close to 1.7% of the annual GDP for 2075, representing a significant reduction with respect to current levels (of an annual 3.9%). IDB projections show that, if there is a growth in labor formality in Colombia to levels similar to countries such as Chile or Uruguay, and if the existing replacement rates are maintained, the deficit of public pensions would increase to levels close to an annual 6% for 2075 (Figure 25). In other words, the sustainability of the PAYG is supported by the very low coverage that it offers its affiliates, given the requirements of 1300 weeks of contribution in a society where, on average, people make contributions for 500 weeks.

\(^7\) The cost of the imbalance is calculated as the annual cost, as a percentage of the GDP to current prices, of the difference between a pension whose replacement rate is of 88% and the pension calculated by the balanced model, multiplied by the number of people over 65.
**Case 2**

If the government wants to maintain the balance and, at the same time, maintain an average pension so that the replacement rate is of 88%, it will inevitably have to increase the contribution rate, $t$.

$$\frac{L}{A} \frac{1}{R} t = 1 \quad (11)$$

In the scenario in which all workers make pension payments, the contribution rate as a percentage of the salary would begin at 13% in 2015; it would go up to 37% by 2050; and, finally, it would reach 69% in 2100. This means that by 2050, Colombian workers would be paying more than a third of their salary to pay a pension equivalent to 88% of the salary of those who are at pensionable age. This situation becomes even more serious when we evaluate the scenario in which only formal workers make contributions, as the contribution rates would have to be at least 37% of their salary in 2015 and, in 2050, they would have to be 105% of their salary, not to even mention the year 2100, where a contribution rate of 198% would be necessary. That is, workers would have to contribute twice their salary every month in order to obtain a pension of 88% of the salary. It could be argued that these results exaggerate the sum of these contributions by assuming that all elderly people receive a pension. But even assuming that many of them...
receive a solidarity pension (or that the average pension was lower), the contribution rates would be considerable.

**Figure 26: Contribution rates to maintain a replacement rate of 88%**

![Figure 26](source: Asofondos)

**Case 3**

The third option to maintain the equilibrium of the pure public pension system is to reduce the replacement rate; that is, reduce the average pension as a proportion of the average salary received by the labor force \( L \) in time, maintaining a contribution rate of 13% in order to maintain the following equality:

\[
\frac{L}{AR} \bar{\ell} = 1 \quad (10)
\]

Figure 27 presents the evolution of the replacement rates that allows the equivalence of Equation 10 to be fulfilled, bearing in mind a projection of the scenario in which the whole labor force contributes between 2015 and 2100, and the realistic scenario in which only formal workers do so. For 2015, the replacement rate if everyone were to contribute would be of 88%, which is equivalent to a pension of $1,056,356 (US$ 352), but if only formal workers were to contribute, the replacement rate would be of 31%, equivalent to an average pension of $369,725 (US$ 123) for the same year. However, in either of the two scenarios, a fall in the replacement rates to maintain balance over time would be inevitable.
To stop the average pension from decreasing such a considerable amount over the next decades -reaching a replacement rate of 6% in the year 2100 with the current levels of informality, and of 16% in the scenario in which the entire economically active population contributes- this solution would involve increasing the contribution rates.

Case 4

The fourth case is very similar to the first, in which there is an imbalance in the public pension system, but we try to keep the contribution rate and the replacement rate constant. In this case, instead of the State assuming the cost of the imbalance, the retirement age is increased from 65 to 70 years, delaying the reduction of the \( \frac{L}{A} \) ratio.

\[
\left( \frac{L}{A} \right) \frac{1}{R} \bar{\epsilon} = 1 \quad (12)
\]

\[
\left( \frac{L}{A} \right)^{'} > \left( \frac{L}{A} \right) \quad (13)
\]

Where \( R = 88\% \) and \( \bar{\epsilon} = 13\% \).

Figure 28 presents the imbalance of the public pension system with the new retirement age for men and women -70 years- and it compares the scenario assessed in Case 1, in which the retirement age was kept at 65 years. The figure shows that the scenario with the new retirement
age (contemplating Equation 12) is even greater than 1 until 2030, when it reaches a balance and the imbalance begins. This scenario is exactly the same as one in which it is decided to ration the number of elderly people that receive a pension, of course, leaving many elderly people unprotected in their old age.

It is important to think about the feasibility of a scenario in which the retirement age increases from 65 to 70 in a country such as Colombia. Law 100 of 1993, subsequently modified by Law 797 of 2003, created a transition period which culminated in January 2015, with a retirement age of 57 years for women and 62 men, which may mean that an increase in the retirement age over the next few years would not be well accepted. In any case, an increase in the retirement age will be inevitable in the future due to increased life expectancy. But even if, as set out in Figure 27, the retirement age was increased to 70, this would only be a transitory solution for the pure pay-as-you-go system.

All the cases presented above seek to keep the contribution rate or the replacement rate intact; but it is important to analyze possible combinations of these variables, which may make the public pension system sustainable. Table 2 presents the combinations of the replacement rate

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8 We do not consider an increase in the government savings as a result of the surplus given by the increase in the retirement age, since we assume that it is automatically taken as cash flow for the government. An alternative option could be that the government decides to invest the surplus, which could postpone for a few years the imbalance of the public pension system. However, this option is not eligible as the discount rate that the Colombian government has always faced is too high.
and contribution rate that keep the system in equilibrium, as well as those combinations that are not sustainable for 2015 or for 2050. Panel A of the table considers Equation 3, bearing in mind the total labor force, while Panel B represents the scenario in which only formal workers make pension payments as established in Equation 5.

For 2015 and considering the first scenario in which all workers contribute (Panel A), most of the combinations keep the public pension system in equilibrium. With a contribution of 13% like the one currently in place in Colombia, a replacement rate of up to 88% would be reached for all elderly individuals in the same year. But the combination of parameters would not be efficient for 2050, when a contribution of over 30% would be required to maintain the current replacement rate, or the replacement rate would fall to less than 40% if the priority were to maintain a contribution rate of 13%. Colombia’s current scenario in which only formal workers make contributions (Panel B) is, however, much less encouraging. With a contribution rate of 13%, the replacement rate cannot be of 88% in 2015; it would be of only 20%. This combination would, in any case, not be sustainable for 2050. If the current replacement rate of 88% were to be maintained, a contribution rate much higher than 50% would be necessary.

Table 2: Imbalance of the public pension system in 2015 and 2050

<table>
<thead>
<tr>
<th>Contribution rate</th>
<th>5%</th>
<th>10%</th>
<th>13%</th>
<th>20%</th>
<th>30%</th>
<th>50%</th>
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<tr>
<td>Replacement rate</td>
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<td>60%</td>
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<td>80%</td>
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<td>88%</td>
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<td>100%</td>
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In practical terms, this average replacement rate would be the combination of the replacement rates of the contributive pensions with the non-contributive pensions, given that this model is supported by the basis that all individuals over 65 must receive a monthly pension payment.
B. With the formal labor force $L_f$

<table>
<thead>
<tr>
<th>Contribution rate</th>
<th>5%</th>
<th>10%</th>
<th>13%</th>
<th>20%</th>
<th>30%</th>
<th>50%</th>
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<tbody>
<tr>
<td>Replacement rate</td>
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<td>20%</td>
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Source: Asofondos

The above exercise highlights the two most important messages with respect to the central concept of this document: demography and informality. The first is related to Colombia’s ageing population, which will lead to ever lower numbers of workers for each elderly person, seriously affecting pension regimes dependent only on workers’ contributions in the mid and long term, and ever lower pension payments. The second message is that, if the levels of informality on the labor market are maintained, pension payments will be much lower and formal workers will have a much greater burden; that is, those who contribute to the system under a pure pay-as-you-go pension system.

6. Conclusions

All countries, including Colombia, face a demographic transition that cannot be ignored. An ageing population is subject to many challenges in terms of public policy, among which, an adequate institutional design of the social security systems, in particular, pension systems. Faced with this reality, many countries are migrating towards systems with elements that are increasingly closer to capitalization systems, either with funded or with notional individual accounts and, in general, to schemes in which the defined benefit is giving way to a defined contribution. Pure pay-as-you-go systems will have to disappear and governments have the obligation to create regulations for systems with greater coverage, equity, and sustainability in time.

Although Colombia has a favorable ratio of economically active people to elderly individuals, who, if made formal, could make for a sustainable pay-as-you-go system in the mid-
term (10 – 15 years max.), the very high level informality on the labor market reduces this ratio by almost 70%, making the public pension system unfeasible even today. The decreased ratio of active workers to old-age dependents -due to the demographic transition and labor informality- undermines the principle of so-called intergenerational solidarity because young people that support today’s elderly, will not have anyone to support them when they reach retirement age. It is important to highlight that this conclusion can be reached under the assumption that there only exists a pay-as-you-go system and that this starts off in balance, implying that the current situation is even more alarming bearing in mind that today the public pension system (RPM and the special regimes) already present a deficit of 4% of the GDP.

Although Colombia still enjoys the so-called demographic bonus, its levels of informality and labor productivity have become a barrier to taking full advantage of this dividend. The demographic dividend is a lever towards a country’s economic development, and it must be understood as an opportunity and not as a guarantee of development. If it is not accompanied by measures to improve education and health and if it does not provide greater freedom to the economy so that it can grow -measures that, in turn, improve the labor productivity of workers, as in South Korea- the country will not witness significant changes to drive its development in future decades.
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