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The Intergenerational Balance of Welfare

Col·legi d'Economistes de Catalunya
Al servei dels professionals de l'economia i de l'empresa

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LETTER FROM THE DIRECTOR

Guillem López Casasnovas
Director of the *Economic Journal of Catalonia*

As new director of the *Economic Journal of Catalonia*, this is my first issue. From the position of responsibility I have taken on together with professor Judit Vall, it is now my turn to take the baton from my friends Martí Parellada and Toni Garrido. I will try to follow in their footsteps with the best of purposes. And of course, I -indeed all of us- would like to emphasise our continued confidence in the Editorial Board and President Anton Gasol.

As life continues at a high pace for many of us, shortly after accepting the challenge at the helm of the *Economic Journal of Catalonia*, it was time for us to prepare the next issue, the one you are presently reading. The study of welfare balance is one of my academic areas of speciality. I wrote my first article on this 15 years ago in a two-volume monograph on the welfare state in *Nota de Economía* and with Ana Mosterín in an international publication, which is linked here: (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1020572). Back in 2006, it was already clear that generational welfare balances were at tipping point. The labour market no longer 'rewarded' the best-educated young people, educational premiums fell, there was a lack in active employment policies, vocational training, access to housing ... while an exponentially ageing society relentlessly put up with the inertia surrounding pensions and an increasing care for the dependent elderly population. To consider therefore, that public policy could simply focus mostly on the elderly because the labour market already compensated the young was at the very least, questionable. Over all this time, contributions have proliferated, and today the literature regarding generational burdens has attracted significant, first-rate contributions, such as those set out by Richard Musgrave, with the rules of public finance; Laurence Kotlikoff, with public debt issues; Gøsta Esping-Andersen, with those relating to public services, and Ronald Lee, with transfers, including family ones, to name just a few. Here in our country, Ció Patxot is right at the spearhead of applied research, as is clear from the content of this *Economic Journal of Catalonia*, and I wish to thank her enormously for her promotional work and as coordinator -including coordinating monographic work (mine is the least, but for me it concludes the season) together with her collaborators.

The cover clearly illustrates the aim of this analysis. If the quest for balance was already made more complicated by the economic pre-crisis and the post-financial crisis, the COVID-19 pandemic only makes us more aware of the complex reality we are immersed in. As economists with values, we cannot be indifferent to the situation: inequality, polarisation and breaking cohesion are not oblivious to their effect on the good functioning of the economy. This is especially true of our country, with a high productive network and supportive of the economic entrepreneurship that has so characterised the past and present of Catalonia. The havoc caused by the crisis must not leave anyone behind, we must all be involved in making welfare balances sustainable, for present and future generations on a planet we share. ■

DOSSIER

THE INTERGENERATIONAL BALANCE OF WELFARE

INTRODUCTION

Ció Patxot
University of Barcelona (UB)
and Barcelona Economic Analysis Team (BEAT)

Whether we like it or not, COVID-19 has brought us face to face with our fragility as a species, at a historic time in which it had seemed we could start to overlook this trait as human beings. When transhumanism seemed no longer to be a concept of science-fiction, reality came along with a thud to bring us back to earth. Actually, humans are the most fragile of the animal species. Newborn humans take longer than any other to become independent of their parents. We are born fragile and we become fragile again towards the end of our lives, for more or less time, although both periods of dependence are quite different.

Throughout history, we have faced the care of our dependents in several different ways. Traditionally, the family has always taken care of children and also dependent adults, in the form of extended families. The gradual development of the markets began to enable the intertemporal movement of resources on a more general level, especially towards the future, so that each person could provide resources for their future retirement by means of savings, or face the less desirable scenario of getting into debt to provide for their children.

Meanwhile, the development of democracy and the welfare state led to a third mechanism when it comes to caring for dependents. The state, in addition to redistributing between rich and poor (intragenerational), began to finance goods considered "preferential" (education and health) and to take on the role of insuring unemployment and pensions, becoming a mechanism for the movement (reallocation) of intertemporal and/or intergenerational resources (between different age groups or generations). By doing this, the state largely replaces transfers among family through a kind of intergenerational agreement.

The National Transfer Accounts (NTA) project has for the first time, made a complete and systematic quantification of all these movements of resources, allocating national accounts by age and adding an estimate of the private transfers that occur within the family. It supplements this estimate of cash flows with the quantification of consumption and production taking place outside the market in the form of 'time transfers' (NTTAs), mainly domestic work and the care of children and dependents.

This project, launched by specialists in demographic economics Ronald Lee and Andrew Mason, is a good example of the transformation of economic science as a result of the demographic transition. When the economy was first born, it was strongly marked by the simplistic assumption of methodological individualism and taking demography as an exogenous variable, until the change in the age structure of the population forced a change and gave rise to lines of research such as population economics and family economics, focused on macro and micro aspects, respectively.

In fact, there is a strong correlation between demographic transition and economic development. International evidence backs the fact that, as their per capita income increases, countries gradually move from high mortality and fertility rates to low rates of both variables, resulting in the population gradually ageing over time. In terms of fertility, the key factor that relates economic and demographic evolution is the incorporation of women into the labour market and the consequent change in family structure. Additionally, the declining trend in fertility was interrupted by the so-called *baby-boom*, followed by the *baby-bust,* which led to a demographic cycle that has resulted in increased ageing in many developed countries.

We are privileged to be able to use the NTA data as a tool for analysing the impact of demographic change on the economy. In fact, it has made it possible to quantify the positive effect on growth prior to ageing, the demographic dividend. This reached its peak once the *baby boomers* reached working age, in which the proportion of dependents (children and grandparents) reached historical lows. Another significant point made by the NTA project was discovering that once the welfare state is developed, it tends to focus on the elderly, leaving children, for the most part, in the care of families. Public spending on children is financed, in addition to public spending in education and possible family allowances, through family cash transfers, increased by time transfers. In contrast, spending on the elderly is "socialised" to a greater extent through public transfers, paradoxically, given that the recourse to the market to move intertemporal resources is much more difficult in the case of children. The fact that the cost of children is less "socialised" causes, in practice, a redistribution of resources from families with children to families without children, although so far this has not been examined in depth. This highlights another aspect of the asymmetry between both stages of dependence. Once born, everyone has a good chance of getting old, but not everyone becomes a parent and therefore invests resources in future generations privately. This bias probably does not help to promote an increase in fertility, which in turn does not promote the sustainability of the welfare state.

The first three articles offer key elements to understanding the situation of children and young people in relation to their family situation and the labour market. On one hand, the situation of children, and on the other, the friction that young women (and men) face when deciding whether or not to have children, while the expectations for getting an education and competing in the labour market continue, and all the while the clock keeps ticking.

The article by Andreu Domingo and Pau Miret makes a comprehensive demographic analysis of the evolution of the family structure of those born between 1940 and 1999 in Catalonia, showing the patterns related to emancipation and fertility. The time sequence illustrates the interaction of different social trends: the lengthening of youth due to the educational transition and the consequent delay in leaving home and finding a partner; the deinstitutionalisation of the family and its lower stability, and the fall in fertility. The economic cycle has a considerable impact. The effect of the last negative cycles does not compensate for the timid recovery that took place from the end of the twentieth century until the recession of 2008.

The article by Aitor Lacuesta focuses on the impact of the economic cycle on the situation of young people in the labour market in the last 25 years (born between 1976 and 1995), affected by the housing boom, the subsequent financial crisis and, more recently, by COVID-19. It is very interesting to comprehend the contradictory effects of the economic cycle on young people's human capital. Times of growth improve job opportunities, but at the expense of reducing investment in education and the accumulation of human capital. He draws attention to relevant policies to mitigate these effects, such as ending the duality of the labour market, promoting more rented housing, or improving the quality of the education system in all its formats (including vocational training and individualised guidance and training).

Libertad González analyses the correlation between the economic situation regarding children and changes in the labour market. The article analyses the effects of the COVID-19 pandemic on the economic situation regarding children based on data from the National Statistics Institute's Labour Force Survey. It finds a significant increase in the proportion of children living in households where neither parent is employed. The rate is especially high in the households with single mothers or low-educated immigrant fathers.

In conclusion, Andreu Domingo and Pau Miret consider that the prospects of recovering the fertility levels in Catalonia are minimal, despite the fact that periods of lockdown have reinforced a sense of family as a protective structure. Catalan and Spanish fertility rates are among the lowest in the world. This begs the

question of whether, on the one hand, the decision to have children is really the result of optimisation of a neoclassical nature (in an ideal world), or the result of friction and lack of opportunities, or a decision motivated by other factors. This is still a pending question somewhere on the fence between economic and demographic research, although fertility surveys continue to indicate that women fall short of the desired fertility rates, despite possible changes in social norms and preferences. This leads us to question the need for intervention from the public sector - probably one of the greatest policy issues, as it is a decision related to the very existence of others. What does seem clear is the need to alter the redistribution of income caused by the bias of the welfare state towards the elderly. On the other hand, from an empirical point of view, the question arises as to whether the fall in fertility has a lower limit. The fact is that in many countries, fertility recovers slightly once women enter the labour market, and stabilises at levels close to the replacement rate (2.1 children per woman). Interestingly, this has occurred both in Anglo-Saxon countries with almost no fertility support policies and in Nordic countries with broad policies at all levels. As Esping-Andersen explains in the interview, in his studies he has observed a reversal in the fall in fertility in some Nordic countries, due to having achieved a greater gender balance, enabling the complete transition of the role of women in society. This balance requires not only an adaptation among individuals, but also public policies that adequately support the process (especially parental leave and the availability of quality and universal early childhood education).

The impact of COVID-19 is also addressed in the fourth article, focused on the pension system. Although issue 79 of this *Economic Journal of Catalonia* already analysed the sustainability of the pension system in depth, the main social spending scheme aimed at the elderly, and the most affected by ageing, we felt it was appropriate to include an article about the possible impact of COVID-19 on the pension system, by Juan F. Jimeno, a renowned expert on the interaction between the labour market and pension systems. The author reviews demographic elements and other trends that make the reform of the pension system necessary, but points out the difficulty of making improvements due to the effects of COVID-19, along with several negative factors. Based on the deadlock found in the reform process in the case of Spain, the author argues that a profound restructuring would be desirabe in terms of the national accounts of defined contribution pension plans, which include incentives to encourage labour participation and automatic adjustment mechanisms that are transparent for citizens, and which may act as incentives for savings.

The following three articles focus on the National Transfer Accounts (NTA) project. Specifically, the fifth one, which we wrote with members of the Spanish team —Guadalupe Souto and Gemma Abio— explains the methodology of the NTAs and shows the results for the case of Spain compared to other countries, noting the bias of the welfare state towards the elderly. The sixth article, by Tanja Istenič, Jože Sambt and Lili Vargha, analyses the typologies of the welfare state initially proposed by Esping-Andersen in the light of the NTA data, which make it possible to measure to what extent the welfare state is dependent on the family, and add a very relevant feature, which is the balance in state intervention to intergenerational transfers. Finally, the seventh article, written together with researchers from the NTA network —Jože Sambt and Tanja Istenič— uses the NTA estimates to analyse the potential of the demographic dividend with a view to a reform of the welfare state in Spain and other countries.

The last two articles address the future lines of research in the NTA project. The estimates made so far measure resource flows, while the preparation of generational wealth accounts is one of the fields currently being worked on in the project. Certainly, the intergenerational transmission of wealth is one of the key elements in the role of the family in the redistribution of wealth. Based on the observation of the increase in wealth inequality due to changes in the tax system and the greater globalisation of financial markets, the article by Pedro Salas analyses the role of inheritances given this trend. Using innovative data-based learning techniques from the Luxembourg Income Survey (LIS), they measure the share of total inequality that can be attributed to inheritances. The results indicate that the size of the effect is significant, ranging from about 40% in Italy to more than 65% in Spain and the United States. He concludes with a look at the importance of the tax and education policy to improve equal opportunities.

Finally, Guillem López Casasnovas' article goes a step further and discusses the intergenerational imbalances mentioned along with others, such as the environment, while giving a broad view of the world we leave to future generations. As Ronald Lee asks in the interview, will we remain "stuck in a system where older people have an increasingly long and costly retirement stage, while younger people have to struggle to raise their chil-

dren, progress in their career, saving and paying tax increases to support the elderly?"

All of this suggests the need for quality interdisciplinary research focused on designing imaginative policies for the so-called *sandwich generation*, which will have to continue spending on the elderly during the ageing process, without reducing fertility or investment in human capital. The first field of action, in the order of the life cycle and its importance in strengthening equal opportunities, is to improve the quality of the education system. Then, labour market support policies are needed to encourage the incorporation of young people in order to enable them to develop a family project. However, it must be ensured that unemployment benefits and other measures really act as automatic stabilisers to protect children –who lose out considerably in the final economic cycles- just as pensions protect the maintenance of resources for the elderly. All of this, without forgetting the need to reform pensions in the face of the already imminent ageing process. In any case, it is clear that the best way to guarantee decent pensions in the future is an education system that guarantees young people's access to the labour market.

The issue is not a trade-off between supporting children and dependent adults. Children and the elderly are the same people at different times in our lives. The best way to protect the elderly is to start from an early age, so that they can develop a dignified life project that guarantees that they will reach old age in the best conditions. This is the great challenge of the 21ST century welfare state. ■

PRESENTACIÓ

THE AUTHORS OF 'THE INTERGENERATIONAL BALANCE OF WELFARE'

Gemma Abio Roig

A graduate in Economics and Business Sciences from Pompeu Fabra University (1997), she holds a PhD in Economics from the University of Barcelona (2002), and has been an associate professor at the UB's Department of Economics at the Faculty of Economics and Business since the end of 2007. She has carried out her research primarily at the UB's CAEPS Research Centre (Centre for Economic Analysis and Social Policies - University of Barcelona) and focuses on the sustainability of fiscal policy in terms of the challenge faced by an ageing population, both from a theoretical standpoint (in the scope of models of overlapping generations with endogenous fertility) and an applied one (aggregate accounting models, such as generational accounting), and she is currently involved in the National Transfer Accounts (NTA) project.

Andreu Domingo

He holds Doctor in Sociology and a Master's degree in Demography, and is a researcher and deputy director for the Centre for Demographic Studies (CED) at the Autonomous University of Barcelona (UAB). He is chief researcher of the Demography and Migration Study Group (GEDEM; http: // ge- demced.uab.cat/es). President of the Association of Historic Demography (ADEH), which brings together demographers from Spain and Portugal, and a full member of the Institut d'Estudis Catalans. He is specialised in international immigration and family formation, and has a keen interest in social imaginary and population analysis. Co-editor of Perspectives demogràfiques. Recent publications include: Demografía y posverdad. Estereotipos, distorsiones y falsedades sobre la evolución de la población. Barcelona: Icaria (2018) i Demografía zombi. Resilientes y redundantes en la utopía neoliberal del siglo XXI. Barcelona: Icaria (2018).

Gøsta Esping-Andersen

Professor of Sociology at Pompeu Fabra University (UPF), where he heads the DEMOSOC research unit. In 2009, he was appointed professor ICREA-Academia. Born in Denmark, he studied Demography, Economics and Sociology at the University of Copenhagen and the University of Wisconsin-Madison, where he studied his doctorate. His scientific work focuses on life course dynamics, social stratification and comparative social policy. He was also a professor at Harvard University, the University of Trento and the European University in Italy. His publications include The Three Worlds of Welfare Capitalism, for which he won the APSA's Aaron Wildavsky Enduring Contribution Award in 2005, The Social Foundations of Postindustrial Economies (translated into Italian and Japanese), and Trois Leçons sur L'Etat Providence (París, Le Seuil). He is a member of the British Academy and the American Academy of Arts and Sciences, and has an honorary doctorate from the University of Roskilde and the University of Copenhagen. He is currently a professor at Bocconi University in Milan.

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Juan Francisco Jimeno

He has a degree in Economics from the University of Alcalá and a PhD in Economics from the Massachusetts Institute of Technology, He is currently an advisor to the Bank of Spain's General Directorate of Economy, Statistics and Research and an associate professor at the University of Alcalá. He is also an associate researcher at the CEPR (Center for Economic Policy Research) and the IZA (Institute for the Study of Labor). He has published articles on economics in numerous national and international academic journals.

Aitor Lacuesta

He is head of the Bank of Spain's Structural Analysis Division. This division develops fiscal and labour micro-simulators to analyse the impact of different policies (such as VAT, personal income tax, pensions, IMV, SMI, Social Security contributions, and unemployment benefits). He is also responsible for conducting research related to the impact of economic shocks and regulations on the labour market and business in Spain, which is published in top national and international scientific journals. He holds a PhD in Economics from the University of Chicago. He has given classes at the Deusto Business School the Instituto de Empresa Business School. Throughout his career, he has also worked for the World Trade Organization and for Jose Manuel Campa's office as Secretary of State for Economic Affairs between 2010-2011.

Guillem López Casasnovas

He holds a Degree in Economics (awarded outstanding) and a Degree in Law from the University of Barcelona, as well as a PhD in Economics from York University (1984). He was a professor of Economics at Pompeu Fabra University where he was vice-rector and dean. He was a visiting scholar at Stanford University (1991), and in 1996 he founded and directed the Centre for Research in Health and Economics. Former Governing Director of the Bank of Spain (2005-2017). He is a distinguished member of the Catalan Association of Economists; full member of the Royal Academy of Medicine of Catalonia and the Institute for Catalan Studies. Former president of the World Health Economics Association. He is president of the

Free Theatre Foundation and is patron of the Temple of the Sagrada Familia. He was awarded the Saint George's Cross and the Trueta Medal for Healthcare Merit, and the Balearic Islands' Ramon Llull Award. He holds an honorary doctorate from the ISALUD University of Buenos Aires.

Ronald Lee

Lee is an economic demographer (Berkeley MA, Harvard PhD) who taught in Demography and Economics at Berkeley from 1979-2014 and now does research on macroeconomic consequences of population aging, evolutionary demography, and mortality. He is Founding Director of the Center for Economics and Demography of Aging (CEDA) and Founding co-Director of National Transfer Accounts (NTA). He is an elected member of the US National Academy of Sciences, American Association for the Advancement of Science, American Academy of Arts and Sciences, the American Philosophical Society, and a Corresponding Fellow of the British Academy. He is former President of the Population Association of America and a Laureate of the IUSSP, with honorary doctorates from Lund University in Sweden and the University of Montreal in Canada.

Pau Miret

He is a researcher at the Centre for Demographic Studies (CED), associate professor in the Department of Sociology at the UAB and collaborating professor at the UOC. He has a degree in Sociology from the UAB, a Master in Demography from the CED and a PhD in Sociology from the UNED. He is a member of the Population and Demography Sociology Group of the Spanish Federation of Sociology, and member of the Editorial Board of the Sociology Papers journal of the UAB's Department of Sociology. His latest research is on early school leaving and differential retirement patterns. He recently published (2020) Abandono escolar temprano en España: generación, género y territorio, in: García Concet et al. (eds.), Políticas públicas frente a la exclusión educativa, and with Antía Domínguez and Pilar Zueras, "La pensión pública de jubilación en España: una triple discriminación de género" (Spanish Journal of Sociological Research).

Ció Patxot

She is a professor of the Department of Economics at the University of Barcelona and a researcher at the BEAT (Barcelona Economic Analysis Team). Her research in the interaction between demography, economy and public policies —especially intergenerational transfers— have led to the publication of more than 25 articles in specialised journals, as well as participating in 40 more publications (books, reports, etc.). She has participated in more than 30 projects, many of them as chief researcher on regional, state and European levels. She is currently vice-chair of the international project: National Transfer Accounts (NTA). Between 2006 and 2010, she coordinated the research on the effects of population ageing at the Institute of Fiscal Studies (Madrid). She has collaborated as an adviser to the European Commission in relation to pension, health and dependency policies in the framework of the open coordination method.

Pedro Salas Rojo

He is a pre-doctoral researcher (FPU) and lecturer for the Department of Economic Analysis and Quantitative Economics at the Complutense University of Madrid. Graduated in Economics from the University of Malaga, he studied the double master's degree in Economic Growth and Development (MEDEG) at the Carlos III University in Madrid and at the University of Lund. He is also a member of the Equalitas network and the Complutense Institute of Economic Analysis (ICAE).

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Professor of economics at the School of Economics and Business, University of Ljubljana. He studied at the University of Ljubljana and visited Vienna institute of demography, UC Berkeley and East West Center Hawaii as a researcher. His main lines of research are intergenerational transfers and economic consequences of population ageing with the focus on long term sustainability and pensions. He collaborates with national and international organizations and policy makers and he has been involved in numerous national and international projects. Among the topics he teaches are National accounts and intergenerational transfers, Demography, Economic statistics, and Labour economics.

Guadalupe Souto

Graduated in Economics and Business Sciences from the University of Santiago de Compostela, with a doctorate from the Autonomous University of Barcelona, she is an associate professor for the Department of Applied Economics at the Autonomous University of Barcelona. Both her teaching and research focus on various areas of the public economy. In particular, she has worked in the field of public project assessment, environmental economics, and more recently, her research has focused on the analysis of public spending policies, such as pension systems. She collaborates on different national and international research projects that analyse the socio-economic impact of the ageing population, and is a member of the Spanish team of the National Transfer Accounts project. The results of her research have been published in internationally renowned journals.

Tanja Istenič

Assistant Professor of Economics at the School of Economics and Business, University of Ljubljana (SEB LU). She holds a PhD in Economics from the SEB LU. For her PhD studies she received Award for the best student achievements of the University of Ljubljana. She teaches Introductory Statistics, Microeconomics, Monetary Economics, Research Methods and Techniques and Advanced Macroeconomics. Her research focuses on economic dependency and intergenerational transfers, socioeconomic effects of population ageing and gender (in)equality. She actively participates scientific conferences and publishes her work in domestic and international publications. For her research work she received several international prizes.

Lili Vargha

Humboldt Research Fellow at Humboldt University of Berlin and a fellow at the Hungarian Demographic Research Institute. Her research interests include intergenerational transfers, costs of childbearing, economic life-cycle, unpaid household labour and research methods.

THE FORMATION OF THE FAMILY AND HOUSEHOLD STRUCTURES IN 21ST CENTURY CATALONIA: A GENERATIONAL PERSPECTIVE

Andreu Domingo
Pau Miret Gamundi
Centre for Demographic Studies/CERCA

Introduction: family, home and transitional processes

From the last quarter of the 20TH century onwards, a series of demographic changes began to unfold that would eventually affect the make up of the family and the structure of the household. These were conceptualised as the "deinstitutionalisation of the family". (Roussel, 1989). The low fertility rate, the delayed age of motherhood and the reduction in the family size, as well as an increase in the number of separations and divorces, the decrease in marriage and the increase in cohabitation were the first symptoms.

The fact that these changes, at an early stage, occurred more commonly in Scandinavian countries, which had a strong welfare state, caused the discussions to focus as much on the consequences that the different types of welfare state could have on women's autonomy (and as a result, on the formation and morphology of families), as on the changes in generational values (Inglehart, 1977) as the driving force behind family transformations, which since the mid-1980s was known -not without controversy- as the "second demographic transition" (Van de Kaa, 1987, and Lesthaeghe, 1991). Almost parallel to this, Gary Becker (1991) who would end up winning the Nobel Prize for Economy, tried to explain the reduction in birth rate in terms of "the increase in the cost of children" and them becoming a scarce asset. Very soon, therefore, there was a tendency to interpret these changes as a symbol of modernity, in line with economic development and the free (and rational) choice of parents. The prolongation of youth dependence and its domino effect on the delay in forming a couple, or the impoverishment of single-parent households, marked by the *baby boomers*, were thought to be a side effect that was more closely linked to changes in lifestyle or morality than to economic constraints.

Meanwhile, two more demographic phenomena would alter family morphology: longer life expectancy and migration. Already by the mid eighties the extraordinary increase in life expectancy began to draw attention, which enjoyed, among other

things, the improvements in the previous health care system. Suddenly there were three and four generations of the same family all alive at the same time, which became known as "verticalisation of the family", taking into account the decrease in fertility that had occurred at the same time and its consequence on the transmission of goods (especially housing) as well as in the proliferation of single-person households inhabited by an elderly person. Parallel to this, at the beginning of the 21st century, with the acceleration of migration as a result of globalisation, the focus shifted to households formed by immigrants, which would raise interest in two directions: firstly in their own dynamics in the formation and size of the family and in the diversification of household structures, and secondly in their role in the chain of housing vacancies due to ageing local owners.

Catalonia has been no exception, neither in the evolution of family changes, in the extent of growing life expectancy, nor in migrations. Here our aim is to portray the evolution of the formation of the family, for the generations born between 1950 and 1999, in the new millennium, in three aspects that we consider paramount: 1) the changes in young people's living situation necessary for starting a family, 2) the transition to fertility in forming a family and 3) the position occupied by these generations in the various types of household in 2019.

Leaving home and starting a family

Young people

Every transition in the course of life has substantial economic connotations. If this were a traditional study, this section would be about marriage, since this used to be the rite of passage of youth into the adult world. However, the shift in values forces us to change the subject, so we will be focusing on young people leaving home. This chapter will also focus on the generational aspect as a contributing factor. To study this, we will use the Labour Force Survey (LFS), a source containing quarterly waves with detailed reports on the cohabitation situation of households. The time frame spans from 1980 to 2019, so not all generations born between 1950 and 1999 can be fully observed, as some have information missing from one end, because by 1980 they had already left their youth behind (1950-1955), while others will be missing information from the other end, given that in 2019 they were still too young (1995-1999).

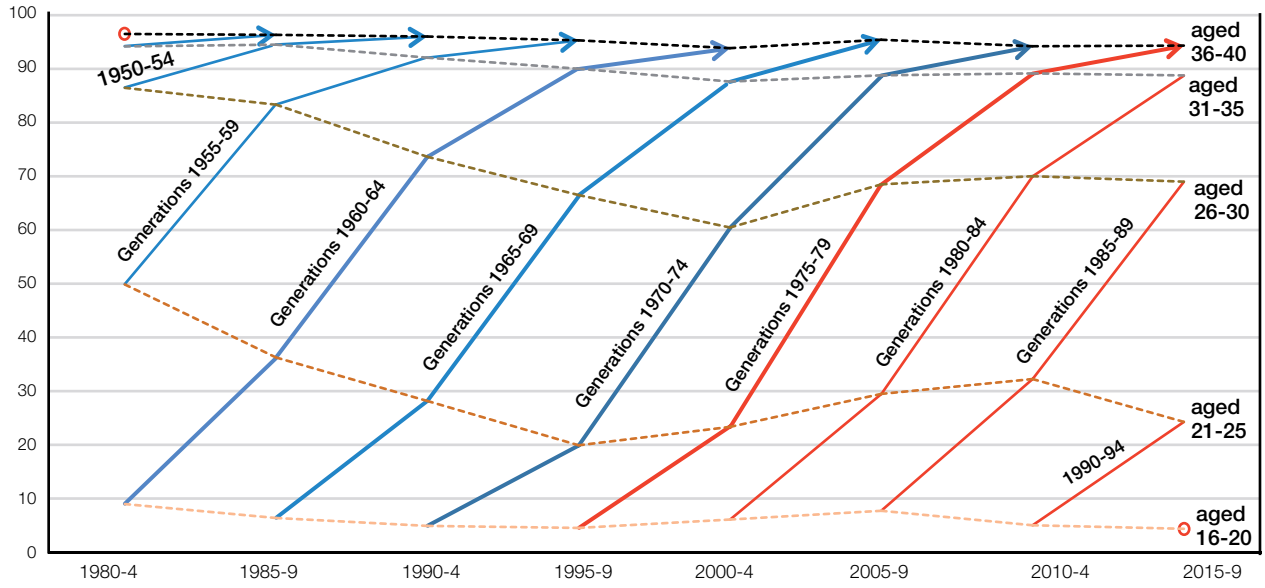
The methodology used to understand the reasons for youth leaving home takes into account two aspects: family formation and housing. The latter would correspond to the time they left

"Catalonia has been no exception, neither in the evolution of family changes, in the extent of growing life expectancy, nor in migrations"

their parental home and moved to an independent home, and the former is linked to the formation of the couple or a first child being born. As mentioned previously, it used to be common for family formation to coincide with a change in marital status, from being single to being married - a transition that was permanent, because once someone got married, they could never go back to being single; in any event they could become divorced or widowed. Therefore, we will consider the state of marriage, divorce or widowhood as an indicator of family autonomy. In recent times, cohabitation (without being married) or consensual union has been added to this legal change of status, although it is a variable that gives us no information about the past but only reports the present status. Despite this obstacle, we will consider those living as couples at the time of observation as having left home and become independent. To complete the family dimension of independence, we have also added living with children, even if the couple do not live together. The concept of leaving home has another dimension, that of housing. That is, having left the home of the family of origin to form a home for oneself, either alone or in a peer group. In this case, there is no retrospective information either, only that regarding cohabitation at the time of observation.

Graph 1 (on the next page) illustrates the proportion who left home in three time dimensions: the period of observation (on the horizontal axis), the age group or biographical stage (the dotted lines crossing over), and the generations or course of life, with arrows from left to right, corresponding to cohorts born from 1940-1944, of which we only have information at one stage for the 36-40 age group, until 1995-1999, of which we only have information for the 16-19 year old cohort. With this overview we can see that leaving home occurred later and later until the generations of 1970-1974, and that, for any age group, the proportion of those already independent fell sharply, especially between the ages of 21 and 30. To find out why, there was no need to look for any change in cultural values (such as that which claims that young people did not want to leave home because they were too comfortable), but in an economic down-

Graph 1. Percetage home-leaving by age, period, and female generations born between 1940 and 1999, Catalonia



Source: author's own using the LFS (INE).

turn called "energy crisis", which made leaving the family of origin more difficult, due to an increase in housing prices and a lack of public policies that could alleviate these difficulties among young people. The path to independence was in the hands of private markets and the families of origin. However, from the cohorts born in the mid-seventies, there was a turning point in this trend, with a progressive rejuvenation of the patterns of independence, coinciding with improving economic expectations and the optimism of the change of century. This exceptional trend towards rejuvenation continued until the sudden recession of 2008, when it began to fall back again. While youth cohorts 1975-1985 were able to enjoy the improvement, the *millennials* have a strong tendency to put back the age of becoming independent from their families.

Based on the trends by age groups observed, we have estimated the information we lack for the older generations and extended that of the younger ones. This can be summarised in an mean age, which is illustrated by sex in Graph 2 (on the next page), where we have added another indicator of key importance: the proportion of young people who opt exclusively to become independent in order to have their own home without forming a family home.

In general, we can say that the average home leaving age in Catalonia has evolved cyclically, following the patterns of economic phases and remaining unaffected by changes in public policies, with a consistent difference of between 2 and 2.5 years between sexes. In any event, the estimated mean age that young people formed a family or home for the 1950-1954 generations (for women, 22.6 years in age, and men, 25.4 years old) has never again returned. In addition, while this average was pushed back to the maximum by the 1970-1974 generations, to a threshold of 27 years old for women and 28.5 for men, the subsequent rejuvenation has led to the fall in this indicator, which ended up, for the generations of 1985-1989, as 25.8 years old in women and 27.3 for men. Finally, we estimate that the *millennial* generation will become independent even later, at the ages of 26.8 and 29.0 respectively.

However, there is one aspect that does not depend directly on economic conditions, but is based on socio-cultural change: those who take the housing option only in the transition to independence. Indeed, while it is estimated that around 5% of those born in the early fifties took this route, this phenomenon gained ground among *baby boomers* and has risen sharply among *millennials,* with a significant gender gap, as men opt

for this route more than women: among the more recent generations, while about 25% of men will take the non-family route to independence, there are 10 percentage points less women who choose this option. This gender disparity and the new social reality of the increasingly widespread tendency to become independent from the family without forming a couple will have to be analysed in further research. Is the model still standing in which the task of family care is predominantly in the hands of women? Is the persistence of traditional roles an obstacle for fertility, as some authors point out (Esping-Andersen and Billari, 2015)? Is the traditional model of intergenerational transmission —both economic and service— anchored in the family institution, breaking apart?

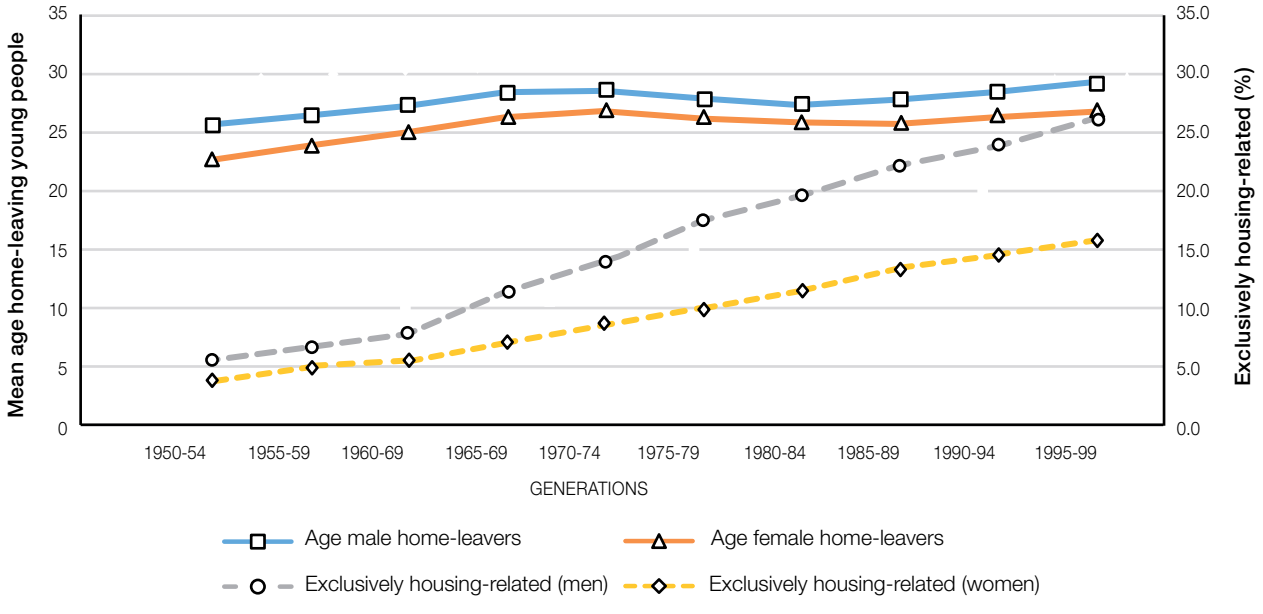
A second step in forming a family: fertility rates through the generations

In order to analyse data regarding first-time parenthood from a generational perspective, we have formed the specific primary rates based on records published in the Viral Statistics (VS) and Population Statistics extracted from local registers. From here, we set out the specific rates of first-time parents from an initial age (15-19) to the age at which they can be observed with the latest data from the VS, which at the time of writing this article are from 2018.

> *"The average home leaving age in Catalonia has evolved cyclically, following the patterns of economic phases and remaining unaffected by changes in public policies, with a consistent difference of between 2 and 2.5 years between sexes"*

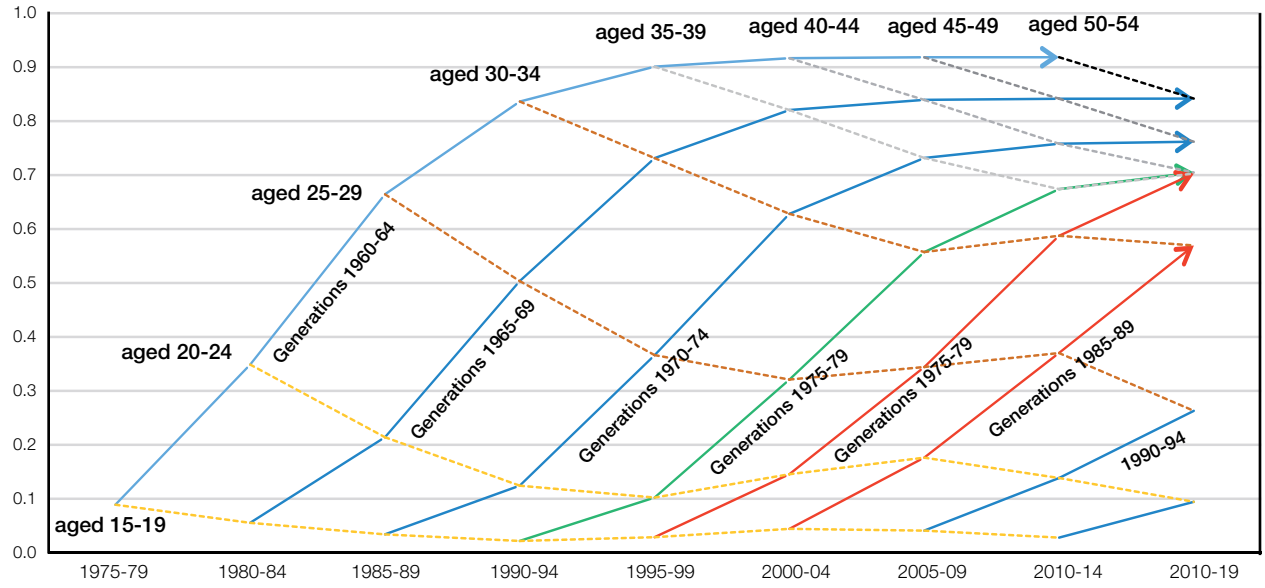
Graph 3 outlines the patterns for first-time parenthood in Catalonia according to three temporary dimensions: observation period, age group and generations involved. The interpretation is identical to that which we presented in the previous section. The maximum number of first births is obviously one, as it can never reoccur. The first cumulative pattern that we have for the 15-19 age group is for those born in 1960-1964 (since the first VS is

Graph 2. Mean age of home-leaving and percentage opting for the non-family route in generations born between 1950 and 1999 per sex, in Catalonia



Source: author's own using the LFS (INE).

Graph 3. Patterns of first-time mothers accumulated, female generations born between 1960 and 1999, Catalonia



Source: author's own using the VS and local population registers.

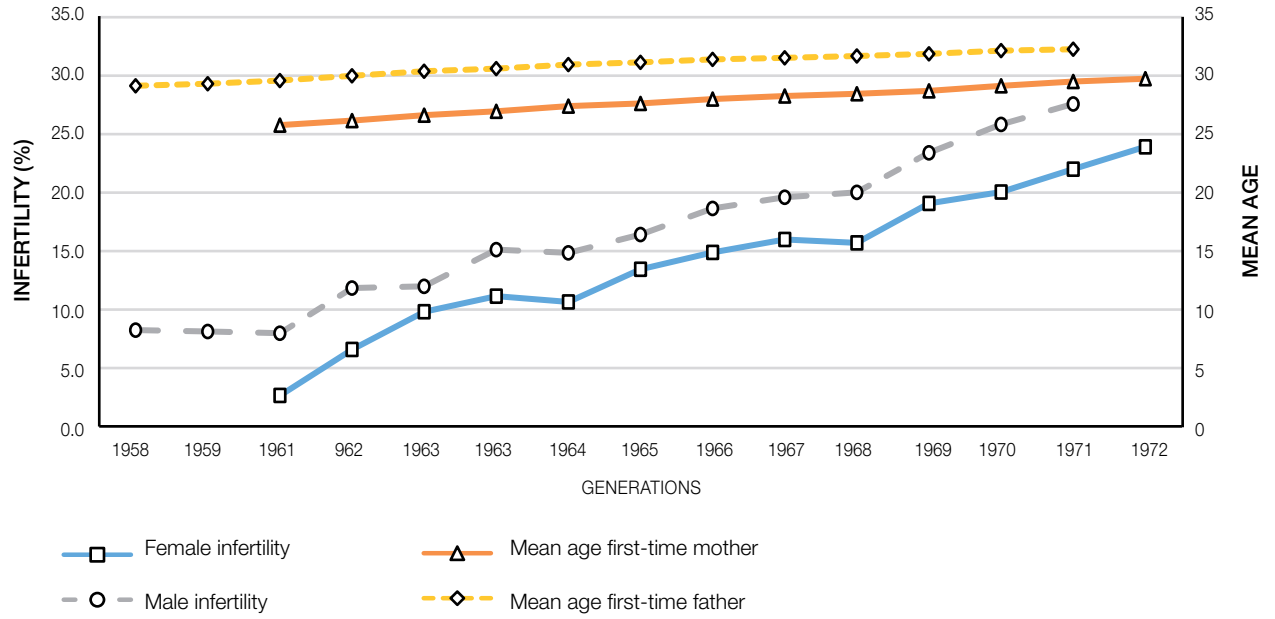
from 1975). This group, by the age of 35-39 had already reached the end of this scale, with a definitive indicator of 0.92 births per woman, that is, an infertility of 0.08, or 8%. With this pattern we calculated the mean age of first time mothers was 26.6 years old. None of the younger generations became first-time parents at this intensity in such a young age span.

Indeed, we can observe how the final intensity fell sharply while age increased significantly until it reached all time records with the generations of 1975-1979, which recorded 0.70 first births per woman with an mean age of 30.1, that is, 30% of those born in this period had not become mothers yet, and those who did, had their firstborn after the age of 30. As an example of this delay in age, we find that while half of those from the 1960-1964 generations had had at least one child at the age of 25-29, among those born in 1975-1979, only one in three had become mothers during this age span. Essentially, between those born in the sixties and seventies, infertility increased by 22 percentage points and the age of first-time motherhood was delayed by 2.5 years. This evolution should be highlighted for its significance and the speed it occurred, considering the reality we see today, in which not having children is on its way to reaching 1 in 3 individuals in Catalonia.

However, the economic recovery of the late 20TH century led to a timid rise in fertility, as can be observed from the patterns in the cohorts born in the 1980s, but the 2008 crisis put a halt to this small revival, to which incidentally, immigrant mothers also contributed, albeit to a limited extent: 0.11 percent in 2018. This recovery did not raise the intensity indicators, although they do show slightly younger statistics. As we have observed, this revival was preceded by a rejuvenation of young people's independence, which would demonstrate that demographic biography is also linked. But it also shows that it is closely linked to the economic context, which indicates the glaring absence of public policies, both for young people and families. The experience of the COVID-19 pandemic will not contribute anything positive in this sense. In fact, we can see from the statistics we have for the 1995-1999 generation, which begins in the same way as for those born 20 years earlier, and there is nothing to suggest that it won't continue the same, that is, recording one of the lowest fertility rates, both in a particular time period and on a global level.

The indicators in Graph 4 summarise these patterns by singular generations and by sex, for those cohorts that we have been able to follow from the beginning and the first-time parenthood we can conclude because the accumulated levels

Graph 4. Infertility and mean age of first-time parenthood, per sex, among generations born between 1958 and 1972, Catalonia



Source: author's own using the VS and local population registers.

are maintained. It should be taken into account that the first birth is recorded in relation to mothers and not fathers, and that there are births where no father (or second mother) is recorded for the newborn. From these records we can see that, on one hand, being a first-time parent has always been more evident in women than in men, which also means that male infertility has always been higher than female infertility, and on the other hand, the age at the time of the first fatherhood has always been later than that of first motherhood, although the ages have become closer together, ranging from a 3.8 year difference for the older generations to 2.8 for the youngest.

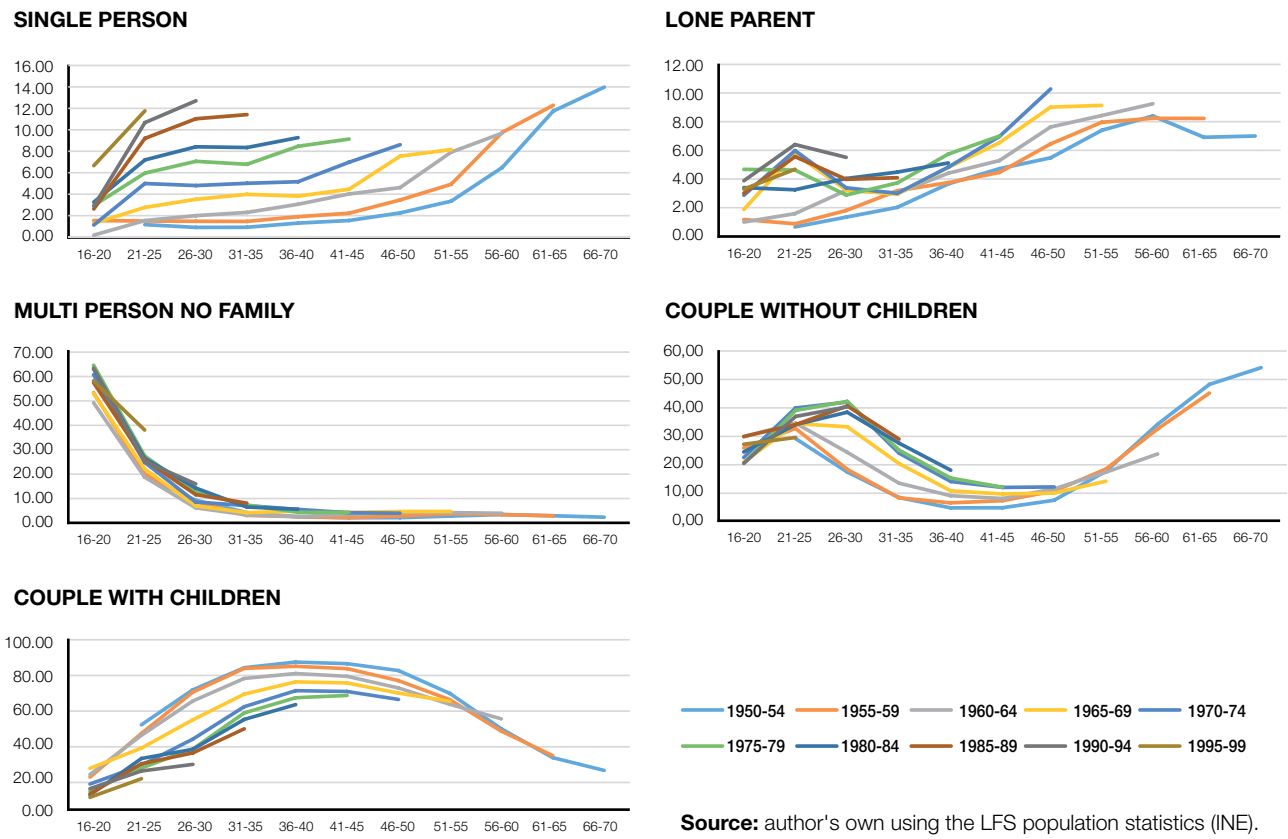
In general, infertility has grown almost in a linear manner for the generations observed, as while it affected 3% of women born in 1960 and 8% of men of the same generation, the figures are 24% for women and 28% for men in the cohorts from the early 1970s. In addition, the mean age of first motherhood has risen from age 25.8 from the 1960 generation to 29.7 for those born in 1972, while fatherhood from the same groups has risen from age 29.3 to 32.3.

Although the prognosis is a reserved one, it would not seem unreasonable if -based on the initial patterns we have presented and the socio-economic context expected in the short term for young people- we predict that the increase in infertility and the delay in parenthood still has a long way to go, leading 30% of the youngest generations in Catalonia to have no children, while the age threshold of those who have at least one child will surpass the age of 30 years in the case of women and 32 in men. It will all depend on the depth of the economic depression we are currently facing, as public policies that could alleviate the situation neither look likely, nor quite frankly, are expected.

Types of family household by generation

In this last section we will look at the types of households — single-person, multi-person without a family, couples without children, couples with children, and lone parents— in which the various generations aged from 16 to 70 have lived. The point that stands out most clearly is the direct effect of the prolongation of youth and the consequent delay in forming a couple and parenthood, on family types, as well as the increase in divorces (reflected in the evolution of single parenthood). However, indirectly the impact of migrations will also be noticeable (almost a third of people from generations born in 1985 in single-parent households were born abroad), as well

Graph 5. Type of household per age, five year age groups between ages 16 and 70 for different generations born between 1950 and 1999, Catalonia



Source: author's own using the LFS population statistics (INE).

as longer life expectancy (11% of people living in single-person households were over 56 years old). Although all five-year generational groups have been represented from 1950 to 1999, to understand the context and the presumed evolution, we will focus on those which have a more complex background.

Therefore, despite the home-leaving age being later by generation there is a gradual but slow growth of single-person households in line with the succession of generations, which reveals certain information about the family cycle: while for the older generations born between 1950 and 1969, the figures remain in proportions lower than 5% in the young age group, this percentage only begins to increase in maturity and old age, and more recent generations have simply increased the weight of young people living in single-person households, which are more than 10% between the ages of 26 and 30 for generations from 1985. For the younger generations, the increase in the proportion of those living alone is greater in all age groups, so single-person households appear equal for all agegroups aged from 20 upwards. This evolution contrasts with the gradual decline of couples with and without children.

The delay in the home-leaving age is evident in the modal group of couples without children, up to age 26-30 years in generations born after 1975, with 40% of young people in this situation, then taken over by couples with children. From ages 31 to 35 years, however, the progressive increase in comparative weight by childless couples in recent generacions is mainly due to infertility, up to at least aged 45-50. Although couples with children remain the most prevalent type of household during youth and maturity, generation after generation a progressive loss in weight can be observed: so 88.4% among people aged between 36 and 40 in the generation born 1950-1954, falls to 62.8% when we look at those born 1980 to 1984, which is a proportion that will be ahead the youngest generations if we are to

judge by the same trend. The increase in lone parenthood, and that of single-person households, would be the reason for this decline. Here, too, among the youngest couples, the proportion of those born abroad increases, so between the ages of 26 and 30, the percentage of those born abroad in the generations born after 1975 accounts for more than a third of couples with children. Despite this reality, in lone parenthood, following a progressive growth that reaches its maximum for the generation born 1970-1974 aged 46-50 years with just over 10%, it seems that the trend of the younger generations will be for this proportion to be reduced. Obviously here we are observing both sexes together, and this in reality a more female-oriented situation.

Finally, households without families remain a reality limited almost exclusively to the youngest ages for all generations, which is probably accounted for by student homes, and in recent generations, the early stages of migration.

Conclusions

The generations born in the last half of the 20TH century have accounted for the most significant family transformations in Catalonia, especially the *baby boomers*, the category where these changes can be seen most clearly in relation to the structure of households. In terms of the formation of the family, this was primarily caused by the economic cycle. Because, as we have seen, the economic situation marks the delay in home-leaving age and in initial parenthood in these generations. The increasing intensity of negative cycles does not compensate for the timid recovery that took place from the end of the twentieth century until the recession of 2008.

Household types have become more complex, or rather, households not formed by couples with or without children have gained ground. Other long-term factors have contributed to this growing complexity, such as population ageing, and combined factors such as migration. Although couples with and without children continue to be the most represented type of household in all generations and account for more than half of the adult population, their schedule has been pushed back in that, first the home-leaving age was postponed, and then the age of parenthood was, at the same time as infertility grew. This delay will also have an impact on the family life cycle of each individual: the number of years lived with their partner are lower, and for a growing and significant part of the population, married life with children -previously an almost universal phenomenon- disappears from the timeline. The deinstitutionalisation of the family, that is, the replacement of marriage by cohabitation, does not compensate for this decline. Nor can growing migration -in general, with earlier home-leaving patterns and earlier fertility- change this progression.

The prospects for the future, given the trend of the most recent generations, are not very favourable for a recovery in figures, and the experience of the pandemic makes them even less so. In fact, this has halted a new migration cycle that had begun in 2014, and for the time being, it is difficult to gauge its economic repercussions. Even worse, if we refer to the repercussions on the expectations of the younger generations, the dystopian outlook experienced must weigh like heavy stones on promoting reproduction, even though periods of lockdown have reinforced a sense of family as a protective structure.

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THE EMPLOYMENT SITUATION OF YOUNG PEOPLE IN THE LAST 25 YEARS

Aitor Lacuesta
Bank of Spain

This article will reveal how generations born between the late 1970s and the mid-1990s have come out of the COVID-19 pandemic quite badly affected. The housing boom experienced between 1995 and 2007 reduced the human capital of those born between 1976 and 1995, as many preferred to opt for low-skilled jobs. Different factors such as duality, the scarce number of policies aimed at reducing negative disruption for young people and difficulties in accessing the rental market all contributed to increasing the complications caused by the two crises experienced in recent years. Additionally, new generations of young people, born between 2002 and 2014, will have to make an effort to improve their education, which has been negatively affected as a result of the pandemic in a scenario of greater structural job insecurity.

Introduction

Following the COVID-19 pandemic, many international organisations have expressed concern about the economic situation of young people. This concern is justified, firstly, due to the fact that these were still dealing with the aftermath of the great financial crisis. Secondly, the pandemic has significantly affected the economic possibilities of young people. Finally, it is generally acknowledged that a negative disruption at the beginning of a career significantly affects an individual's economic possibilities in the long term.

This article examines these issues in three periods: the great financial crisis (2008-2014), the recovery (2014-2019) and the COVID-19 pandemic (from March 2020 onwards). The work summarises a series of articles published by the author and other members of the Bank of Spain's General Directorate of Economics on the subject, and adds value by organising sets of ideas that were disjointed and enhancing them in each area with additional evidence in order to reach orderly conclusions of economic policy.

In particular, regarding the decisions by young people in terms of involvement and participation in training over these years, the article is based mainly on Lacuesta *et al.* (2020), which analyses

how the housing boom of 1995-2007 increased the expected relative salaries of young people in jobs that required little training and as a result, reduced the duration of their studies. This article is not the only one that shows how changes in job opportunities for the poorly educated population affected their level of education. This was also set out by Abramitzky and Lavy (2014) and Aparicio (2016), although it is one of the few where it is clear that the reduction affected the number of university graduates. The great financial crisis made young people improve in this regard. Therefore, generations born later than 1995 will have recovered past trends in terms of education (Bank of Spain, 2019). In this article we add a brief discussion that characterises the type of university course chosen by young people over the last few years.

The impact of the great financial crisis on young people's income is clearly set out in Puente and Regil (2020). Spain is not the only country where this occurs (Banerji et al., 2014). In this article, in addition to reviewing these developments, we will zoom in on the different policies that are available to young people to reduce the effects of the disruption, albeit in a limited way. In this sense, it is not surprising that Anghel et al. (2019) have found that many young people seek assurance in their parental home, which will have a knock-on effect on other decisions with long-term implications such as savings, buying a homem or starting a family.

The economic recovery from 2014 led to a partial recovery of young people's income, given that one of the trends that was already evident in recent years was intensified: the rise in the precariousness of labour relations. This is documented in Regil and Puente (2020), which illustrates how the duration of temporary employment relationships is becoming shorter and part time work is increasing exponentially. This situation is not specific to the Spanish economy and has also been seen in other countries (World Bank, 2019). This article aims to give an overview on which groups and sectors are most affected by these phenomena. What is clear is that young people have not regained their pre-crisis income levels and as a result, their decisions regarding savings have been compromised. Many have continued to live in their parental homes or at the most, have been able to rent an apartment. This is documented in Bank of Spain (2019b) with the results of the financial survey on families. The increase in rental demand in a very narrow market has led to a considerable increase in prices, adding to the population's unrest (López-Rodríguez and Matea, 2019).

"The economic recovery from 2014 led to a partial return to pre-crises levels in young people's incomes, while the labour relations became increasingly fragile."

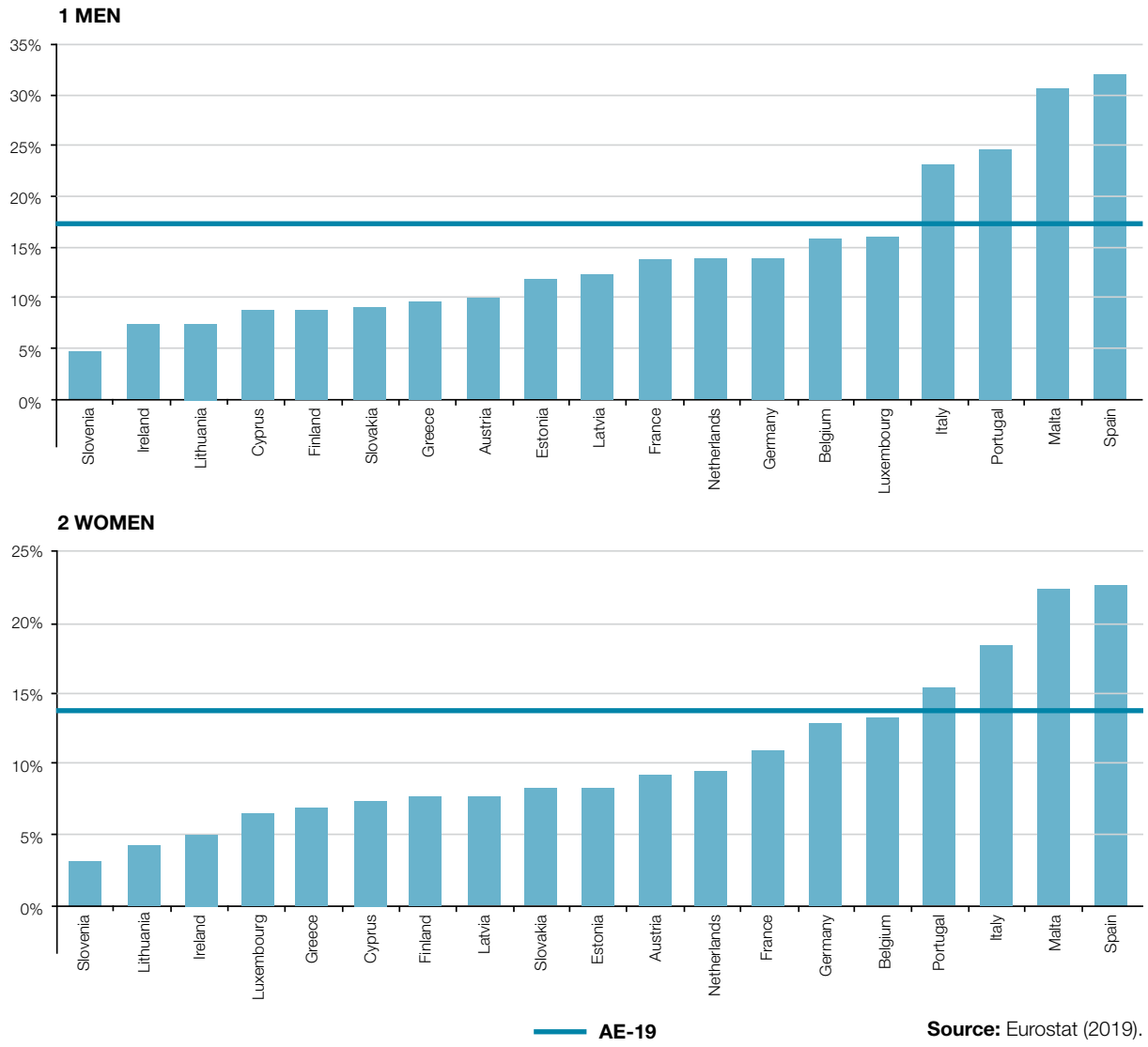
Finally, in response to the pandemic, many governments have put a halt to business in certain jobs that required physical contact with customers and other workers. Even following the lockdown measures, the demand for certain products that required personal contact has not picked up. This has especially affected tourism, restaurants and leisure, sectors where young people are very highly represented (Anghel, Regil and Lacuesta; 2020). In addition, young people, in general, have had less access to remote working (Anghel, Cozzolino and Lacuesta; 2020). This has also happened in other economies, as illustrated, for example, by Mongey et al. (2020) for the United States, and Bell et al. (2020) for the United Kingdom, among others. This section will be a summary of the policies that have been implemented in response to the pandemic to maintain the income of vulnerable groups, and although they have increased compared to the great financial crisis, once again certain measures were not designed to protect young people. Finally, the health crisis may have affected the educational opportunities of those born between 2002 and 2014, which may add to their weaker position in the future.

With all that has been learned, the discussion in the last section is intended to list some of the economic policy measures that appear more suited to improving the working conditions of young people as a collective and in structural terms.

The educational level of young people in the last 25 years

The percentage of young Spanish people between the ages of 25 and 29 who have not completed any post-compulsory education is the highest in the countries of the eurozone. As shown in Graph 1, 32% of men between these ages had already left the education system after completing, at the most, compulsory secondary education, far below the average of 17% of countries in the eurozone. This reality is a little less dramatic for young women in Spain, with a 23%, although numbers are also far higher than their European neighbours (14%).

Graph 1. Percentage of the population aged 25-29 per educational level (2019)



Source: Eurostat (2019).

To some extent, this fact reflects a characteristic production structure in which employment opportunities for low qualified workers are abundant at a very young age[1]. So, for example, the boom in the housing sector, largely responsible for economic growth between 1995 and 2007, considerably increased jobs and relative salaries of employees with limited training, which resulted in a decrease in the educational level of the population. Graph 2, taken from Lacuesta *et al.* (2020), illustrates how those generations who began work prior to the housing boom showed continuous improvements in training. This growth came to a drastic halt as of the group born in 1976 and began stagnating, or even showed a reversal of human capital for each generation following on until 1990. The generations born in between these years would have completed their compulsory education between 1993 and 2007, years of great job opportunities in construction and where wages were high regardless of the level of training. Interestingly, Lacuesta *et al.* (2020) show that this sudden halt mainly reduced the number of young people who would have

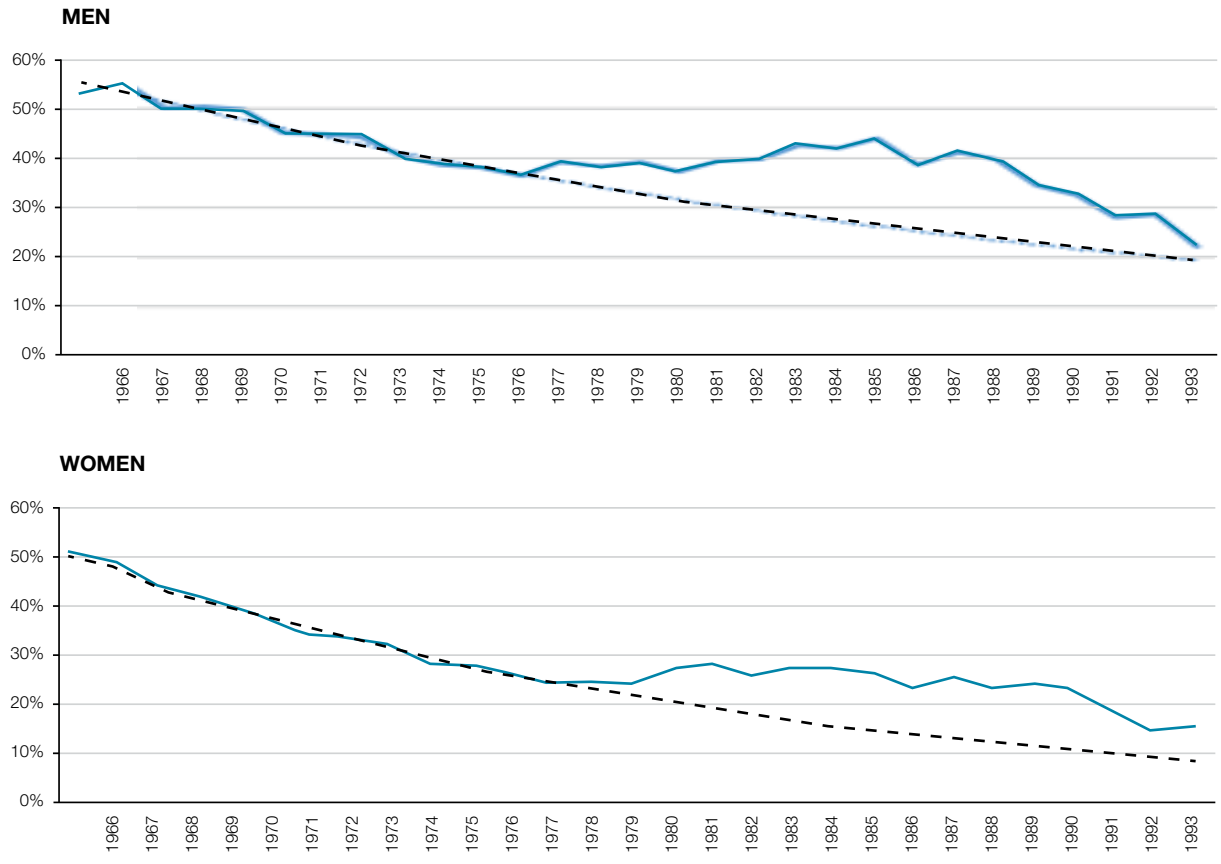
1 References on this can be found in Aparicio, A. (2016). "Returns to Education and Educational Outcomes: the Case of the Spanish Housing Boom", *Journal of Human Capital*, vol. 10(2): 235-265, o Lacuesta, A., Puente, S. and Villanueva E. (2020). "The Schooling Response to a Sustained Increase in Low-Skill Wages: Evidence from Spain 1989-2009", *Series* de pròxima publicació.

accessed university or third grade vocational training. The authors show how neither high school nor intermediate level vocational training are important options for young Spaniards compared to what other young people choose in other systems. By contrast, while the percentage of young people who do not take any post-compulsory degree is very high in comparison to other countries, the number of people who complete a form of tertiary level education is also high. Therefore, the percentage of men and women between the ages of 25 and 29 who complete a form of tertiary level education is 43% and 54%, respectively, versus 35% and 45% in the eurozone.

In any case, the great financial crisis began in 2007 and generations born after 1990 ended up with no choice but to continue studying, since job opportunities were scarce. Due to this, young people have gradually improved their educational level in line with the previous levels reached prior to the housing boom, and generations born after 1995 would have returned to the percentages recorded before the boom if a similar educational trend had continued.

> *"The generations that began work before the housing boom tended to have continuous improvements in training. This growth came to a halt for those born from 1976 onwards"*

Graph 2. Percentage of Spanish citizens aged 25 and over with compulsory education, by year of birth



Source: Lacuesta, Puente and Villanueva (2020) with data from the labour force survey (INE), years 1992-2018.

> *The social sciences have the highest percentage of graduates in tertiary education at 30%, although they have decreased in recent years of economic recovery*

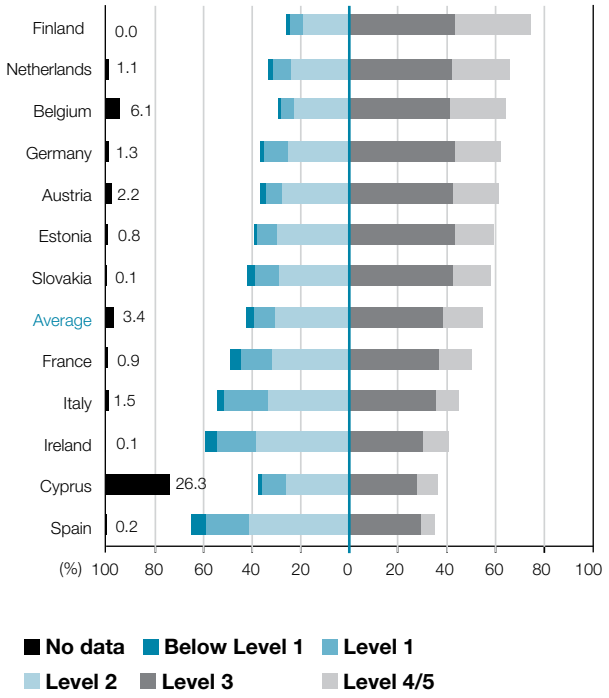
The large number of people in tertiary level education is by no means a guarantee that the Spanish university is a success in terms of training. Specifically, its polarised structure, with a large number of young people leaving the system before completing the baccalaureate or secondary vocational training, and a large number of young people who manage to accredit tertiary studies, would generate a huge dispersal in qualifications from standardised academic tests on an international scale like PIAAC tests (OECD). As can be seen in Graph 3, although young people aged 25 and 29 show a high percentage of people in the lower end of the grade distribution, there does not seem to be a particularly high percentage in the upper end. This could indicate that the quality of tertiary education is not particularly high either.[2]

If we zoom in on the type of courses studied by young university students, according to the National Statistics Institute's (INE) labour force survey, the social sciences accumulate the highest percentage of graduates in tertiary education at 30%, although they have decreased in recent years of economic recovery. In the years of the great financial crisis, the percentage of graduates on industry, construction and agriculture related courses also reduced, as well as industries with high unemployment rates at the time. On the other hand, there has been an increase in the number of graduates in education and health services, reaching 27% of graduates. In general, these qualifications have low unemployment rates and are relatively stable, as they are more related to the public sector (more than half of the graduates on these courses end up working for the public sector).

Regardless of the degree studied, it seems that there is room for improvement in the quality of the university system given the results of some world rankings. For example, in the Academic Ranking of World Universities (ARWU), which is made up of variables that measure the quality and quantity of scientific production, Spain does not have any university among the top 100 in the world, and only seven universities come in among the top 400. In comparison, France, Germany and the United Kingdom have 19, 27 and 34 respectively in the top 400[3]. Part of this difference may be due to the reduction in spending on tertiary education per student, which is far from the average expenditure in the 23 EU countries. Specifically in 2016, this spending stood at $12,614 per student for the 15,863 students in the 23 EU member states. In countries such as France, Germany and the United Kingdom, this spending exceeds $16,000 per student[4]. Just as important as spending, the OECD indicates that

Graph 3. Mathematical competence for adults aged 25 to 29 in eurozone countries

Percentage of adults aged between 25 and 29 scored for each level of competence



Source: OECD (PIAAC, 2013)
Note: countries are ordered in descending order for levels 3 and 4/5

2 The results of the Spanish compulsory education system for standardised PISA-type exams are mediocre compared to other countries in the eurozone, so it is possible that compulsory education also requires changes to improve its quality. An analysis on this can be found in OECD (2017). "OECD Economic Surveys: Spain" OECD Publishing. Paris.

3 http://www.shanghairanking.com/ARWU2019.html
4 OECD (2019a) "Education at a glance", OECD Publishing, París.

the quality of the Spanish university system could be improved by improving the selection systems for teaching and research staff, for example, by linking the funding system with obtaining excellent objectives.[5]

The great financial crisis and young people's income

Regardless of the qualifications, entering the job market in Spain begins with a temporary contract. The main difference between a temporary contact and a permanent contract is that with the first type, the employer does not have to dismiss the person in the event they wish to do so, since the contract expires automatically and there is no need to renew it. In addition, at the time of termination, the cost borne by the employer is low compared to the cost of dismissing a worker with a permanent contract. Some literature shows that this type of system facilitates the entry of young people into the labour market as it reduces the uncertainty of the employer, but in general it usually has important consequences in at least two areas. The first of these is that it generates a very unequal distribution of adjustment costs among employees in the event of negative disruptions. Thus, when figures are negative due to low-income, employers will tend to stop renewing contracts before taking on the costs of dismissing permanent workers, regardless of their relative productivity. The second area is that this system using temporary contracts allows for more intermittent employment relationships during the early years of the career, which has permanent effects on the potential of future income. In particular, when comparing young people with similar characteristics, who were able to access the Spanish labour market just before and after the liberalisation of temporary contracts in 1984, it is evident that, almost 30 years later, the latter have 7% less employment income than the former[6].

In this context, it is clear that the incorporation of young people into the labour market during the great financial crisis was very complicated, and it is very likely that this experience will have long-term effects for those generations. One figure is enough to get an idea of the magnitude of the problem: the

> *"The quality of the university system has room for improvement. In the Academic Ranking of World Universities (ARWU), Spain has no universities among the top 100 in the world"*

unemployment rate among young people between the ages of 25 and 29 increased from 8.96% in 2007 to 33.27% in 2013. Puente i Regil (2020) compare the situation of different generations at the same age by observing three interesting facts. First, they document what has already been mentioned here, which is that the younger generations have certainly faced a worse start to their careers during the years of the great financial crisis.

Graph 4 shows that the average working income received by workers aged between 20 and 30 with lower qualifications fell from just over €8,000 euros per year for those born in 1978, to about €6,000 for those born in 1987. Secondly, this lower labour income is due to less time in employment and not to lower wages, as the average hourly wage did not change much. Thirdly, aside from the effect of the economic cycle, the analysis suggests that most of this downturn has a cyclical nature, so it is to be expected that in the future, the young generations' situation once they enter the labour market should once again improve. This does not mean that the effects of those who entered during the crisis years are temporary. Quite the opposite, the generations that have recently entered the job market will suffer the effects of that complex entry for their entire career, because they have suffered periods of interruption during the early years of their career, which is the most important time to gain experience[7].

The unemployment mechanisms available to young people with a view to limiting the effects of cyclical disruptions are limited compared to those accessible to other older groups. First of all, only those who have been employed and therefore

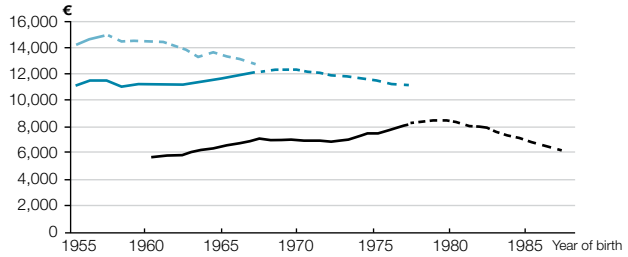
5 OECD (2019b). "Education Policy Outlook: Spain", OECD Publishing, Paris.

6 García-Pérez, J.I., Marinescu, I. and Vall Castelló, J. (2020). "Can Fixed-term Contracts Put Low Skilled Youth on a Better Career Path? Evidence from Spain", *The Economic Journal*, doi:10.1111/ecoj.12621.

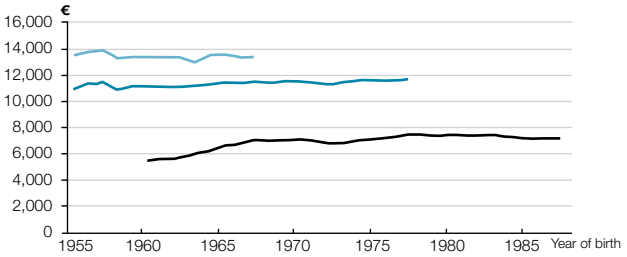
7 Jacobson, L., R. LaLonde, R. and Sullivan, D. (1993). "Earnings losses of displaced workers", *American Economic Review*, 83(4): 685-709.

Gràfic 4. Evolution of income earned at different stages of life

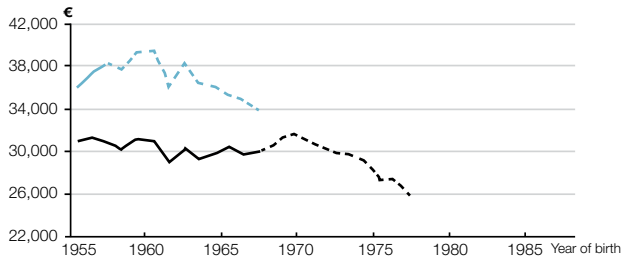
1 Income earned each decade per year of birth (d), lower education (b)



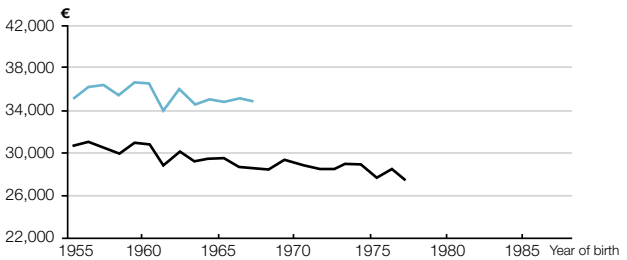
2 Income adjusted cyclically per year of birth (c)(d), lower education (b)



3 Income earned each decade per year of birth (d), higher education (b)



4 Income adjusted cyclically per year of birth (c)(d), lower education (b)



Aged 20 to 30 **Aged 30 to 40** **Aged 40 to 50**

Sources: Puente i Regil (2020) with data from the Spanish Association of Economics (AEE), National Statistics Institute (INE), Ministry of Employment, Migration and Social Security (MCVL), and Bank of Spain.

b. Higher education, if you have contributed at least once in contribution groups 1 and 2 before the age of 31.

c. The adjusted cycle data are the result of subtracting from the original data, the effects of the cyclical variables that have been estimated — separately — including regressions, from the earned income of six population groups on GDP growth, the rate of unemployment and the recession indicator, according to the AEE (1995). The six groups have been defined according to educational level (high, low, according to note b) and by age group: 20-29, 30-39 and 40-49 (for 'higher education, the youngest group starts at 25).

d. Average annual income —in original or adjusted cycle data— of the decade shown for each generation in real terms. Only men. In the case of the original data, the dotted lines indicate that the data is affected by at least one year out of the 2008-2013 recession.

contributed for at least a year are entitled to unemployment benefit, but in some cases, this can be difficult to reach at the beginning of their careers given the high number of temporary contracts. Similarly, the amount received in unemployment benefit depends on the last four months' salary, so the amounts received by young people is lower than that of older and more experienced people. Also, its duration depends on the years contributed, so again, young people will be entitled to receive benefit for less time. Finally, once used, unemployment benefits depend on age and family situation, which generally qualifies them for larger benefits, while young people are not eligible.

However, there would be reasons to justify greater coverage through transfers for young people, as they tend to have more difficulty maintaining their consumption following an unexpected drop in income as they have had less time to save. In addition, there should not usually be any risk of young people not bothering to look for a job just because they are receiving a benefit, because at this age, they have many incentives to find work and gain experience[8].

8 A reference on this can be found in Michelacci, C. i Ruffo, H. (2014). "Optimal life cycle unemployment insurance", *American Economic Review*, 105 (2):816-859.

Similarly, the current system of severance pay in Spain grows with age over-proportionately. This is due to the fact that the amount of compensation is calculated taking into account not only the length of time someone has been working in the company, but also the salary earned in the last year of work, which increases with age. In this case, the increasing nature of dismissal costs could be justified by the fact that an older person who loses a job has invested more in the employment relationship[9]. However, it does not seem justified for these differences to grow in an over-proportionate manner, especially when these specific investments are usually made during the first years in the company. For example, an employee with less than two years of seniority who earns the average of that set out in the Social Security's Continuing Work History Sample would receive just over 100 euros when the temporary contract expires. Between 2 and 5 years' seniority, with an indefinite contract, the average benefit would be less than €5,000, while someone with twice the seniority would receive triple at €15,000 euros, and this figure goes over €40,000 for someone with over 10 years of seniority.

This limited access to unemployment mechanisms on young people's income caused changes in living situations, as illustrated in Anghel et al. (2019). In particular, it caused a delay in the home-leaving age of young people or a return to their family home if they had already left, breaking the previous trend to bring forward the age in which they left home. This situation has significant consequences, as will be discussed later, in the way young people save and in fertility rates.

The partial recuperation of young people's income after 2014

From 2014, the employment situation of young people improved, but only in a partial way compared to the recovery of other demographic groups, although the unemployment rate fell by more than 10% to an average of 18.98% in 2019. Specifically, according to the living conditions survey (Graph 5), in 2018, the income of young people under 35 was still 20% below 2007 levels, while most older age groups had already gone back to pre-crisis levels. The main explanation for this phenomenon comes from an increase in job insecurity in this age group in recent years.

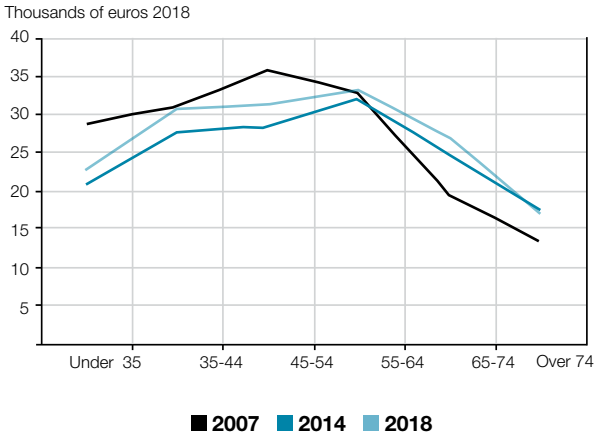
9 A reference on this reasoning is set out by Blanchard, O. and Tirole J. (2003). "Redesigning the Employment Protection System", *Economist*, vol. 152:1-20.

"From 2014, the employment situation of young people improved, but only in a partial way compared to the recovery of other demographic groups"

Over the last few generations, the number of temporary contracts -measured for a specific age group- has fallen slightly, which is reflected in the fact that more recent generations have managed to obtain their first indefinite contract at younger ages. But, on the other hand, those who do have temporary contracts, have them for less time. For example, in 2005 the duration of temporary contracts for lower-skilled employees was between four and five months, depending on age. This duration is gradually decreasing over the years, reaching around three months in 2017. Additionally, there has recently been a sharp increase in part-time contracts. Both phenomena seem to have a structural character.

To delve a little deeper into the factors that may be behind this higher turnover, Table 1 attempts to place the shortest duration

Graph 5. Average household income per age of head of family (a)



Source: National Statistics Institute (ECV)

a. The household income is the gross income in euros from 2018 and corresponds to the year before the survey.

> *The 2017 Family Financial Survey shows that in the recovery period, many young people continued to opt to live in their parents' home.*

of temporary contracts for young people under the age of 35 in a particular group. Analysing the figures presented in the table[10], it can be observed that the reduction in the duration of temporary contracts is generalised, but according to the Continuing Work History Sample, it affects men with low educational levels working in small companies slightly more. By sector, it seems to affect service companies more than manufacturing and construction companies. It has been pointed out that technological changes such as the digitisation of certain production processes could be behind this increase in non-formality. Future work on the subject will have to go deeper into the reasons for this.

This partial improvement in income has had a significant impact on the low accumulation of wealth in this age group since 2014. In particular, the 2017 Family Financial Survey shows that in the recovery period, many young people continued to opt to live in their parents' home. And those who decided to leave home had no choice but to find rented housing because they could not afford to buy a home. Specifically, between 2014 and 2017, the percentage of home owners with a head of household under the age of 35 fell by 8% to 41.3%.[11] As set out in a document from the Bank of Spain's General Directorate of Economy and Statistics, the increase in rental demand has not only been a consequence of the poor recovery of the earnings of this age group but also due to more stringent lending criteria and conditions by banks and lending institutions.[12] This has meant that both the duration of the loan and the ratio between the loan amount and the value of the property were reduced, falling approximately from 100% to 80%. This more prudent attitude is in part due to the recession and partly to the changes forced by the new financial regulation.

Table 1. Expected duration of contracts for temporary workers aged under 35 years (in months)

	2005	2008	2011	2014	2018
Total aged under 35	**4,5**	**4,0**	**3,7**	**3,4**	**3,2**
Gender					
Male	**4,9**	**4,1**	**3,8**	**3,4**	**3,2**
Female	**4,0**	**3,8**	**3,6**	**3,3**	**3,1**
Working hours					
Full-time	**4,8**	**4,2**	**3,7**	**3,5**	**3,4**
Part-time	**3,8**	**3,5**	**3,6**	**3,2**	**2,9**
Contribution group					
Groups 7 to 12	**4,4**	**3,7**	**3,5**	**3,1**	**2,9**
Groups 2 a 6	**4,7**	**4,5**	**4,2**	**3,9**	**3,6**
Groups 1 and 2	**6,7**	**6,5**	**5,8**	**5,8**	**6,0**
Company size					
Under 50 employees	**5,1**	**4,1**	**3,9**	**3,4**	**3,2**
50-249 employees	**4,3**	**3,9**	**3,6**	**3,5**	**3,4**
250 or more employees	**3,3**	**3,7**	**3,3**	**3,1**	**2,9**

Source: Social Security

a. Autor's own from MCVL data.
b. To obtain the average duration, the average probability of contract termination for each possible month of seniority is calculated. These probabilities are calculated separately for each year and group considered, and combined to obtain the mathematically expected duration. General regime wage earners, private sector both genders.

In any case, this increase in demand was not accompanied by an increase in supply of equal intensity, which led, among other factors, to a considerable increase in rental prices and a reduction in purchasing power for young people during the recovery, which further aggravated poverty levels in this age group.

The situation during lockdown

While it will still take time to have enough data to verify the effect this health crisis has had on the income, wealth or consumption of certain groups, there are clear signs that in the months when governments imposed lockdown measures to prevent the spread of COVID-19, there was an increase in certain situations of vulnerability in young people. In particular, there is international evidence indicating that the income of those most affected by lockdown have been women's, young people's, and groups

10 See box 4.3 "Employment income and the financial position of workers most affected by Covid-19" in the Bank of Spain's (2020) *Annual Report 2019* or in the forthcoming publication of the Bank of Spain's analytical article "The financial situation of workers affected by the pandemic."
11 Bank of Spain (2019). "Encuesta financiera de las familias (EFF) 2017: Métodos, resultados y cambios desde 2014", *Boletín Económico* 4/2019.
12 Bank of Spain General Directorate of Economy and Statistics (2020). "El mercado de la vivienda en España entre 2014 y 2019", *Documentos Ocasionales* no. 2013, Bank of Spain.

with low levels of education[13]. This is because lockdown had a greater effect on workers who needed to be physically presence to perform their job, and those who work in occupations with higher levels of contact between people. Spain is no stranger to this situation, as women, young people and groups with lower skills seem to be less likely to potentially perform their work at home[14]. Likewise, among the population employed in the sectors most affected by social distancing, there is a greater proportion of the same groups[15].

The loss of income from this crisis is more worrying in that the most affected individuals live in households with low levels of savings available, as mentioned in the last paragraphs of the previous section. Therefore, they will not have the funds to support their expenses if they have to deal with a loss of employment, which will lead to a greater reduction in consumption.

On this occasion, and in comparison with the great financial crisis between 2008 and 2013, various assurance mechanisms may have played a more important role in relieving the situation. Firstly, the family has acted as an assurance mechanism to an even greater degree than a few years ago. This is because the social sectors employ many young workers who have not yet left home. In 2008, income from the work of one in two construction workers -the sector most affected by the crisis- was the main source of household income (at least 50%). However, in this recession, only a third of the income from a directly affected worker represents the main source of income, so it is possible that the household has another income to alleviate the problem.

"The family has acted as an assurance mechanism to an even greater degree than a few years ago. This is because the social sectors employ many young workers who have not yet left home."

On the other hand, the government has significantly expanded their protection network to prevent incomes from being affected by lockdown. To ensure employment and income was temporarily maintained, many countries have provided systems to reduce or suspend employment contracts while recognising the employees' rights to benefits even if under normal circumstances they would not have been eligible to receive any. This is the idea behind the temporary employment regulation (ERTO) furlough scheme in Spain.

Spain has also facilitated access to benefits for business closure for the self-employed. Likewise, unemployment benefits have been created for temporary workers whose contracts have been terminated and for domestic workers. Finally, a minimum wage has also been created to provide aid for households in extreme poverty. These measures have covered more than 20% of the active population, according to information provided by the Ministry of the Social Security. However, as we will see in the next section, there may be young people who are not covered by any of these measures, which may call for further adjustments over the next year.

In the longer term, it is very possible that the pandemic will have harmed young people's educational possibilities, mainly those who are currently in primary and secondary school. Those born after 2000 seemed to be in a favourable situation having appeared to have recovered the trend in educational improvement that previous generations had lost, but it is very possible that the pandemic has affected their academic performance or some of the non-cognitive learning skills that take place in school. In particular, while the closure of schools was

13 Vegeu Mongey, S., Pilossoph, L. and Weinberg, A. (2020). "Which workers bear the burden of social distancing policies?", NBER working paper No. 27085 for USA; for the Netherlands, see Von Gaudacker, H.M., Holler, R., Janys, L., Siflinger, B. and Zimpelmann, C. (2020). "Labor supply in the early stages of the COVID-19 pandemic: empirical evidence on hours, home office, and expectations", IZA DP No. 13158; for Germany, see Alipour, J.V., O. Falck, O. and Schuller, S. (2020). "Germany's capacities to work from home", IZA DP No. 13152, and for the UK, Adams-Prassl, A., Boneva, T., Golin, M. and Rauh, C. (2020). "Inequality in the impact of the coronavirus shock: evidence from real time surveys", IZA DP No. 13183 i Bell, B., Bloom, N., Blundell, J. i i Pistaferri, L. (2020). "Prepare for Large Wage Cuts if you are Younger", VoxEU blog.

14 Anghel, B., Cozzolino, M. and Lacuesta, A. (2020). "El teletrabajo en España", Artículo Analítico Banco de España, 2/2020; Palomino, J.C., Rodríguez, J.G. and Sebastián, R. (2020). "Teletrabajo en España, ¿estamos preparados para el distanciamiento?", blog *Nada es gratis* and Peiró i Soler (2020). "El impulso al teletrabajo durante el COVID-19 y los retos que plantea", IVIE, Informe Covid19: IVIE Express No.11.

15 Vegeu Anghel, B., Lacuesta, A. and Regil, A.V. (2020). "Transferibilidad de habilidades de los trabajadores en los sectores potencialmente afectados tras el Covid-19", Artículo Analítico Banco de España 2/2020.

> *It is possible that lockdown affected their motivation and knowledge, given that online education is not a perfect substitute for face-to-face education*

an important mechanism to prevent the virus spreading, it is possible that lockdown affected their motivation and knowledge, given that online education is not a perfect substitute for face-to-face education. There is international evidence indicating that reducing time in school by a year (180 days) leads to lower academic performance in standardised examinations. This effect is mainly associated with students with a more disadvantaged socio-economic environment. Cumulative learning losses over the summer, for example, account for most of the difference in academic performance between lower and middle school students at the end of primary education, and can have long-term consequences, including at university level. In addition, distance education has not reached all strata of society in the same way, which has possibly caused much inequality[16].

Discussion

Ultimately, the housing boom had a direct impact on the level of human capital of an entire generation (those born between late 1970 and mid-1990) which was reduced due to the rise in employment opportunities requiring lower educational levels. This structural weakness was further aggravated by the fact that they suffered two different crises in the first years of their careers, which affected them especially due to temporary contracts, not being able to remote work, or operating in sectors that are vulnerable to lockdown measures. These aspects mean that today's young people in the labour market (between 25 and 39 years old) have come out of the pandemic in a substantially weakened position.

In this context, the importance of guaranteeing their income during the pandemic is paramount. Despite being eligible for the government's temporary employment regulation (ERTO) furlough scheme, there are strong indications that in general, it has not been possible to maintain a large number of the jobs for young people who had temporary contracts, as this is one of the most affected age groups by job destruction and especially the reduction in job creation. This means that their income is only guaranteed via existing unemployment benefit and the newly created subsidies: subsidy for the termination of temporary contracts and guaranteed minimum income. It is important to assess the extent to which these new subsidies will cover the whole group for as long as necessary. In particular, unemployment benefit for temporary contracts excludes contracts with a validity of less than two months, and at the moment, you are only eligible once for one month. It is important to bear in mind that a temporary contract expiring now has a major disadvantage compared to a worker currently on the temporary employment regulation furlough scheme (ERTO), as the latter receives a tax rebate in the event they are readmitted, whereas the former will not. In the case of the minimum income, preference has been given to single-parent families, which means that households with three adults (young people who are already in the labour market are included here) would be left unprotected unless they are in a very vulnerable situation.

In terms of expenditure, a key point would be to guarantee an increase in supply in the rental market, given that this generation has encountered great difficulties in purchasing a home and rental market prices have increased exponentially in the main city centres. The policies that seem to be most effective are those that steadily increase the supply of rental housing available to the most vulnerable groups. These policies are usually implemented through a combination of incentives to the private sector to facilitate a gradual and sustained increase in the supply and public provision of rental housing. International evidence shows that price controls are usually effective in the short term, but may end up further depressing supply in the longer term[17].

16 For more information on the effect of a year missed in education on standard exam results, see Carlsson, M., Dahl, G., Öckert, B. i i Rooth, D-O (2015). *"The effect of schooling on cognitive skills"*, *Review of Economics and Statistics*, vol. 97(3), p. 533-547. The effect of school holidays is discussed in Cooper, H., Nye, B., Charlton, K., Lindsay, J. and Greathouse, S. (1996). "The Effects of Summer Vacation on Achievement Test Scores: A Narrative and Meta-Analytic Review", *Review of Educational Research*, Alexander (2001). "Culture and pedagogy: International comparisons in primary education." Oxford: Blackwell. and finally, Alexander, K., Entwisle, D. and Olson, L.S. (2007). "Lasting consequences of the summer learning gap." *American Sociological Review*, vol. 72, p. 167-180.

17 A discussion on the different alternatives can be found in López-Rodríguez, D. and Ll. Matea (2020). "La intervención pública en el mercado del alquiler de vivienda: una revisión de la experiencia internacional", *Documentos Ocasionales*, n.º 2002, Bank of Spain.

Additionally for the coming months, it is important to allocate resources to reinforce learning due to having missed education during the pandemic for the generations born in the 21ST century, by providing educational support programmes during summer and over the 2020-21 academic year, especially for primary and secondary students[18].

Finally, it is essential to go deeper into active policies on individualised guidance and training. It is necessary to provide adequate state and regional public employment services, both in terms of staff and ensuring they have the necessary statistical tools to be able to identify the skills required by companies in certain locations and thus define the training needs of unemployed young people. It will also be necessary to adapt the vocational training system so that it can offer this training in an appropriate way.

Experience of these generations in recent years also identifies certain policies that should be modified or assessed in the long term to prevent future young people from going through a similar vulnerable situation to the present one. Specifically, there are three important measures that should be taken into account to achieve a comprehensive strategy that improves the economic possibilities of young people: the first is to end the duality of the labour market that clearly penalises young people by reducing current redundancy costs by using different types of contracts. The second is to improve the education system in all its different areas. The OECD has published certain proposals in this regard in its reports: for example, it proposes an improvement in continuous teacher training and in compulsory education curriculums by reducing the content and highlighting certain creative content that is less memory-based; an additional improvement in the vocational training system by adapting it to good international practices and creating clusters of small companies; and at university level, it proposes an improvement in the recruitment process of teaching staff and researchers; and finally, linking the financing of the system

"There are three important measures that should be taken into account to achieve a comprehensive strategy that improves the economic possibilities of young people"

to excellent objectives[19]. Finally, the third measure that should be taken into account for the strategy is the assessment of minimum income to ensure that it is an appropriate and efficient tool to guarantee sufficient income to young people in a context of greater job stability in terms of eligibility, while preventing them from falling into poverty traps.

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THE ECONOMIC SITUATION IN RELATION TO CHILDREN IN SPAIN AND THE COVID-19 CRISIS

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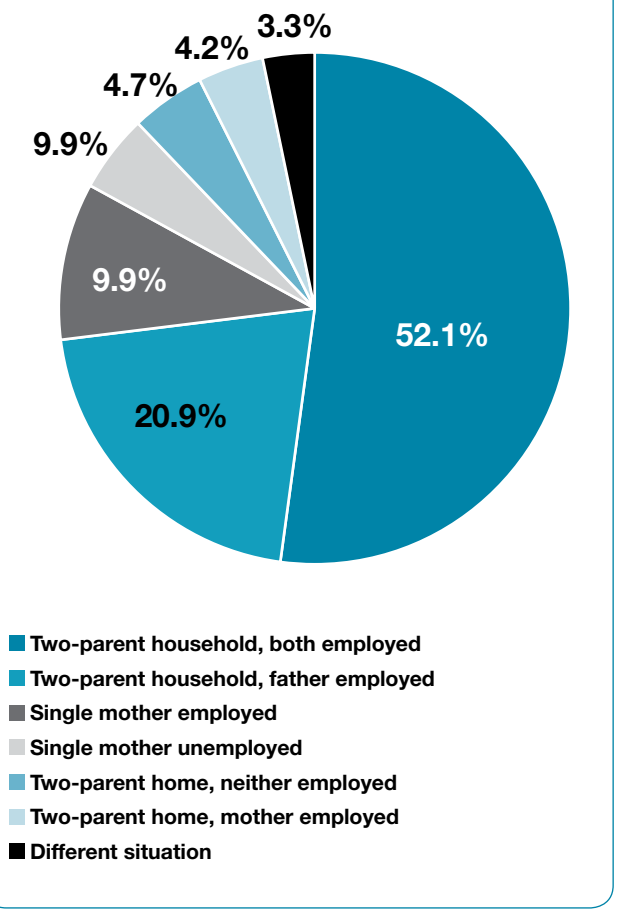
In this article, I will be focusing on the short-term effects of the COVID-19 crisis on the economic situation in relation to children. Spain was severely affected by the first wave of the pandemic and was subject to a severe national lockdown, which lasted from 14 March to 21 June 2020. I will be using data from the Labour Force Survey and following a strategy of "difference in differences". I will analyse the change in the situation of parents in the labour market between the first and second quarter of 2020, using 2019 as the year of reference. I found a significant increase in the proportion of children living in households where neither parent is employed. I will document how approximately 10% of parents had to adhere to the government's Temporary Employment Regulation (ERTO) furlough scheme during the second quarter of 2020, while approximately 4% of mothers and 2% of fathers lost their jobs. I also found that children living with parents of a high educational level were virtually unaffected in terms of parental employment, while children living with a single mother or with immigrant or low-educated parents suffered significant negative effects.

1. Introduction

In this article, I will study the economic situation in relation to children in Spain and the short-term effects of the COVID-19

Figure 1. Living situation of children, Spain 2019



> *This article helps to document the short-term effects of the COVID-19 pandemic on the employment situation and family well-being in different countries*

crisis. In 2019, there were 7.4 million children under the age of 16 (National Statistics Institute - INE) in Spain. According to the Labour Force Survey (LFS, 2nd quarter 2019), 52% of children lived in a two-parent household where both parents had separate occupations, and 10% lived in a single-parent household in which the mother worked. 25% of children lived with both parents, but with only one parent working. Almost 10% of the children lived either with an unemployed father or mother, or with a single mother without a job, that is, in a precarious economic situation, without either parent in employment (see Figure 1).

In 2020, Spain was severely affected by the first wave of the pandemic and the national state of alarm that lasted from 14 March to 21 June 2020. The crisis has affected the labour market, with an increase in the unemployment rate and in the number of workers adhered to the temporary employment regulation (ERTO). In this report, I aim to analyse, with the data available so far, the impact of the health crisis on the economic situation of households with children, in the short term. To do this, I have used data from the Labour Force Survey and follow a difference-in-differences strategy to analyse the change in the employment situation of parents between the first and second quarters of 2020, using 2019 as the year of control.

The results show a significant increase in the proportion of children under the age of 16 living in households where neither parent has a job. I will document how approximately 10% of parents had to adhere to the government's Temporary Employment Regulation (ERTO) furlough scheme while approximately 4% of mothers and 2% of fathers lost their jobs. I also discover that children living with parents of a high educational level were virtually unaffected in terms of parental employment, while children living with a single mother or with immigrant or low-educated parents suffered significant negative effects.

This article contributes to very recent literature that has been aiming to document the short-term effects of the COVID-19 pandemic on the employment situation and family well-being in different countries. Alon i col. (2020) use pre-crisis data to discuss its potential impact on gender equality in the labour market (in the US). Adams- Prassl et al. (2020) have studied the short-term effects on the labour market for Germany, the United States, and the United Kingdom, and Von Gaudecker et al. (2020) for the Netherlands, among others. Del Boca et al. (2020) study the effects on the labour market for women in Italy, while Hupkau and Victoria (2020) and Hupkau and Petrongolo (2020) focus on gender inequality in the labour market in Spain and the United Kingdom, respectively.

Regarding other aspects of family life and well-being, Adams-Prassl et al. (2020) and Etheridge and Spantig (2020) document the effects on mental health in the United States and the United Kingdom, while Farré et al. (2020) and Biroli et al. (2020) analyse the use of time in families in Spain, Italy, the United States and the United Kingdom. Seville and Smith (2020) study the time spent caring for children in the United Kingdom, and Fuchs-Schündeln et al. (2020) and Ma et al. (2020) analyse the impact of school closures on parental labour supply in Germany and China.

My contribution to this recent literature is to use high-quality microdata on the labour market and a simple difference-in-differences strategy to understand the short-term effects of the pandemic on the economic situation of households with children (in Spain).

The remainder of this article is set out as follows. Section 2 describes the institutional environment, focusing on the lockdown period in Spain in the spring of 2020. Section 3 presents the empirical strategy, while section 4 describes the data. Section 5 sets out the results, and section 6 brings the article to a close.

2. Institutional environment

The first wave of COVID-19 hit Spain hard, leading to one of the strictest lockdowns in Europe. On 9 March, the government announced that all levels of schools in the Region of Madrid would be closed from Wednesday 11th, set to affect over 1.5 million students. On Thursday 12 March schools were closed throughout Spain. On 14 March, it was announced that, as of midnight, Spain would enforce a "state of alarm". The state of alarm involved national lockdown, and any movement that was not absolutely necessary was banned. Residents were ordered

> *To study the impact of lockdown on children's economic circumstances, I proposed a difference-in-differences strategy*

to remain at home except to buy food or medicine, go to work, go to the hospital, or other emergencies.

While working outside the home was permitted, those who could were asked to work from home, and restrictions also forced the temporary closure of non-essential shops and businesses. On 17 March, the Spanish government announced a support package of approximately 20% of GDP, which included measures to help workers and businesses affected by the closure. This package included the simplification of procedures for temporary dismissal (known as ERTO -Temporary Employment Regulation).

On 28 March, just two weeks after the state of alarm was announced, the Spanish government had officially banned all non-essential economic activity. Following these initial moves, the state of alarm was repeatedly extended, and lockdown conditions remained virtually unchanged. From 15 March to early May, Spain lived under the strictest lockdown in Europe.

In late April and early May, conditions began to ease. Specifically, on 13 April, some workers in certain industries such as construction, and industrial workers who could not work from home but were not considered essential, were allowed to return to work. On 26 April, some restrictions on personal activity were lifted, enabling children to go outside for the first time since the beginning of lockdown but only under strict conditions and schedules.

On 28 April, the government announced a plan to ease the restrictions in so-called "phases". On 2 May, adults were allowed to go for a walk and do individual sport under strict conditions and at a set time. On 11 May, some regions were allowed to move to phase 1 in the easing of restrictions. At this point, approximately half of the Spanish population experienced fewer restrictions, and social meetings of up to 10 people were allowed, provided they were socially distanced, and certain businesses were allowed to open under established safety measures. The state of alarm was finally lifted on 21 June after 97 days of exceptional restrictions.

Therefore, the first quarter of 2020 can be considered the last pre-pandemic quarter (except for the last two weeks of March), while the state of alarm and lockdown took up the entire the second quarter, except for the last week in June.

3. Empirical strategy

To study the impact of the lockdown imposed during the first wave of COVID-19 on the economic circumstances of children, I propose a difference-in-differences strategy. This means that I compare the situation of households in the second quarter of 2020 (during lockdown) with the first quarter of 2020 (just before the state of alarm), and I use the first two quarters of 2019 as a "control group" to take into account seasonality (changes that tend to occur every year between the first and second trimester, for reasons unrelated to COVID-19).

My observation unit (i) is the child (under 16), and I use the following equation:

$$(1)\ Y_{it} = \alpha + \beta_1 Q_2 + \beta_2 y2020 + \beta_3 Q_2 * y2020 + \gamma X_{it} + \varepsilon_{it},$$

In which the variable of interest (Y) is a measure of the economic situation of the household, which I measure mainly through the employment situation of the parents. The variable Q_2 is an indicator for households surveyed in the second quarter (2019 or 2020), and y2020 is a binary variable that indicates the observations for the year 2020 (including the first and second quarters).

The coefficient of interest is β_3, which represents the average change in the household situation between the first and second quarters of 2020, after subtracting the difference between the first and second quarters of 2019, which we attribute to seasonal characteristics. A significant coefficient would represent the impact of the pandemic and the consequent lockdown.

It should be noted that I treat the first quarter of 2020 as "pre-crisis." In practice, the last two weeks of March (two of the 13 weeks of the first quarter) were after the state of alarm was announced and the beginning of lockdown (14 March). Therefore, by including them in the pre-crisis period we may be underestimating the full effect of lockdown, should any unemployment have occurred before the end of March.

Table 1. Average relative variables, per quarter

	Q1 2019	Q2 2019	Q1 2020	Q2 2020
% Live with both parents	81,8	81,9	81,6	81,9
% Live only with mother	14,9	14,8	14,9	14,7
% Mother employed	64,9	66,2	66,3	64
% Father employed	74,9	75,2	74,2	72,5
% Neither parent employed	10,9	10,7	11,2	12,8
N	25,505	25,376	23,764	22,403

Note: LFS 2019 and 2020. The sample includes all children under 16 (no weighting). Mother employed and father employed take value 0 when the child does not live with the mother or father, respectively

Control variables (X) include the age and country of birth of the child, as well as the country of birth and the educational level of the parents. Where certain regressions are observed, we also check two indicators that tell us whether both parents live with the child.

4. Data

The analysis is based on data from the Labour Force Survey (LFS). I used data from the first and second quarters of 2019 and 2020, and select a sample of children under the age of 16. The LFS is a national survey of approximately 65,000 households each quarter. It focuses on the employment situation of adult household members, but also collects detailed information on the composition of the household, which allows us to identify children and the employment situation of their parents if they live with them.

Table 1 shows the averages of the main variables, for the four quarters included in the analysis. 82% of children live with both parents, while about 15% live with a single mother (i.e. they live with their mother but not with their father). In the second quarter of 2019, it is observed that 66% of mothers was employed, compared to 75% of fathers. Almost 11% of children lived in a household where neither mother nor father were employed at the time of the survey.

Table 2. Changes in living situation and parents occupation status

	Lives both parents	with Single mother	Neither parent employed
Q_2*2020	0,002	-0,002	0,022***
	(0.005)	(0.005)	(0.004)
2020	-0.001	0.000	0.004
	(0.003)	(0.003)	(0.003)
Q_2	0.001	-0.000	-0.002
	(0.003)	(0.003)	(0.002)

Note: LFS 2019 and 2020 (quarters 1 and 2).

5. Results

First I studied the effects of lockdown on children's living situation. I estimated equation (1) taking as dependent variables: one indicator of whether the child lived with both parents, and another indicator for children living with the mother and not with the father ("single mother"). The results are set out in the first two columns of Table 2.

The sample includes all children under 16 (no weighting). Each column presents the results of a different regression (linear, no weighting). The dependent variable is the title of each column. Robust standard errors are shown in parentheses. Control variables include age and country of birth of the child in each column. Column 3 also includes the country of birth of the parents, and indicators of whether the child lives with the mother and the father. The number of observations is 97,048. I found no effects of lockdown on the living situation of children. First, the second quarter coefficient shows no evidence of seasonality for these variables. I have not found any changes between 2019 and 2020 (zero coefficient for y2020). Finally, our coefficient of interest (Q_2 * y2020) is very small and is not statistically different from 0 for both variables of interest. In other words, lockdown did not coincide with a change in the proportion of children living with both parents or a single mother.

Next, I studied the effect of the crisis on a variable that captures a situation of severe economic deprivation in the home: children

Table 3. Changes in parents occupation status (complete sample)

PANEL A. MOTHERS

	WORKING	EMPLOYED	FULL TIME	WEEKLY HOURS	ERTO
Q_2*2020	-0.126***	-0.042***	-0.029***	-4.17***	0.099***
	(0.006)	(0.005)	(0.006)	(0.215)	(0.004)
2020	-0.016***	0.010**	0.017***	-0.492***	0.028***
	(0.004)	(0.004)	(0.004)	(0.152)	(0.002)
Q_2	0.016***	0.012***	0.012***	0.417***	-0.005**
	(0.004)	(0.004)	(0.004)	(0.149)	(0.002)

PANEL B. FATHERS

	WORKING	EMPLOYED	FULL TIME	WEEKLY HOURS	ERTO
Q_2*2020	-0.106***	-0.024***	-0.025***	-4.82***	0.090***
	(0.005)	(0.004)	(0.004)	(0.208)	(0.003)
2020	-0.036***	-0.008***	-0.005*	-1.78***	0.029***
	(0.003)	(0.003)	(0.003)	(0.141)	(0.002)
Q_2	0.005	0.002	0.004	0.076	-0.004**
	(0.003)	(0.002)	(0.003)	(0.134)	(0.002)

Note: LFS 2019 and 2020 (quarters 1 and 2). The sample includes all children under 16 Each column presents the results of a different regression (linear, no weighting). The dependent variable is the title of each column. Robust standard errors are shown in parentheses. Control variables include age and country of birth of the child, country of birth of the parents, and indicators of whether the child lives with both parents. The number of observations is 97,048.

living in households in which neither parent is employed (a binary indicator that takes the value 1 when neither mother nor father are employed at the time of the survey).

I found a significant increase (of 2.2 percent) in the proportion of children living in households where neither parent was employed in the second quarter of 2020. This represents a 20% increase over the second quarter of 2019 (see Table 1). This is a first indication that the lockdown had a negative effect on children's economic situation, although the magnitude of the effect appears moderate.

Next, I looked at the effects on employment for each parent separately. Table 3 reports the results for all households, including those in which the mother or father is not present. In these households, the non-resident father is coded as not working. Table 4 presents the results for the subsample (82%) of children living with both parents.

I studied five variables related to the labour market. The first is an indicator of whether either parent worked the week before the survey. The second indicates whether the parent had a job, regardless of whether he or she worked last week, that is, it takes as value 1 if the parent was working or has a job, including cases in which for some reason (such as an ERTO situation) he or she was not working at the time of the survey. I also studied the effects on full-time employment, as well as weekly hours worked. Finally, I analysed the impact on the proportion of parents adhered to Temporary Employment Regulation (ERTO) furlough scheme.

Panel A in Table 3 shows the results for mothers. I found a decrease of 12.6 percent in the proportion of mothers working at the time of the survey (first column). The effect on employment is smaller (4 points), which reflects the increase in those on ERTOs. I found that lockdown led to a 10 percent increase in ERTOs among mothers (last column). I also found a significant reduction in the weekly hours worked.

The effects are similar for fathers. They were 10.6 percent less likely to be working, 2.4 percent less likely to have a job and 9 percent less likely to be on ERTO. The effects on employment seem to be slightly greater for mothers.

Table 4. Changes in parents' occupation (children in two-parent family homes)

PANEL A. MOTHERS

	WORKING	EMPLOYED	FULL TIME	WEEKLY HOURS	ERTO
Q_2*2020	-0.125***	-0.039***	-0.026***	-4.01***	0.100***
	(0.007)	(0.006)	(0.007)	(0.241)	(0.004)
2020	-0.015***	0.010**	0.016***	-0.552***	0.029***
	(0.005)	(0.004)	(0.005)	(0.170)	(0.003)
Q_2	0.015***	0.011***	0.009**	0.333**	-0.004*
	(0.004)	(0.004)	(0.005)	(0.166)	(0.002)

PANEL B. FATHERS

	WORKING	EMPLOYED	FULL TIME	WEEKLY HOURS	ERTO
Q_2*2020	-0.124***	-0.027***	-0.029***	-5.68***	0.106***
	(0.006)	(0.004)	(0.005)	(0.249)	(0.004)
2020	-0.043***	-0.010***	-0.007*	-2.14***	0.034***
	(0.004)	(0.003)	(0.003)	(0.170)	(0.002)
Q_2	0.005	0.002	0.005	0.096	-0.004**
	(0.003)	(0.003)	(0.003)	(0.161)	(0.002)

Note: LFS 2019 and 2020 (quarters 1 and 2). The sample includes children under 16 who live with both parents. Each column presents the results of a different regression (linear, no weighting). The dependent variable is the title of each column. Robust standard errors are shown in parentheses. The control variable include age and country of birth of the child and country of birth of the parents.

Table 4 shows the results for the same variables, estimated in the subsample of children living with both parents. Again, we found that approximately 10% of parents were on ERTOs, and a significant but small proportion had lost their jobs (a decrease of 3-4 percent in the proportion of employed people).

So far I have described the average effects. In Table 5 (and Figure 2), I estimate the equation (1) for different subgroups of households, in a aim to identify the children most affected by the health crisis. The variable of interest is once again the indicator of neither parent employed (as in the last column of Table 2).

The first column shows that the prevalence of severe economic deprivation increased by 1.4 percent among children in two-parent households. The effect was much greater (almost 7 percent) for children living with a single mother (second to last column). Among children living with both parents, we find that the effect is almost nil in households where both parents are university educated (column 2), while it is greater when neither parent is university educated (column 4). The effect is even greater (almost 3 percent) when at least one parent is an immigrant (born outside of Spain). Finally, we find a very large effect (almost 9 percent) in single-mother households in which the mother has no university education (last column).

Therefore, we found that the effects of the COVID-19 crisis on children were very varied. Children living with both parents and those with a university education were barely affected, while children with low-educated immigrant parents and those living with a single mother were at a much higher risk of their parents losing their jobs and therefore suffer financial hardship.

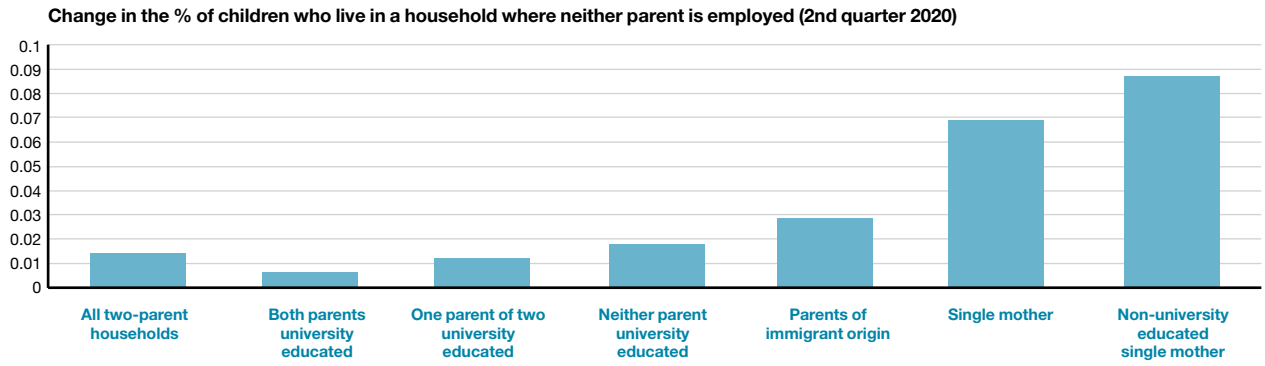
6. Conclusions

In this article, I study the short-term effects of the COVID-19 crisis on children's economic situation in Spain, focusing on its impact on parental employment. Spain was severely affected by the first wave of the pandemic and was subject to a severe national lockdown, which lasted from 14 March to 21 June 2020. I have used data from the Labour Force Survey and followed a "difference in differences" strategy. I analysed the change in the situation of parents in the labour market between the first and second quarter of 2020, using 2019 as the year of

Table 5. Changes per household type (in the proportion of households with no unemployed adult)

	All two-parent households	Fathers high educational level	One parent high educati-onal level	Fathers low educational level	One or more immigrant parent	Single mothers	Single mothers, low educational level
Q_2*2020	0.014***	0.006*	0.012***	0.018***	0.028***	0.069***	0.087***
	(0.003)	(0.003)	(0.004)	(0.005)	(0.010)	(0.015)	(0.018)
2020	0.005	-0.008	-0.000	0.008**	0.013*	-0,011	-0.015
	(0.002)	(0.002)	(0.003)	(0.004)	(0.007)	(0.010)	(0.013)
Q_2	0.001	-0.001	-0.000	0.002	0.001	-0.017*	-0.023*
	(0.002)	(0.002)	(0.003)	(0.004)	(0.007)	(0.010)	(0.013)
N	79,374	16,380	18,912	44,082	16,416	14,394	10,737

Figure 2. Change in the percentage of children who live in a household where neither parent is employed (2nd quarter 2020)



reference. The results show a significant increase in the proportion of children under the age of 16 living in households where neither parent is employed. Approximately 10% of parents had to adhere to the government's Temporary Employment Regulation (ERTO) furlough scheme, while approximately 4% of mothers and 2% of fathers lost their jobs. I also found that children living with university-educated parents were hardly affected, while children living with a single mother, immigrant parents, or parents with low educational levels experienced significant negative effects on their parents' employment.

The results suggest the pandemic had significant short-term effects on the economic situation of children in disadvantaged households. The economic situation of children declined, especially for those living with a single mother and those with low-educated parents or parents of immigrant origin. Along with the closure of schools during the same period, these children may suffer significant long-term effects as a result of the current crisis. My future research will aim to monitor these effects, as well as the effectiveness of public policies in mitigating them.

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PENSIONS POST COVID-19

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There have been continuous and intense academic and political debates on the public pension system and its reforms since the end of the last century. Despite this, we found ourselves at the beginning of 2020 -after a new failure of the Parliamentary Committee of the Toledo Pact in charge of recommending lines of action regarding financial sustainability and the level of adequacy of the pension system- without one shared diagnosis on the severity of the situation. And just when, the work of this Commission was being resumed in the new legislature, the pandemic struck, and it was all was moved to one side to make room for other more urgent matters and tasks.

Once the initial impact of the COVID-19 crisis has been overcome and the transition to a "new normal" phase has begun, one may wonder how the situation regarding the pension system will change post COVID, and to what extent its reform is more or less urgent or difficult. To answer this question, this article discusses three questions: i) what was the situation of the debate on pension reform and what demographic and economic trends conditioned this reform before the pandemic? ii) how the above-mentioned trends have been changed by the crisis and what other associated factors are relevant to pension reform, and finally, iii) what priority decisions need to be taken to move forward with this reform.

The pre-pandemic situation

Many debates on pension reform begin by questioning its "viability" or "sustainability". Asked in a general sense, this is an empty question, with no useful answer possible unless the desired goals of the pension system are not made explicit. For example, when it comes to considering the viability of a contributory pension system (the first pillar of the Spanish system), it is necessary to define the effective rate of social security contributions (that finance Social Security contributory benefits) and the pension replacement rate (the ratio between the average pension and the average salary) considered appropriate before discussing whether it is "viable" or "sustainable".

This precision is necessary because in these types of debates, studies are used on the "viability of the pension system" to justify one position or another, but without appreciating what these studies say in their entirety. A notable example is "Opinion on the sustainability of the Social Security system", published in January 2019 by the AIReF, which is often cited to argue that the pension system is "sustainable". However, what this study shows is that in a relatively optimistic demographic scenario (which forecast rising birth rates and immigration that are not actually currently occurring), spending on contributory pensions would increase by 3-4 percentage points (pp) of GDP in 2050, even in the event of a significant reduction in coverage and pension replacement rates. In any case, the current effective rate of social security contributions, which is already high in Spain, would not be enough to avoid deficits in the pension system of approximately the same magnitude (3-4 pp of GDP).[1] Furthermore, two of the measures introduced by the 2013 reform to bring about a decrease in the pension replacement rate

1 AIReF (2019). "Opinión sobre la sostenibilidad del sistema de Seguridad Social", Opinion 1/2019.

> *The COVID-19 pandemic may lead to long-term changes in consumption patterns and in the organisation of the production of goods and services*

(a revaluation index for pensions linked to the financial situation of the pension system and a factor sustainability that adjusts pensions based on life expectancy) have been suspended.[2]

The need to adapt the replacement rate of contributory pensions to the new demographic and economic scenario has been illustrated many times by very simple accounting identities. Income from social security contributions, in terms of GDP, is the product of the effective tax rate of social security contributions and the share of the payroll in GDP. They currently account for approximately 10% of GDP. Given that the effective rate of social security contributions is already high enough and that the share of wages in GDP shows a declining trend, which can be accelerated with the technological changes that are looming, it cannot be expected that these revenues will reach higher levels than at present. On the other hand, spending on contributory pensions, also in terms of GDP, is the quotient between the product of dependency and pension replacement rates and the share of wages in GDP (numerator) and the employment rate (denominator). Given the sharp increase in the dependency rate (the ratio between the retired population and the working age population) that will occur in the coming decades, and given that the change in the employment rate will not be able to compensate, it is necessary to reduce the replacement rate in order to avoid very high increases in pension expenditure.

It should borne in mind that the situation of a contributory pension system is highly dependent on the evolution of the labour market, in particular on employment and its composition, wages and productivity. In this regard, there are structural trends arising from new technological advances that are changing employment and the way we work, with important consequences for what pension systems may or may not offer.

2 Hernández de Cos, P., J.F. Jimeno and R. Ramos (2017). "El sistema público de pensiones en España: Situación actual, retos y alternativas de reforma", Banco de España, Documento Ocasional 1701.

Technological innovations associated with digitisation, robotics and artificial intelligence pose fundamental challenges for labour market and competition regulation, for educational and technological policies, and even for social policies. The extent and magnitude of its consequences are yet to be discovered, but a scenario of radical change in the forms of production of goods and services cannot be ruled out, and if this occurs, it will cause all the tax and public spending mechanisms for redistribution, currently based mainly on contributory benefits, to be reassessed.

Specifically, technological changes, especially in a demographic context marked by declining working-age populations and an ageing population, suggest a macroeconomic context with very low interest rates and a declining trend in the GDP wage share. In this context, a permanent deficit in consumer demand and investment is very likely. Fiscal policy, limited by current high levels of public debt and the financial imbalance of public pension systems, will do little to compensate for this deficit, especially when the COVID-19 crisis raises the debt ratio above 120% of GDP. We should also expect profound changes in the type of demand for consumer goods (lower demand for durable goods) and investment (more emphasis on investment in R&D and intangibles) and for public goods (with greater weight than the personal services, health and education sectors), which will force the reformulation of social policies.[3]

The COVID-19 crisis

The COVID-19 pandemic caused firstly, economic activity to slow down during the months of March-June 2020 to unprecedented levels, and secondly, it may lead to long-term changes in consumption patterns and in the organisation of the production of goods and services. The economic downturn may continue for some time (according to the latest IMF forecasts, GDP will decline by 12.8% in 2020). This could even reoccur depending on how and to what extent the pandemic is controlled by healthcare. But, even if full control is achieved soon (by vaccine or effective antivirals), it is likely that a return to normality will occur slowly and not necessarily to a situation similar to the pre-pandemic stage.

In terms of the public pension system, the health crisis has obvious impacts on demographic and economic variables that

3 Bank of Spain (2019). "Consecuencias económicas de los cambios demográficos", *Annual Report*, chapter 4.

determine both expenditure and income. We still don't know what the impact will be on life expectancy, neither in the short nor long term. Looking at current statistics, it is estimated that the excess mortality rate by 2020 is close to 45,000 people, of whom 95% are over the age of 65. This year will be the first in a long time in which there will be a decrease in life expectancy (an estimated 9 months lower). Given that this decrease is expected to be temporary and is therefore unlikely to end up affecting the age structure of the Spanish population very much, we can also assume that the planned expenditure on existing pensions before the crisis will not be significantly altered by the tragic demographic disturbance associated with COVID-19.

There are much more significant effects arising from the variation in the labour market. With the current parameters, for every 5 percentage points (pp) decrease in the employment rate (which, considering the population aged 16 to 64 as the working age population, was 64.7% in the last quarter of 2019), pension spending rises by 1 pp of GDP. It is difficult to predict what the employment rate will look like for the rest of the year and during the transition phase to the "new normal" (which may go on for another year or two), but it can be assumed to be somewhat lower (in the first quarter of 2020 it had already dropped more than 1 pp to 63.6%). Ultimately, the labour crisis associated with the pandemic is likely to cause a significant increase in the deficit of the pension system, which was already anticipated at about 2 pp of GDP, and could even double in 2020-2022.

If we look more in the medium and long term, other trends already observed before the crisis may be accentuated. Two of these are especially important due to their implications on the pension system and possible reform alternatives. One, of technological origin, is the trend towards automation and digitisation. Prior to the crisis, this was associated with the polarisation of employment, ie. the relative loss in importance of manual and non-manual, medium qualification jobs in favour of highly skilled and very low-skilled jobs with less routine tasks and therefore less susceptible to automation.[4] This was also associated with greater wage inequality, which with a contributory pension system, also translates into more income inequality among the retired population.

Another structural trend, mainly of demographic origin, but also caused by low productivity growth, is that which has given way to a macroeconomic context of "secular stagnation", that is, low economic growth, very low interest rates and recurring risks of deflation.

It is highly likely that the COVID-19 crisis will accelerate both trends. On the one hand, this crisis could be perceived as causing a loss of labour productivity, insofar as the obligatory nature of social distancing requires a restructuring in the organisation of labour that makes certain goods and services (especially those supplied in physical proximity) more expensive to produce. On the other hand, compulsory remote working together with the strong investment in digitalisation that many companies have had to make during the so-called "Great Reclusion" mean that less labour-intensive forms of production are now more profitable and are therefore becoming more common.

In addition, the factors that have pushed down economic growth, interest rates and inflation are reinforced by the uncertainty caused by the pandemic, due to the permanent destruction of the productive fabric that this can cause, and the burden of high debt (public and private), which was declining after the Great Recession (2007-2014) and which will now increase significantly. Obviously, lower economic growth means there are less resources transfer income between generations (which is what a pension system like ours fundamentally does); high debt also constrains the ability of the pension system to make these transfers, and lower interest rates mean that income from savings allocated to finance retirement are also lower, while the life annuity that can be guaranteed with a certain level of accumulated capital it is also lower.[5]

Post-crisis COVID-19: where are we going?

Given the above scenario, a profound reform of the pension system to restore the financial balance of the contribution pillar and guarantee adequate pensions for the entire population is now more inevitable than ever. Given the situation pre-pandemic, and the economic consequences this may have caused, the financial pressures and social demands put on the system in the coming years will be even more constraining. The question of how to achieve both goals (financial sustainability and pension adequacy) has been the subject of much debate, but

4 Sebastián, R. (2018). "Explaining job polarisation in Spain from a task perspective", *Series* 9 (2), 215-248.

5 Jimeno, J.F. (2020): "Sobre las causas y las consecuencias del estancamiento secular", *Spanish Economy Papers* (in the press).

there is still no action plan on the horizon capable of tackling the serious problems we face.

An action plan of this nature should start by being built on two key decisions. One is the desirable balance between contributory and universal/welfare pensions. Another is the replacement rate that contributory pensions should offer. Both decisions have important implications in the design of a pension system that can fund sufficient benefits.[6]

Currently, the welfare pillar of the Spanish public pension system is insufficient and the contribution pillar too generous. Even the largest welfare allocation to guarantee the adequacy of pensions (the minimum supplements for contributory pensions to reach a minimum amount) are conditioned by access to a contributory pension (which requires a minimum period 15-year contribution period in the case of retirement pensions). And welfare pensions for the population without access to contribution pensions (which require the absence of significant wealth and income) are much lower. In the likely scenario of a considerable drop in the labour factor in production associated with the technological trends discussed above, and the increase in atypical forms of employment without the protection received by regular wage employment, there will be many more people potentially left without access to contributory pensions. Therefore, given the current imbalance between welfare and contributory benefits, and taking into account the factors that may make this imbalance even greater, it must be considered that guaranteeing the adequacy of pensions necessarily involves expanding coverage and the amounts in the case of welfare benefits.

Regarding the financial situation of the pension system's contribution pillar, the excessive current (average) replacement rate of the aforementioned benefits is made clear by making a well-known basic calculation that determines the relationship between this rate and the effective rate of social security contributions. The maximum contributory pension replacement rate that can be financed with social security contributions is the quotient between the product of the effective rate of social security contributions and the employment rate (numerator) and the demographic dependency rate (denominator). Very soon, we will be seeing employment and demographic dependency rates at

Given the current imbalance between welfare and contributory benefits, it must be taken into account that guaranteeing the adequacy of pensions necessarily involves expanding coverage and the amounts for welfare benefits

60% and 30% (approximately), respectively. This means that, with an effective social security contribution rate of 23% (close to the current one), the maximum average pension replacement rate compatible with the financial equilibrium would be 46%. It is currently above 50% and is on the rise. The need to reduce the pension replacement rate will intensify as the dependency rate continues to rise over the next three decades, when it could reach 70%.

Given this scenario, there are two types of reactions that deny the need to reduce the pension replacement rate. One is to resort to increasing the effective rate of social security contributions. Another is to appeal to other income (general taxes) as a supplement to social security contributions in financing contributory pensions. Both solutions have drawbacks. Firstly, the effective social security contributions rate is already high enough and it would not seem appropriate to increase it in a context in which labour costs can be reduced through automation and in which current trends are moving towards reducing the labour factor in the production of goods and services - a scenario which has accelerated during the COVID-19 crisis. With regard to the use of general taxes to finance contributory pensions, this presents a series of legal, political and economic issues. The legal ones refer to the incoherence of financing benefits that are subject to a previous legal relationship with the Social Security with resources provided by those who were not necessarily part of this relationship. Those of a political nature have to do with budgetary constraints and the process of distributing blatantly scarce resources among alternative uses, when a certain item is preferential (contributory pensions). Finally, the economic ones refer to the fact that the amount of general taxes that would be necessary to transfer to the Social Security for contributory pension payment is far superior to the available budgetary margin, which is incidentally, now very tight due to

6 Jimeno, J.F. (2019): "Elementos de una reforma sostenible del sistema de pensiones", *Spanish Economy Papers*, 161.

the needs of the COVID-19 crisis and the context of low economic growth that is expected in the coming years.

It should be noted, however, that a reduction in the replacement rate does not necessarily imply a reduction in the amount of pensions (which would not occur if wage growth were sufficient) or a decrease in the replacement rate for all contributory pensions. To guarantee the adequacy of pensions, this decrease should be concentrated in the upper levels of wage distribution. Admittedly, it is in these levels where replacement rates are lower (due to the upper limit set by the maximum pension), but this is also where pensions are higher, which leaves more room to reduce replacement rates without jeopardising the adequacy of pensions.

A pension system that achieves this reduction in the pension replacement rate, guaranteeing its sufficiency in the lower part of the distribution and concentrating its decrease in the upper part, is the so-called *notional contribution accounts defined.* And it achieves this in a transparent manner and with the appropriate incentives for labour participation. In this system, the contributions of workers and employers are accumulated in an individual virtual fund with a rate of return determined by macroeconomic conditions (the higher the rate of economic growth, the higher the rate of return). The resulting capital (notional, as the source of financing is still the volume of workers' and employers' contributions available at any given time, not financial assets in which previous contributions are invested) becomes a life annuity at the time of retirement with purely actuarial criteria (depending on interest rates and life expectancy (aggregate)). This achieves two fundamental objectives: better incentives for working throughout the working life, especially in old age once the retirement rights corresponding to the minimum pension have been exceeded, and an average replacement rate that financially balances the system by being lowered at the top end of distribution.

Given that the pension replacement rate of many future pensioners will decrease significantly, the only alternative, to keep a stream of income flowing throughout the life cycle, is greater savings. The situation is not favourable here either. Firstly, the COVID-19 crisis has led to the destruction of considerable financial wealth, which logically translates into a decrease in retirement savings for the next generation coming into this stage. Secondly, in a context of low economic growth burdened by a high level of debt, set to increase with the COVID-19 crisis, households' savings capacity will be even more limited, and therefore their contributions to pension funds will decrease. Finally, given that demographic and technological trends -accentuated by possible permanent effects of the COVID-19 crisis- present an economic context characterised by very low interest rates, more savings are required to top up the stream of income, and the annuity associated with a given accumulated capital is lower.[7]

Appeals for a capitalisation pension system to replace the pay-as-you-go pension system, which have always been delusional, are now completely unviable given the high levels of public debt and low interest rates, even if it was supplementary to the distribution pillar with some significant weight. However, the savings for retirement will have to increase, and there are two important issues in this regard. One is how to encourage this saving, beyond the existing tax deductions for contributions to pension funds which tend to be ineffective (they carry a lot of "dead weight") and are regressive from a tax standpoint. Another is to promote financial products that can guarantee the supply of life annuities at a cost affordable to financial intermediaries and insured persons.

Ultimately, we face the same demographic, labour, economic, financial and social problems that we already had before the COVID-19 crisis, only now we have less time and much less room for action. ■

7 OECD (2020). "Retirement Savings in the Time of Covid-19", OECD, Tackling Coronavirus (Covid-19): Contributions to a Global Effort. Policy Brief.

NATIONAL TRANSFER ACCOUNTS. LESSONS FOR INTERGENERATIONAL POLICY

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1. Introduction

The organisation of today's societies faces important challenges in the short and medium term. One of the most notable among these is undoubtedly the strong demographic transition that is taking place, which implies a progressive ageing of the population. Low birth rates, together with the sustained growth in life expectancy, cause a continuous increase in the average age of the population, as well as in the dependency rate of the elderly (percentage of population 65 years and over on the working age population).

The change in the age composition of a country's population inevitably implies the need to adapt certain structures and institutions, which are largely consolidated but only designed in line with a pyramidal age structure. By taking a look at people's life cycles we can understand why. From an economic standpoint, an individual's life cycle is divided into three major stages. During the first (childhood and early youth), as well as in the third (retirement age), people have consumption needs, but yet they barely have the capacity to generate the income needed to satisfy them. Only during the central stage of their life cycle, known as the active age, they can use their main resource to generate income: their job. Hence the need for mechanisms to move income, from the stage where people can access earned income to those in which we need to consume without having the ability to generate the necessary resources. These mechanisms are diverse. To begin with, through the markets: people can save during their employment stage and use these savings when they retire, which involves displacement or intertemporal reallocation of resources. In the case of children, however, a parallel reasoning would mean that they would have to apply for a loan at birth to return it during their working life. It is not precisely the markets, neither in the case of children nor in the case of adults, that are the main mechanism of reallocation, but two other institutions: the family and the state, respectively. However, the intervention of families and the public sector implies that the redistribution of resources is not necessarily intertemporal (between different times in the life cycle of the same person), but intergenerational (between different age groups).

The role of markets, households, and the public sector in the intertemporal and intergenerational redistribution of resources changed radically throughout the twentieth century, while two separate events were occurring. First, a steady and sustained increase in life expectancy, while birth rates were getting lower. In traditional society, the family looked after the economic needs of all its members, redistributing resources from working adults to children and the elderly, thanks to a so-called intergenerational agreement. Secondly, in addition to the growing development of the capital market, the development and consolidation of the welfare state began to develop, whereby the public sector comes into play as a redistributor of resources. Like families, the state focuses on redistributing resources between different generations, setting into motion social spending schemes mostly aimed at economically dependent age groups, but funded by taxes and contributions from employed individuals.

In this report, the role of the three institutions of intergenerational redistribution of the aforementioned resources is addressed: the markets, the family and the public sector, using the information provided by the Naional Transfer Accounts (NTA). This is an international collaboration project involving the participation of over 80 countries, in which the age factor is introduced into the different macroeconomic aggregates, in a manner consistent with national accounts. The NTAs provide invaluable information that enables us to observe, for each country, how resources are redistributed between different ages, at a given point in time. The NTA data for Spain show that the welfare state, as in many other countries, has a strong bias in favour of supporting the elderly, while leaving children and young people much more unsupported. As a result, the economic crisis has had an unequal impact on age groups, and the elderly were those who bore the negative consequences best.

2. National Transfer Accounts (NTAs): intergenerational transfers

The development of NTAs by country began at the beginning of this century within the framework of an international collaboration network made up of different universities and research centres. The NTA methodology has given rise to a manual published by the United Nations (UN, 2013). The starting identity for NTAs is the same as in national accounting, with a few additions:

$$YL+YA+TG^{+}+TF^{+}=C+S+TG^{-}+TF^{-} \qquad [1]$$

Where YL is earned income, YA is income from assets, TG and TF are public and private transfers respectively, received (+) or paid (-), C is consumption and S, savings. Therefore, the left side shows the different sources of income, while the right, the possible uses. Rearranging the expression [1] we obtain the life cycle deficit (LCD), defined as the difference between consumption and earned income:

$$C-YL=(TG^{+}+TG^{-})-(TF^{+}+TF^{-})+(YA-S) \qquad [2]$$

Life-cycle deficit (LCD) | Net public transfers | Net private transfers | Asset reallocation

Equation 2 implies that the LCD must be financed through three possible mechanisms: public or private transfers, or through the reallocation of assets (savings / de-savings). It must be met for the economy as a whole, but also for each age or age group in particular. Similarly, it can be obtained in terms per capita or in aggregate (by multiplying the number per capita by the number of individuals of each age).

The development of NTAs is a complex process that requires the meticulous exploitation of microdata from different surveys. For example, to estimate consumption, a distinction is made between private and public in the first place, and each in turn, is broken down into various categories according to the availability of data. At least one age profile is differentiated for health consumption, education and other consumption. The main source of data for estimating the profile of private consumption by age in Spain is the national Household Budget Survey (HBS).

In the case of public consumption, the data source varies for each category. The consumption profile of health services is estimated using mainly the National Health Survey, together with information from the National Statistics Institute (INE). Education, on the other hand, is obtained from data published by the Ministry of Education and also the INE. The rest of public consumption is considered other consumption and is included equally among all ages. Children's consumption is charged according to an equivalence scale. For earned income, the main source of information is the European Income and Living Conditions Survey (EU-SILC).

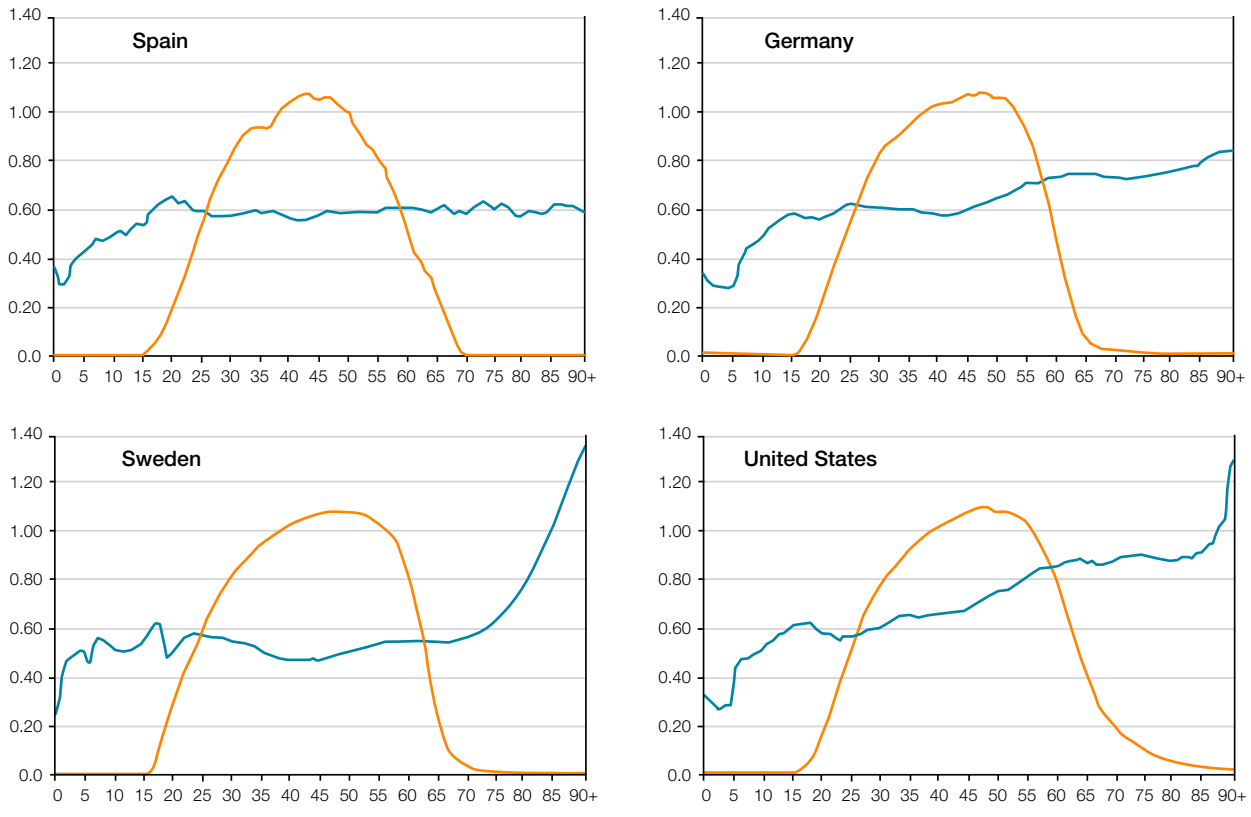
The use of different databases must also be consulted to construct the age profiles of public transfers, received and paid for by individuals of each age. Regarding benefits, these are differentiated by type of benefit (non-contributory pensions, unemployment, retirement, disability, orphanhood, widowhood, maternity, etc.), and the profiles by age are constructed using different sources of official information (INEM and MTAS, among others). In terms of the tax profiles, these are constructed from the information taken from the HBS and the EU-SILC.

When it comes to private transfers, since these are transactions that take place within the same country, their aggregate will be zero, except for net current transfers with the rest of the world. However, knowing their profiles by age is extremely helpful in understanding how resource transactions occur between different ages. Estimating these profiles is especially difficult in countries like Spain where there is no single micro-survey that collects reliable information on income and expenditure, so it requires the combination of information from two separate surveys (HBS and EU-SILC).

Figure 1 illustrates the profiles by age of earned income and per capita consumption obtained in Spain compared to other European countries (Sweden and Germany) and the United States. In order to make the results as comparable as possible, the NTA methodology proposes the standardisation of results expressing them in proportion to the average earned income in the country between the ages of 30 and 49. Although certain country-specific characteristics are observed, both consumption and earned income are as expected. Earned income is positive from the age of 16 and has the typical inverted U-shape, which reaches its highest values in the middle ages of working life. In Sweden, and especially in the United States, it can be observed how earned income has a certain importance beyond the age of 65, while in Germany and Spain it is practically zero. In terms of consumption, the per capita profile is very similar for the four countries observed up to age group 40-45, an age from which some interesting differences can be observed. On one hand, in the case of Spain, the profile remains practically flat. In contrast, in Germany and the United States a certain growth can be observed, which in the case of the United States, is especially visible from the age of 80-85. Meanwhile in Sweden there is no growth in per capita consumption beyond the age of 70, but from here the increase is very pronounced, to the point that an 85-year old consumes almost twice as much as a 70-year old. These increases in consumption in the final stage of the life cycle are mainly due to public consumption and in particular, to healthcare expenditure and long-term care.

On the other hand, the NTAs also provide the age profiles of the three mechanisms that finance the life cycle deficit (or use the surplus) according to the equation [2]: public transfers, private

Figure 1. NTA: Profiles per consumption age (C) and earned income (YL)



Source: authors' own elaboration from NTA data available on www.ntaccounts.org. Figures refer to the year 2000 for Spain and 2003 for Germany, Sweden, and the United States. Values expresses in proportion to average earned income for age group 30 to 49 in each country.

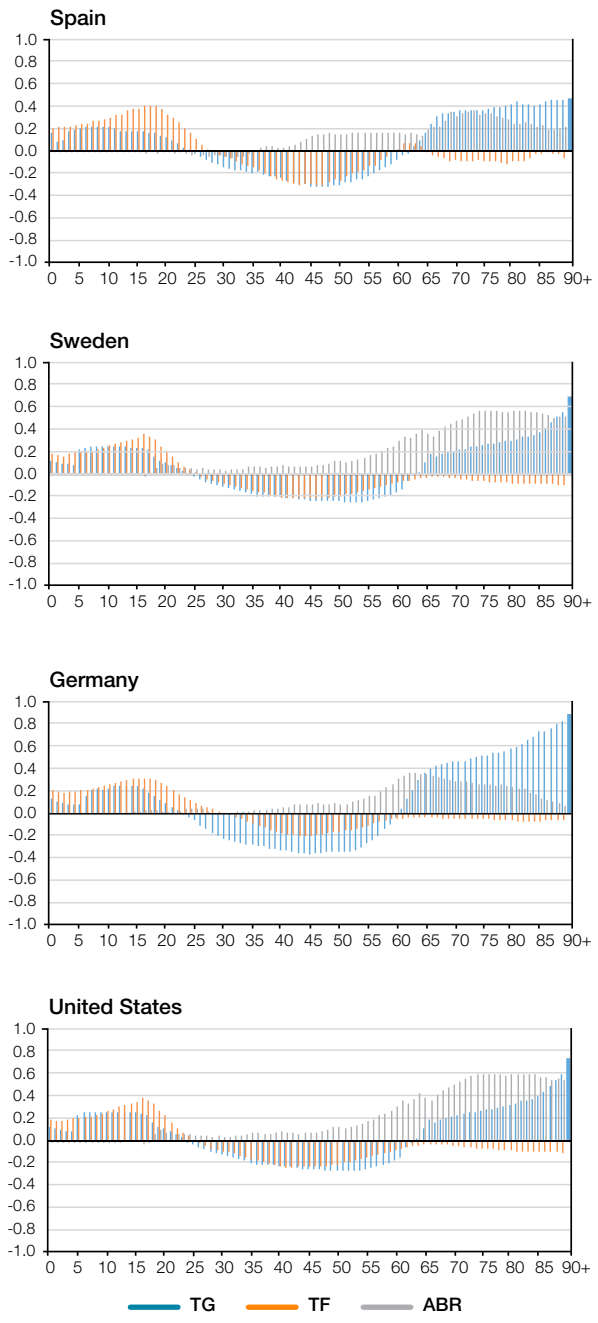
transfers (intra- or inter-family) and intertemporal reallocation of assets. The results for the four selected countries are illustrated in Figure 2. Net public transfers show the expected profile in the four countries, as they are positive in the two stages dependent on the life cycle (childhood and old age), and indicate that individuals of these ages receive more transfers from the public sector than the taxes they pay, especially in the case of the elderly. In contrast, during the central stage of working life, taxes paid are higher than public transfers received. However, there are some interesting differences. In the case of children, Spain generally has slightly lower levels of public transfers than the rest. In the case of Sweden and the United States, even children between the ages of 5 and 12 receive more public than private transfers. For the elderly, the level of public transfers received is very stable in the case of Spain from the age of 65-70. In contrast, in other countries, these start at lower levels and increase significantly from the age of 80.

When it comes to private transfers, it should be noted that they are the main source of funding for the deficit of young people between the ages of 15 and 20 (well above public transfers, especially in Spain). In contrast, adults, like individuals of working age, are not recipients, but donors of transfers (albeit for a much lower total). Finally, net reallocations of assets are relevant once individuals enter the labour market, although their importance is quite different in the four countries analysed. While Spain and Germany show modest levels, in Sweden and the United States intertemporal reallocation of assets plays a key role in financing the life cycle deficit of the largest, even above public transfers to very advanced ages.

3. The welfare state and its role during the economic crisis

The welfare state is undoubtedly one of the great challenges of modern societies, although there are differences between countries in terms of their quantitative and qualitative importance. In 2017, public spending in OECD countries accounted for an average of 41% of GDP, while public spending on social policies (health, education and social support)[1] exceeded 26% of GDP (Figure 3). Spain is practically at the average and in the lower band of European countries, where the presence of the public sector is significantly higher than in the United

Figure 2. NTA: profiles by age of public transfers (TG), private transfers (TF) and asset reallocation (ABR)



Note: Values expresses in proportion to average earned income for age group 30 to 49 in each country.

Source: authors' own elaboration from NTA data available on www.ntaccounts.org. Figures refer to the year 2000 for Spain and 2003 for Germany, Sweden, and the United States.

1 "Social support" includes different public social spending schemes, which are mostly monetary transfers (contribution and non-contribution pensions, unemployment, family allowances, etc.), but also in kind (for example, those related to housing, care for dependents, etc.)

> *According to a recent IMF report, social spending in Spain seems to be less effective than in other European countries, judging by the values shown by the poverty and inequality indicators*

States and Japan. In France, Finland and Denmark, total public spending clearly exceeds 50% of GDP, while social spending is above 37%.

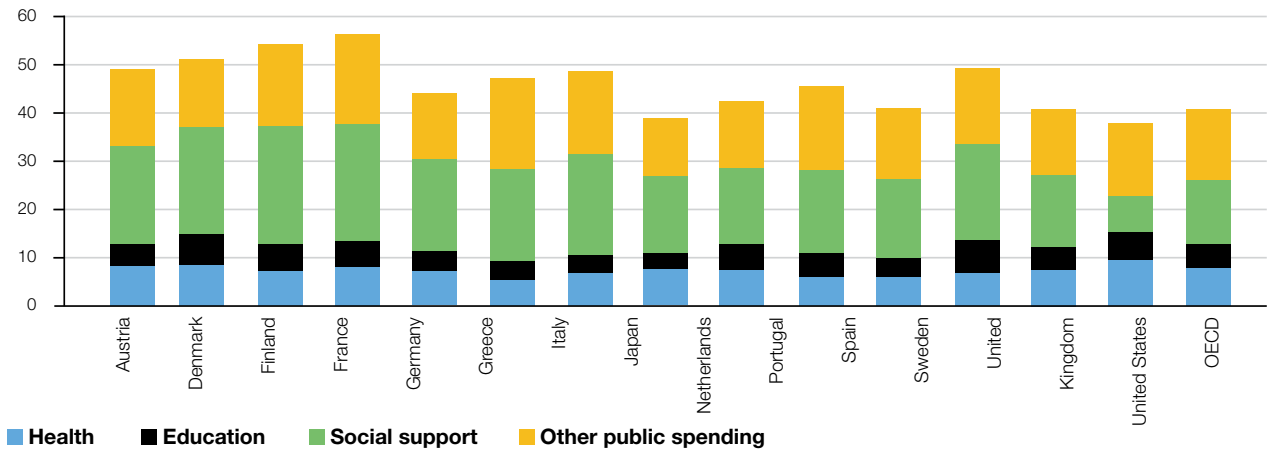
Social policies represent a powerful tool in the fight against poverty and inequality, as their goal is to ensure a dignified standard of living for citizens through the interpersonal redistribution of resources. However, as a recent IMF report (Vtyurina, 2020) reveals, social spending in Spain seems to be less effective than in other European countries, judging by the values shown by the poverty and inequality indicators. Figure 4 shows the evolution of the AROPE rate (risk of poverty and/or social exclusion), the poverty indicator used by the EU from the 2020 strategy. As can be observed, in Spain this indicator it is clearly above the euro zone average, but far from countries such as Denmark, France or Germany. However, Spain is also experiencing one of the worst trends, as it has increased by almost 2 points in the period 2005-2018, while in the euro zone it has fallen by almost half a point.

Just as worrying, if not more, is the evolution of the AROPE rate by age groups shown in Figure 5. In 2005, children under 18 and over 65 had very similar AROPE rates (29.0% and 30.1 % respectively).

In 2018, however, the rate had increased slightly for children (29.5%), while for adults it had fallen by almost half (17.0%). In fact, the relative position of the over 65 age group had gone from being the worst before the crisis, to being clearly the best in 2018. And above all, an increase in distances can be appreciated. The age group most affected by the Great Recession was young people aged between 18 and 24, whose AROPE rate in 2018 was more than double that of those over 65.

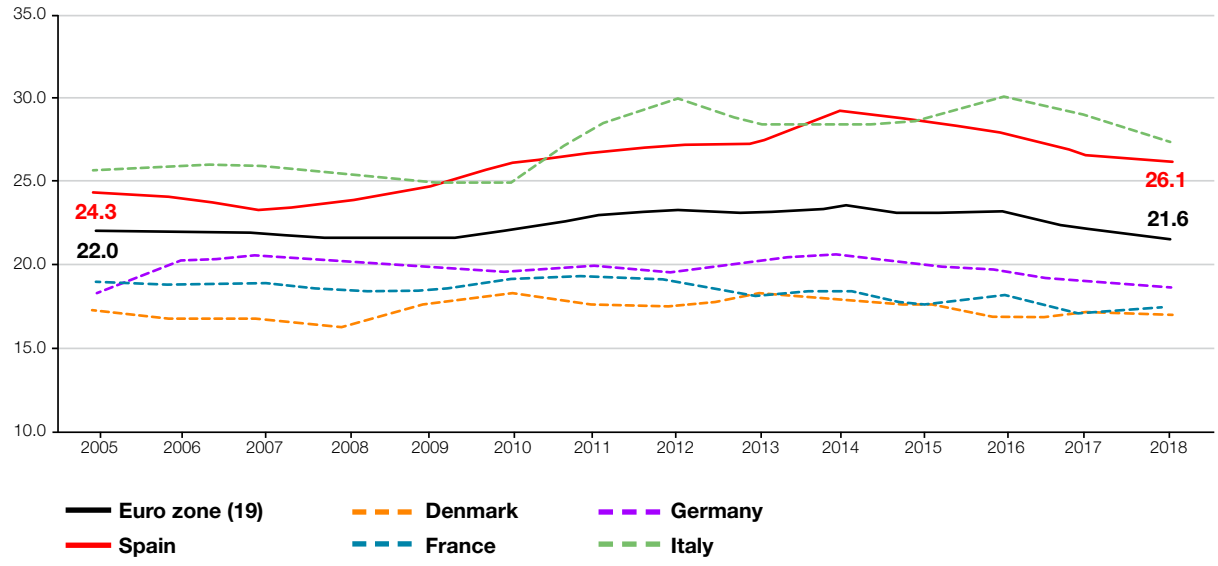
The evolution of poverty data by age groups over the last few years merits a deeper analysis, which inevitably leads to an assessment of the role that social transfers have played during the economic crisis. On one hand, pensions have been decisive in guaranteeing the income of their recipients (mainly the elderly), which has allowed them to improve their relative position while a large part of the active population lost their jobs, yet unemployment benefits did not cover a large part of their reduction in income. According to a report by the Ageing Working Group (EC, 2018), Spain is the European Union country with the most generous pensions, taking into account its replacement rate (ratio between the initial retirement pension and the average salary). As shown in Figure 6, in 2016, this rate reached 75% for all public pensions in Spain, and exceeded 78% in the case of contributory pensions.

Figure 3. Public spending in the OECD (in % of GDP)



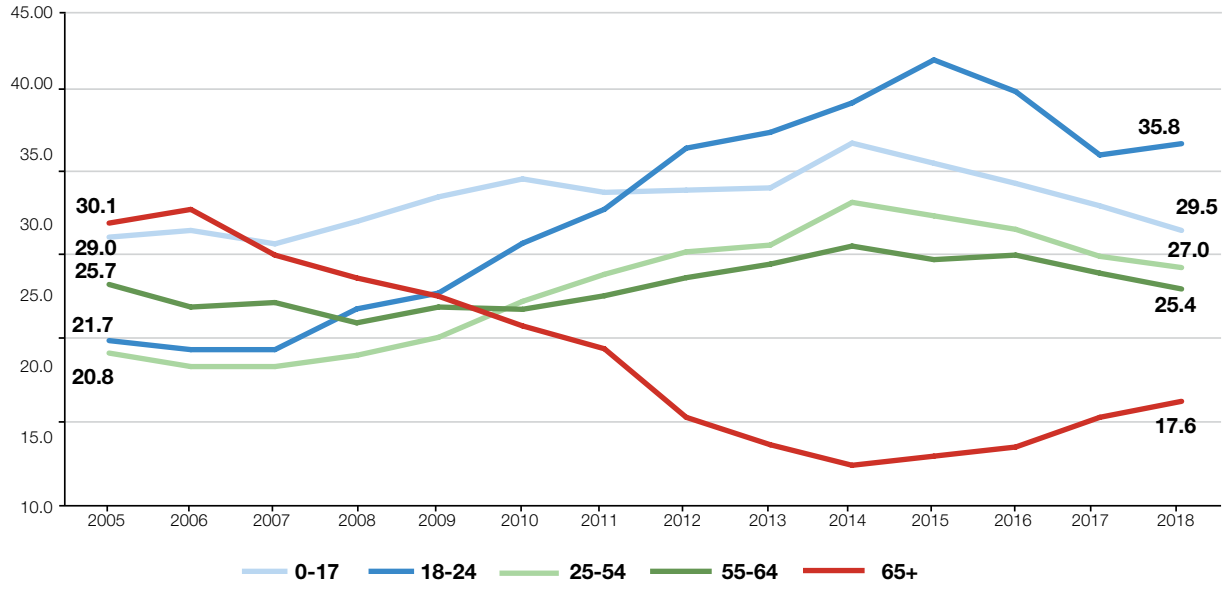
Source: authors' own elaboration using OECD National Accounts Statistics database. Data for 2017.

Figure 4. Evolution of the risk of poverty and social exclusion rate (AROPE)



Source: authors' own elaboration using EUROSTAT.

Figure 5. Evolution of the risk of poverty and social exclusion rate (AROPE) in Spain per age groups



Source: authors' own elaboration using EUROSTAT data for 2018.

> *Ultimately, the data indicates the presence of a clear bias in the welfare state towards the protection of the elderly, leaving children and young people much more unprotected*

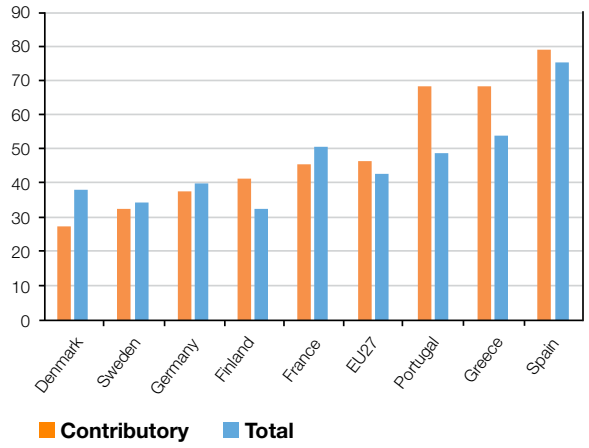
On the other hand, the crisis was especially hard on younger workers, whose unemployment rates rose to more than 50%, clearly impoverishing this age group while the rights to to obtain substitute economic benefits were rapidly diminishing. In the case of children, since the majority of heads of households belong to the active age group (between 25-54), the evolution in their poverty risk has been similar, taking into account, moreover, the insufficiency of the existing family support policies in our country. Figure 7 shows public social spending on family support policies in Spain in relation to Europe. Apart from being clearly in the low band (barely 1.2% of GDP compared to the 2.2% average in the euro zone), the figure has remained constant, reflecting that public policies have made no particular effort to protect families and young people from the effects of the economic crisis.

Poverty and the risk of child exclusion depend on many factors, not just public policies to help families. But these policies play an important role, as shown in Figure 7. The AROPE rate for children under 18 tends to be lower in countries with a well-established public family support system, as is the case of the Nordic countries, France and Germany. On the other hand, Spain is among those countries with high rates of child poverty and low levels of public support.

Ultimately, the data indicates the presence of a clear bias in the welfare state towards the protection of the elderly, leaving children and young people much more unprotected. The Great Recession was the definitive proof that this bias has serious consequences. NTA data are very useful to complete the analysis and reinforce this conclusion. First, Figure 9 shows that all countries with a consolidated welfare state tend to protect the older population more. In all the European countries observed, those aged 65 and over receive the equivalent of more than 50% of their consumption in net public transfers (in Sweden it reaches 100%). In the case of the youngest, this percentage reaches a maximum in Finland (46.3%), followed by France and Hungary (both 44.3%).

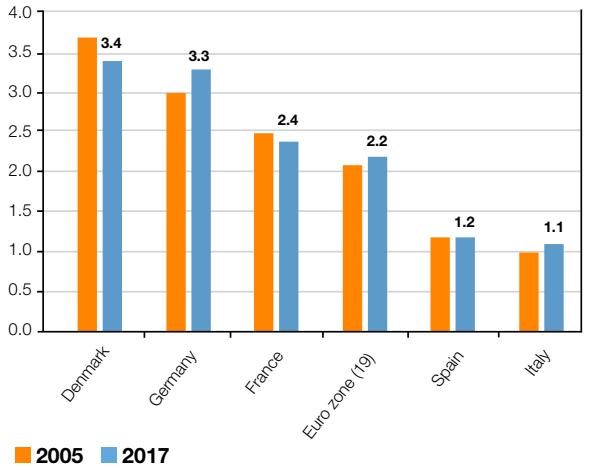
With reference to Spain, the importance of public transfers in the consumption of the elderly has been rising throughout the period 2000-2012, while it for young people, it has remai-

Figure 6. Replacement rate of public pensions in Europe (2016)



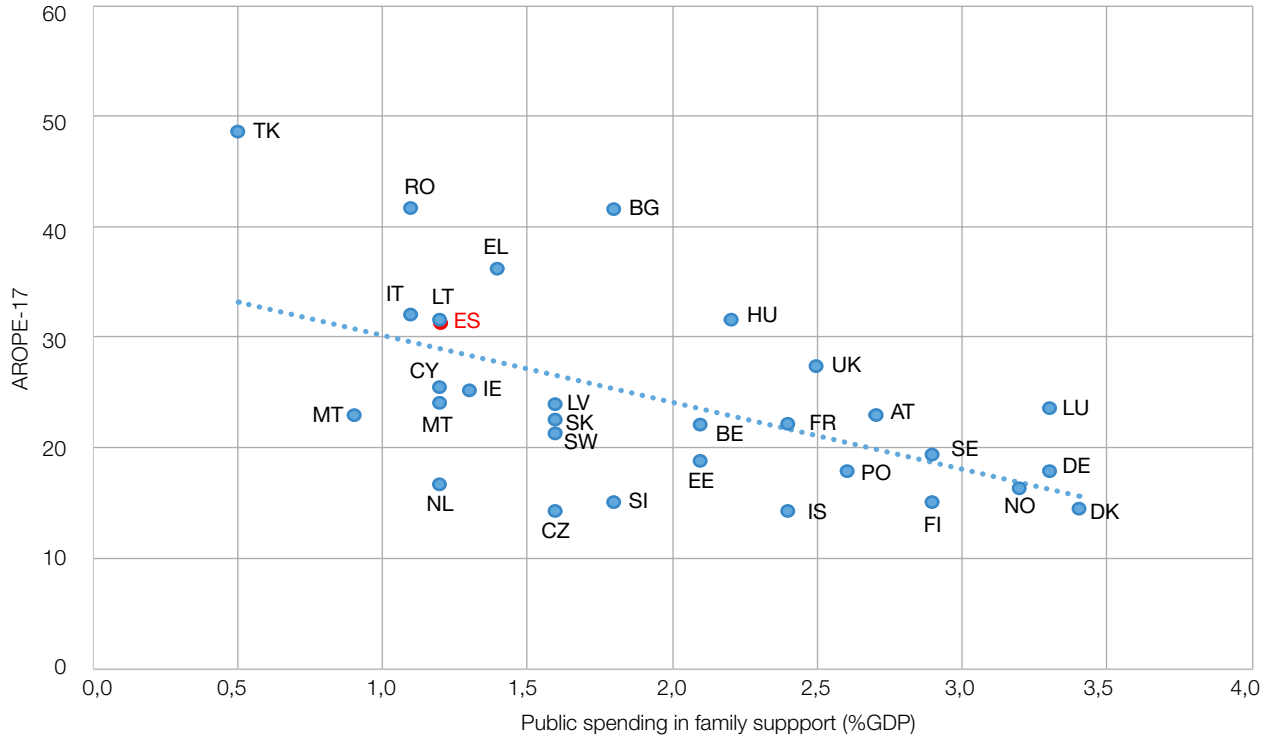
Source: authors' own elaboration using EC (2018), The 2008 Ageing Report.

Figure 7. Public social spending on family support policies in Europe (in %GDP)



Source: authors' own elaboration using EUROSTAT.

Figure 8. Child poverty and/or social exclusion (AROPE 0-17) and public family support policies in Europe



Source: authors' own using EUROSTAT data for 2017

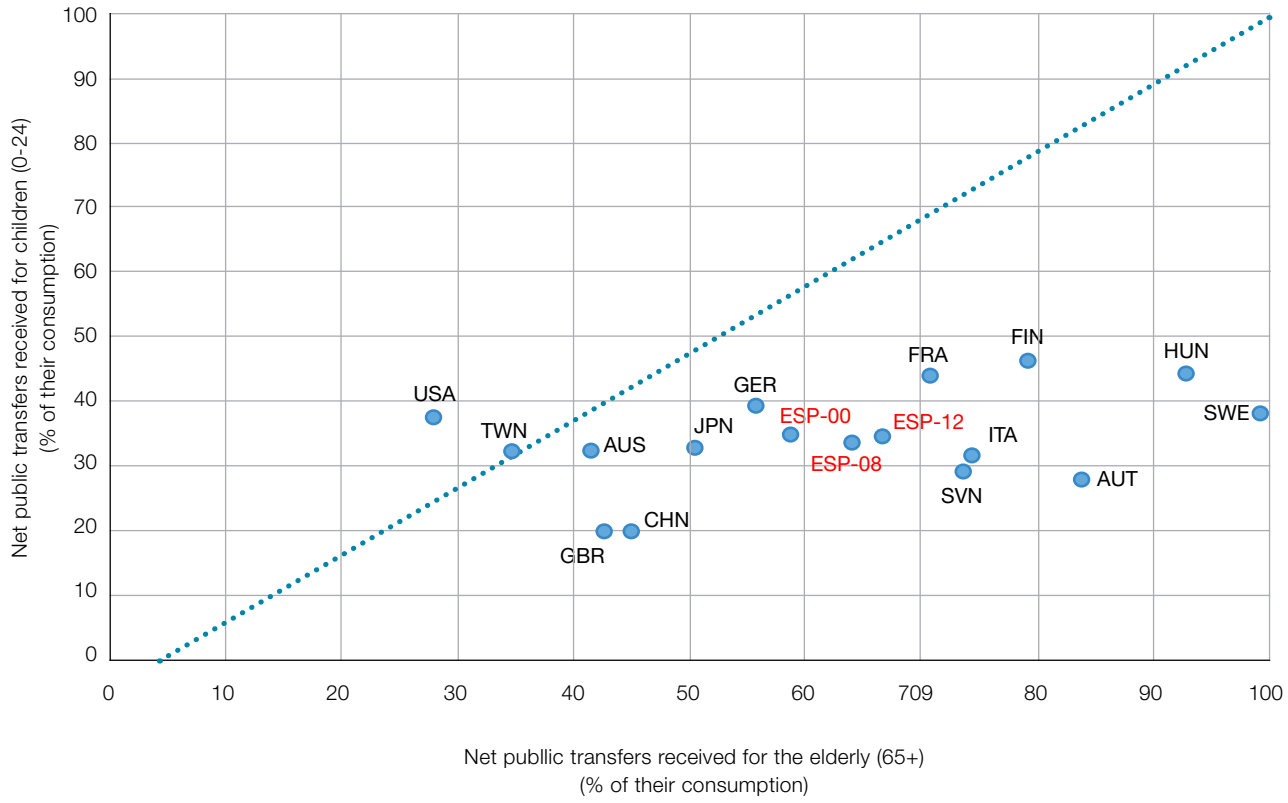
ned almost the same. Figure 10, constructed with NTA data for Spain in 2000, 2008 and 2012, completes this information. Private family transfers are the main source of funding for young people's consumption under the age of 25, followed by public transfers (mainly through spending on education) and earned income, which is only relevant for young people over the age of 18. With the crisis, we can see a clear decline in the level of consumption in this age group, mainly due to the fall in public transfers and earned income. In the case of the elderly, public transfers are the majority source, followed by reallocation of assets and income. In this age group, the level of consumption in real terms has varied less, while the public transfers received grew in 2008 and remained practically the same in 2012. On the other hand, the importance of reallocating assets has decreased, while earned income has doubled between 2008 and 2012. It should also be mentioned that private transfers to younger age groups observed in 2000 have been greatly reduced in later years.

4. Conclusions

The welfare state has become an important mechanism for the intergenerational redistribution of resources, along with families and markets themselves. Public pension and healthcare systems, as well as long-term care in some countries, have made the public sector the main source of income to cover the consumption needs of the elderly, and these policies have been financed mainly with taxes and contributions by those of working age. However, In the case of financially dependent children and young people, the family has traditionally taken on the financial burden, and continues to do so. Therefore, it can be stated that today's societies have socialised the needs of their older population, but have kept most of the needs of children and young people covered in the private sphere.

The progressive ageing of the population in advanced economies raises key issues about the sustainability of welfare states that are so heavily biased towards the protection of the elderly.

Figure 9. The welfare state bias: net public transfers received by young people (0-24) and older people (65 and older) in relation to their consumption



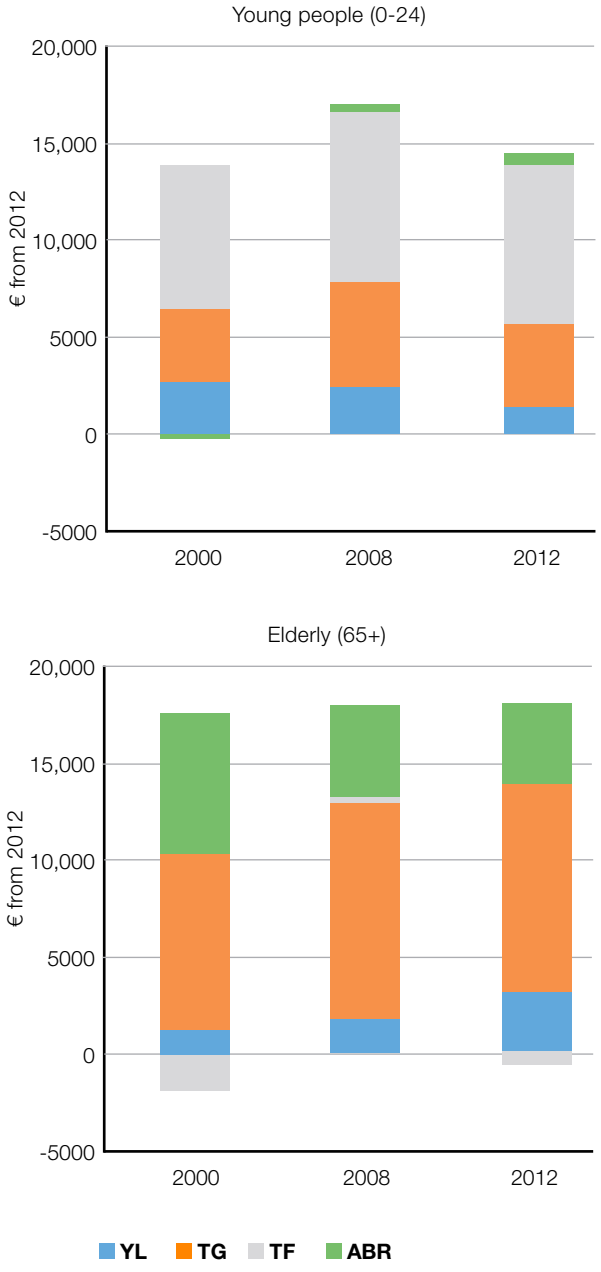
Source: authors' own from NTA data (www.ntaccounts.org). Data refer to the years 2003 (Sweden-SWE), 2004 (Japan-JPN), 2005 (Hungary-HUN), 2006 (Finland-FIN), 2007 (UK-GBR and China CHN), 2008 (Germany-GER) , Italy-ITA), 2010 (Australia-AUS, Austria-AUT, Slovenia-SVN and Taiwan-TWN) and 2011 (France-FRA and United States-USA) For Spain the result for the years 2000, 2008 and 2012 is indicated according to Patxot et al. (2015) and Solé et al. (2019).

In addition, the great economic crisis that began in 2008 has proven that not protecting children and young people with social policies can have serious consequences. Spain, one of the European countries with the lowest level of family allowances, has seen the poverty rates of the youngest population deteriorate significantly compared to the previous decade.

Pension and health systems have acted as a safety net to protect our elderly population, while the younger ones have been left at the mercy of the crisis. The consequences in the medium and long term can be disastrous, according to a report by the Foundation for Social Studies and Applied Sociology (Flores Martos, 2016), which observed that 80% of people who experienced seriously economic difficulties as children or adolescents, also experience them in adulthood.

Poverty in the present is a source of poverty in the future, so it is time to seriously rethink the role of the public sector in reversing this problem, and especially in Spain, where it has only worsened in the last decade.

Figure 10. Sources of financing the consumption of young people (0-24) and the elderly (65+) in Spain



Note: According to the expression [2], consumption (C) is the sum of earned income (YL), public transfers (TG), private transfers (TF) and reallocation of assets (ABR).

Source: authors' own using data from Patxot et al. (2015) and Solé et al. (2018).

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THE RELATION BETWEEN WELFARE REGIMES AND INTER-AGE REALLOCATION SYSTEMS IN SELECTED EU COUNTRIES*

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Abstract

Previous research linking transfers and welfare regimes is to some extent limited, as it focuses mainly on either public or private transfers or it takes into account only certain age groups. In order to overcome these problems, we comprehensively measure public and private intergenerational transfers, as well as asset based reallocations by applying the National Transfer Accounts (NTA) methodology. Moreover, we take into account gender specific transfers for all age groups. We link welfare regimes and inter age reallocation systems using comparable NTA results for 10 EU countries from 2010. Based on five indicators, this paper shows a clear connection between welfare regimes and inter-age

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reallocation systems and classifies countries into three different groups: (1) social democratic – including Hungary, Slovenia, and Sweden, (1) conservative – including Austria, Finland, France, Italy, and Spain, and (3) liberal – including Germany and the United Kingdom.

1. Introduction

The generational contract is the most important and continuous dimension of contemporary welfare systems. Much of the recent debate related to this contract focuses on the public dimension only (as also stated in Albertini, Kohli, & Vogel, 2007). However, to fully understand the functioning of the welfare systems, the private dimension has to be taken into account as well. In the last decade, scholars have recognized the importance of private transfers and their link to the welfare regimes. All these previous studies, however, lack a comprehensive inclusion of both private and public transfers. The majority connect transfer and welfare regimes by focusing mainly on private transfers (e.g., Albertini & Kohli, 2013; Albertini et al., 2007; Attias-Donfut et al., 2005; Mudrazija, 2014). Some studies take into account both public and private transfers (Brandt & Deindl, 2013; Mudrazija, 2016), but they limit their focus only to certain age groups. They use data from the SHARE survey (Survey of Health, Ageing and Retirement in Europe), in which only individuals aged 50 or over were interviewed. Therefore, they omit transfers flowing from younger parents to their children. In addition to excluding the most significant flows of household private transfers (see Gál, Vanhuysse, & Vargha, 2018), analyses based on SHARE exclude representatives of liberal welfare regimes.

In order to overcome these problems, our paper examines whether there is a connection between welfare regimes and inter-age reallocation systems based on National Transfer Accounts (NTA) data and indicators. We take into account both private and public transfers, all the age groups and also the gender dimension as well. Our paper contributes to the welfare regimes' literature by incorporating several dimensions of welfare domains. We take into account social provision provided by three different institutions – the state, market, and the family – denoted as the 'state–market–family nexus'. Because social provision varies for different age groups in the different countries, we separately estimate social provision to the young and to the elderly. Secondly, we do not analyse only private intergenerational transfers that go through monetary transactions or are exchanged for money, but also those transfers that result from the family provision of welfare in terms of unpaid household work. This means that the

> *"To classify the countries, the typology of the welfare regimes of Esping-Andersen (1990) is used, which distinguishes between conservatives (continental Europe), liberals (Anglo-Saxons) and social democrats (Nordic countries)"*

'care–welfare nexus' is included as well, not only the work-welfare nexus. Thirdly, we take into account the gender dimension. The NTA methodological framework enables us to estimate the level of women's independence, by using the gender-specific paid labour (in this paper indicated as 'gender-specific work–welfare nexus'), as well as the gender-specific balance between paid and unpaid labour (in this paper indicated as 'gender-specific care–welfare nexus').

We first discuss Esping Andersen's typology of welfare regimes. Next, the main characteristics of welfare regimes are presented, followed by classification of analysed countries into specific welfare regimes. In section 3 we briefly introduce the NTA methodology and present the indicators we develop in order to link inter age reallocation systems and welfare regimes. We then describe the degree of importance of the state, markets, and the family in financing the dependent populations in the Results section. Section 5 discusses the results and concludes.

2. Theoretical framework

2.1 Typology of welfare regimes

Countries with similar institutional characteristics can be classified into the same welfare regime. The most widely used approach of systematic country classification is Esping Andersen's (1990) typology of welfare regimes that distinguishes between conservative (Continental European), liberal (Anglo-Saxon), and social democratic (Nordic) welfare regimes. Even though widely used, Esping-Andersen's (1990) seminal work was followed by a large body of literature challenging his initial typology. First, it was criticized by the misclassification of certain countries – in the European context, Mediterranean countries should constitute a separate regime according to Leibfried (1993) and Ferrera (1996). Secondly, the exclusion of additional countries or regimes – in the European context, this mainly refers to adding the Central and Eastern European post communist/post socialist

countries as a separate regime type (e.g., Fenger, 2007). Thirdly, Esping Andersen (1990) focused on the work–welfare nexus, and his typology is not completely applicable to other welfare domains, such as the care–welfare nexus (Lewis, 1992; Esping-Andersen, 1999). According to Hernes (1987), 'women friendly welfare states' promote women's independence and encourage a minimum tension between their paid and unpaid work. It is therefore suggested that domestic and caring labour are added to the gender-specific paid labour (Orloff, 1993).

2.2. Main characteristics of different welfare regimes

According to Esping-Andersen's typology, in a **liberal** welfare regime, the state encourages the market. It does so either by actively subsidising private welfare institutions or by passively guaranteeing only a social minimum mainly to the low income working class (Esping-Andersen, 1990, 1999). Even though liberal welfare states are characterized by little state support in the social care provision, a high provision of health care exists (Stoy, 2014). Concern about gender equality is low and the role of the family is marginal in a liberal welfare regime (Esping-Andersen, 1990, 1999).

A **social-democratic** welfare regime promotes equality at the highest standards. It guarantees workers full participation in the quality of social rights. The huge costs of maintaining universal social rights lead to a promotion of full employment. The state crowds out the private sector more intensively than in other countries. The social democratic welfare states encourage women's right to participate in the labour force (Esping-Andersen, 1990, 1999).

Conservative or Continental welfare regime institutions follow the traditional norms of the Church and the guiding principle of authority. The state guarantees social rights, but they are conditional upon financial contributions. The benefits are therefore work- and employment-dependent. Traditional family is emphasized and the state only interferes when the family's capacity to serve its members is exhausted (Esping-Andersen, 1990, 1999).

Additionally, in European settings, **Mediterranean** and post-communist countries can be distinguished from the fundamental liberal, social-democratic, and conservative welfare regimes. In the Mediterranean countries, smaller institutional development leads to a lack of an articulated social minimum, with large gaps in protection. The peak of generosity comes in old age in the form of publicly provided pensions. One of the main features of the Mediterranean welfare regime is the extended role of the family (Ferrera, 1996; Esping-Andersen, 1999).

> *"The classification of welfare regimes we use in this article is mainly based on the theoretical review of 23 studies by Ferragina and Seeleib-Kaiser"*

The welfare states of **post communist** countries demonstrate a strong emphasis on redistribution in order to prevent poverty (Beblavy, 2008). Communist social policy was characterized by full employment and provision of cheap or even free health care and education. Massive unemployment during transition times led to high unemployment benefits and early retirement schemes (Deacon, 2000). A remarkable stability of state provision of social benefits still exists.

2.3. Classification of countries into specific welfare regimes

To determine how inter age reallocations correspond to the classification of countries into different welfare regimes, we study 10 EU NTA countries: Austria, Finland, France, Germany, Hungary, Italy, Slovenia, Spain, Sweden, and the United Kingdom. Esping Andersen (1990) gives only 'ideal types' of welfare regimes. Although some countries are indeed very close to the ideal types and can be defined as regime prototypes (Ferragina & Seeleib-Kaiser, 2011), the majority of them can be classified into different regimes when different indicators and methods are used for the classification. Welfare regime classification in this paper is thus mainly based on Ferragina and Seeleib Kaiser's (2011) theoretical review of 23 studies.

The United Kingdom is characterized as a liberal welfare regime, whereas France, Germany, and Austria as conservative regimes, Sweden and Finland are social democratic welfare regimes. Even though Italy can also be classified into the conservative regime, when analyses include a separate Mediterranean regime type, Italy is always classified into this type. Spain is not included in the systematic review by Ferragina and Seeleib Kaiser (2011). We therefore hypothesize that Spain, together with Italy, falls into the Southern European regime, as also concluded by many other scholars (see Kammer, Niehues, & Peichl,

2012). Post-communist countries are highly heterogeneous, and therefore, according to Rys (2001), they should not be combined into a distinct welfare regime type. Therefore, we have decided to classify Hungary and Slovenia as traditional welfare regimes, rather than forming separate post communist regime.

3. Methodology and Data

3.1. National Transfer Accounts

This paper uses publically available gender-specific NTA data for year 2010 (Istenič et al., 2016), retrieved from Agenta project webpage (http://dataexplorer.wittgensteincentre.org/nta/). The NTA research framework is described in detail by Lee and Mason (2011), and the methodology of constructing the accounts is described by a United Nations (2013) manual. The details about specifics of the European NTA are described in Istenič et al. (2016).

The central category in NTA is the life cycle deficit (LCD), which shows the difference between age specific (public and private) consumption and age specific labour income. The life cycle deficit is positive for children and the elderly. Meanwhile, for people of working ages, labour income exceeds consumption, which leads to a negative LCD, i.e., a life cycle surplus (LCS). The LCS indicates economic independence of the working-age population and is used to fund the LCD of the young and the elderly. LCD is funded through intergenerational flows in a form of public and private transfers and public and private asset based reallocations. Public transfer inflows are, for example, publicly funded education, health care, and pensions, whereas public outflows are taxes and social contributions paid. Private transfers include flows within households (intra-household transfers) and between households (inter-household transfers). Public and private asset based reallocations include interest paid on public debt, return on capital, etc.

By applying the NTA methodology, we estimate per capita averages by age (henceforth 'age profiles') based on survey and administrative data. The age profiles are adjusted to match the aggregate values calculated from the System of National Accounts (SNA). The main micro-level data source for constructing income related age profiles is the EU Statistics on Income and Living Conditions (EU SILC). Private consumption age profiles are estimated using the Household Budget Survey (HBS). As expenditures are reported only at the household level, specific allocation rules (e.g., regression method, equivalence scale) are used to distribute household expenditures among the household members. Public consumption is mainly derived from administrative data.

One of the main contributions of the NTA research framework is the potential to estimate private intra household transfers (e.g., parents financing consumption of their children) consistently for many countries. Private intra household transfers are estimated as a residual. Individual private consumption not financed through labour income and public cash transfers (net of taxes paid) should be financed through private intra household transfers. It is assumed that household members whose income exceeds their private consumption finance the consumption of household members who have a deficit. If the sum of resources of all household members falls short of their total consumption, the household head needs to use his or her asset income or needs to borrow resources from other households.

3.1. National Time Transfer Accounts

The SNA (and therefore also NTA) do not include nonmarket economic activities and transfers in the form of unpaid household work. To correct this bias we add estimations of nonmarket transfers measured by the National Time Transfer Accounts (NTTA). The NTTA age profiles of production, consumption, and transfers of unpaid household work are estimated using time use surveys. The fully comparable NTTA age profiles are also available as a part of the Agenta project database (Vargha et al., 2016) for 14 EU countries. From the available database, we retrieve age profiles for eight EU countries, for which the standard NTA results are also analysed. Because in the database the monetary values of production and consumption are available only for the year 2002, we monetize the time spent on production and consumption using country-specific gross hourly wages of elementary occupations in 2010 (Eurostat, 2017).

3.3. Measuring connection between inter-age reallocation systems and welfare regimes

In this paper, the connection between inter-age reallocation systems and welfare regimes is first presented descriptively for the prototypes (or typical representatives) of different welfare regimes: the United Kingdom (liberal), France (conservative), Sweden (social-democratic) and Spain (Mediterranean). Next, for all 10 analysed countries, we calculate values of five different indicators based on NTA and NTTA results that, in our opinion, capture the main characteristics of different welfare regimes.

Based on the values of indicators, we group countries with the most similar characteristics.

The first two indicators take into account the social provision of three different institutions – the state, market, and the family. Countries belonging to different welfare regimes differ with respect to the importance of public transfers (representing the state) compared to the private transfers (representing the family) or asset-based reallocations (representing the market). Previous NTA research shows (e.g., Lee & Mason, 2011) that in European countries, the young mainly rely on private and public transfers, whereas the elderly mainly on public transfers and asset-based reallocations. Therefore, our first indicator quantifies the importance of public transfers (TG) relative to private transfers (TF) in the LCD funding for the young, while our second indicator quantifies the importance of TG relative to the asset based reallocations (ABR) in the LCD funding for the elderly. Our third indicator tries to comprehensively capture the households' provision of welfare and thus combines NTA and NTTA results. It measures the importance of public transfers in the total (private and public) transfers, whereby total private transfers (TTF) include not only the private market transfers (TF) but also the monetary value of time transfers.

Our fourth indicator captures the promotion of women's independence by measuring the gender difference in economic independence. We measure gender difference in economic independence with the gender difference in the life cycle surplus (LCS). The fifth indicator enables us to estimate the balance between paid and unpaid work arrangements for both genders in different countries. It is similar to the fourth one, but measures the gender gap in total LCS relative to the total labour income. Total LCS refers to the positive difference between total production and total consumption, resulting from paid and unpaid work combined.

4. Results

4.1. State–market–family nexus and care-welfare nexus

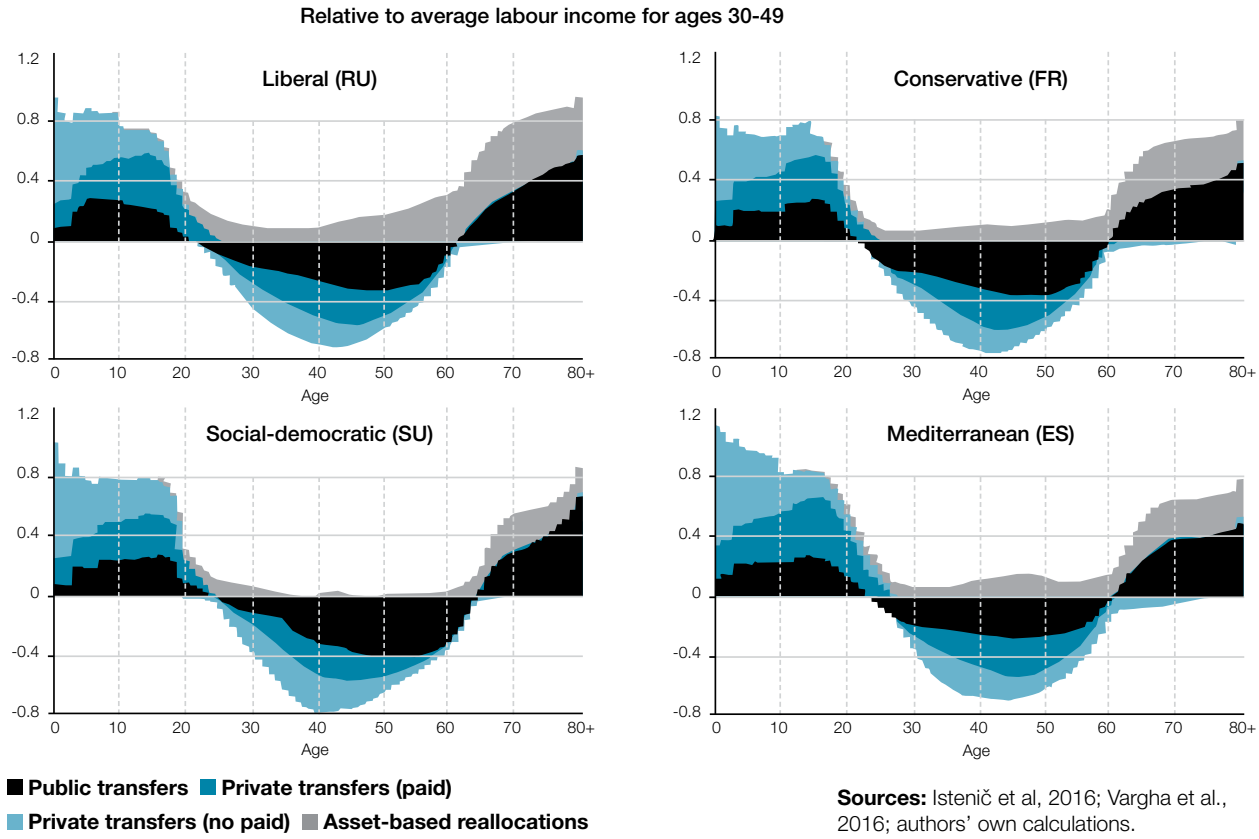
Figure 1 presents the LCD funding for the typical representatives of each welfare regime. The figure shows that countries labelled as typical welfare regimes fall into typical inter-age reallocation systems. In the UK, as in other liberal welfare states, the elderly rely heavily on private asset-based reallocations. On the other hand, in France there is a higher redistribution through the public sector. The elderly rely heavily on public transfers; and net public transfers become positive earlier than in other countries. In France, the high share of net public transfers received by the dependent population is financed by higher public contributions of the working-age population than in the UK and Spain. Similarly to France, in Sweden the working-age population also contribute greatly to public transfers.

The Swedish panel on Figure 1 shows that transfers flowing to the dependent young and old populations are funded by high social contributions from the working-age population and their extended participation in the labour market, since negative public transfers become positive at higher ages compared to the other countries. In Sweden, the relatively low private transfers to children and the relatively low ABR of the working-age population and the elderly indicate that the family and the private market have a smaller role in the LCD funding in the social democratic welfare states. In contrast, large private transfers (especially at younger ages) in the Southern European countries (Spain) indicate the importance of families in sustaining for children, and thus indicate extended role of the family in these countries. The extended role of the family in Spain is even more pronounced when we include the transfers in the form of unpaid household work, important mainly for children in all presented countries.

Table 1 ranks all 10 analysed countries by the importance of public transfers relative to private transfers in deficit funding for the young (first and third indicator) and the importance of public transfers relative to the asset based reallocations in deficit funding for the elderly (second indicator). It shows that in all countries the LCD of the young is funded through private transfers to a greater extent than by public transfers. In contrast, the old-age deficit funding differs among countries more substantially. Although in most countries public transfers are a major source of old-age deficit funding, in the UK and Germany ABR are more dominant.

Considering LCD funding of the young, Sweden reflects the highest commitment of the state to provide social protection for children, because 45.9% of the total monetary transfers are received by the public system. This also holds for Continental countries (France and Austria) and post-communist countries (Hungary and Slovenia). Germany is an exception, because the public sector is less generous towards children than in other Continental countries. The extended role of the family is also evident in Mediterranean countries, where the share of public transfers flowing towards children is lower. In Italy, for example,

Figure 1. The (total) life cycle deficit funding in 2010 in the prototype countries of each welfare regime: the UK, France, Sweden, and Spain



Sources: Istenič et al, 2016; Vargha et al., 2016; authors' own calculations.

public transfers received by a child is only 34.92% of the sum of private and public transfers.

By including the value of time transfers on top of the monetary private transfers, we capture the nonmarket part of private transfers. Second column of Table 1 reveals that the ranking position of countries stays similar even after including time transfers; however, the gap between Mediterranean countries and all the other countries becomes more pronounced.

Focusing on LCD funding of the elderly, the third column of Table 1, shows that net public transfers relative to ABR are the lowest in the UK, accounting for 39.4% of the sum of net public transfers and ABR. In Slovenia (and to certain extent also in Hungary), the state's involvement in the redistribution of income towards the elderly remains high even in the post socialist era. Further, Austria, with its generous public system (with 72.3% of public transfers relative to the sum of public transfers and ABR), falls more into a social-democratic than into a conservative welfare regime in this regard (see also Esping-Andersen, 1990). Moreover, according to our results, Germany is also not a prototypical conservative country (concluded also by Ferragina et al., 2015; Mudrazija, 2016), but more a liberal welfare state.

4.2 Gender specific work–welfare nexus versus care–welfare nexus

Figure 2 presents gender specific age profiles of labour income (production), consumption, and LCd for the welfare regime prototypes. In all countries, women earn less than men at all ages. In contrast, gender differences in consumption are rather small. In the UK the labour income of women exceeds their consumption only between age 30 and 48, and the surplus they have is the lowest among the countries. In contrast, in France, women's LCD becomes negative at age 26 and becomes positive again at age 56. Compared to France, the LCD in Spain is negative for a shorter age span (between ages 29 and 53)

Table 1. The importance of public transfers in deficit funding of the young and the elderly in 2010

Country	LCD funding of the young: TG/(TG+TF)	Country	Total LCD funding of the young: TG/(TG+TTF)	Country	LCD funding of the elderly: TG/(TG+ABR)
SE	0,459	SU	0,274	AT	0,723
FR	0,424	FR	0,270	SI	0,716
AT	0,416	AU	N.A.	FI	0,679
HU	0,415	HO	N.A.	HU	0,635
SI	0,385	SL	0,250	SE	0,631
UK	0,378	RU	0,244	IT	0,580
FI	0,373	FI	0,238	ES	0,550
ES	0,362	AL	0,220	FR	0,511
DE	0,357	ES	0,219	DE	0,432
IT	0,349	IT	0,194	UK	0,394

***Note:** N.A. = non applicable

and it is also smaller in magnitude. Gender difference in the LCD is the smallest in Sweden, where women stay economically independent between ages 33 and 62. This shows the encouragement of the state to promote women's independence in Sweden.

Figure 2 also plots gender specific total production, total consumption, and total LCD. Gender differences in production and LCD decrease when unpaid household work is included. The gender gap in total LCD stays most pronounced in the UK. The extensive amount of unpaid household production by women in Spain results in the smallest gender gap in the total production during working ages among the presented countries. In contrast, the estimated value of women's household production does not compensate for the gender gap in the market production in Sweden. Looking at the gender gap in the magnitude of the total LCS, Sweden falls somewhere between liberal and Mediterranean countries, as does France.

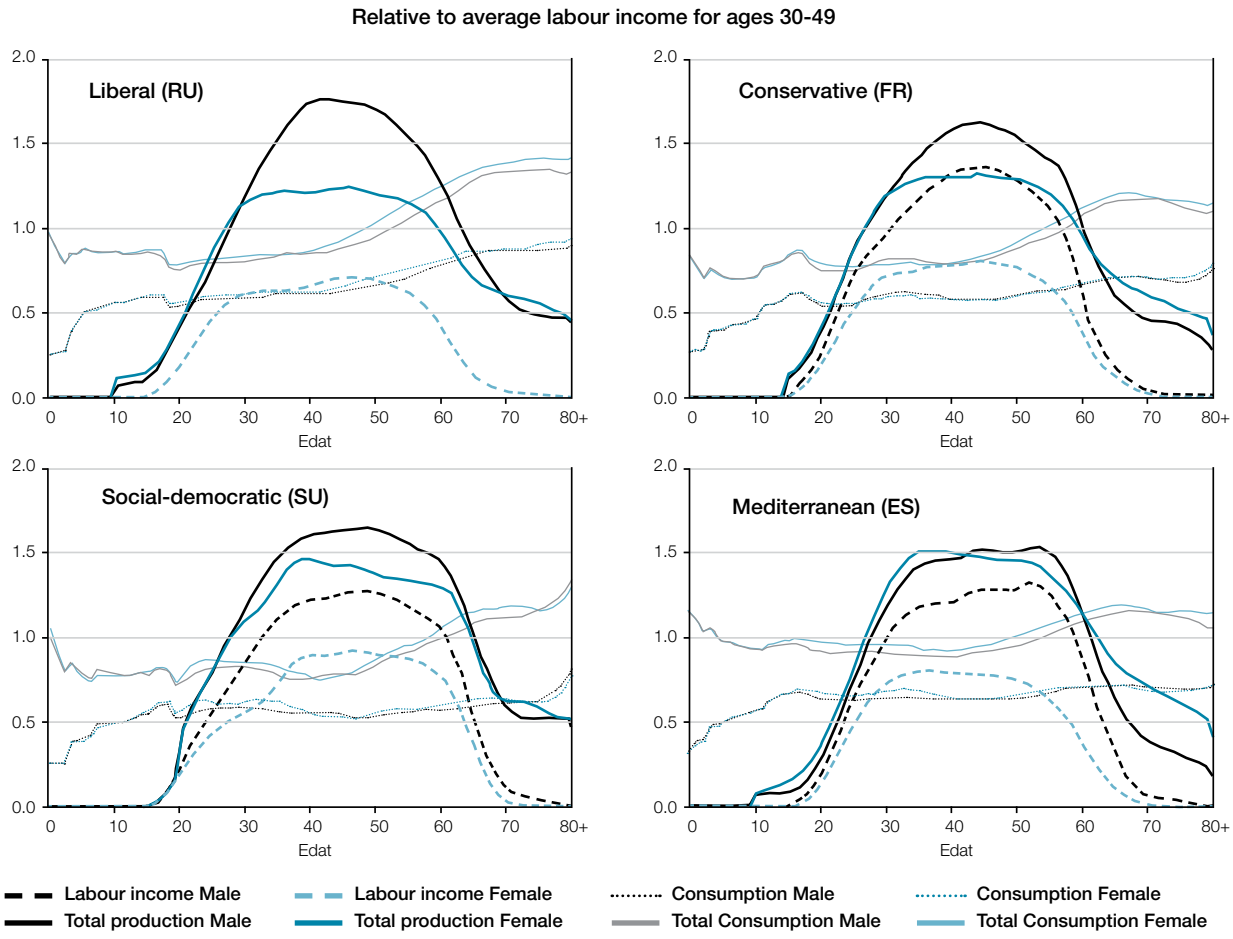
By looking at the gender differences in the magnitude of LCS, we measure the gender gap in economic independence. The smaller the gender gap in economic independence, the higher the state encouragement to promote women's independence and therefore the gender equality. Table 2 presents the results for this indicator. The gender gap is the smallest in Slovenia, where it accounts for only 17.6% of the total labour income. A relatively small gender gap in economic independence is also characteristic of Hungary. Comparably high gender equality is also evident in social democratic welfare states. In contrast, there is a significant gender difference in economic independence in Germany, Austria, the UK, and Italy, where the gender gap accounts for 54.7%, 51.6%, 51.51%, and 46.7% of the total labour income, respectively.

The second column in Table 2 presents the gender gap in total LCS relative to total labour income, i.e. values of our fifth indicator. After including unpaid household work, the ranking of countries stays similar, except for Italy and Spain. In both of these countries, higher labour income received in the labour market by men than by women is basically compensated with the higher production of women within the household. Moreover, in Slovenia the lower labour income of women is more than compensated for by the higher value of their unpaid household labour, which results in a negative value of the gender gap in the total LCS.

5. Discussion and conclusions

Based on the five indicators, we group countries into specific inter-age reallocation regimes. Similarly to the empirical research of Ferragina, et al. (2015), we could conclude that there exist only two groups of countries: one consisting of liberal and Mediterranean countries and the other consisting of social

Figure 2. Gender specific production, consumption, and total life cycle deficit in the UK, France, Sweden, and Spain in 2010



Sources: Istenič et al, 2016; Vargha et al., 2016; authors' own calculations.

democratic and conservative countries. However, we claim that the difference between social democratic countries (combined with post communist) and Continental countries is clear enough to distinguish between social democratic countries and conservative countries. Based on this, we conclude that three groups of countries can be distinguished based on patterns of gender and age-specific transfers. Groups of countries are distinguished based on their high, medium, or low values of derived indicators that measure the level of welfare state provision (Table 3). The higher the values of our first three indicators the higher the level of welfare state provision. In contrast, we claim that smaller gender gap in the (total) LCS means higher gender equality promotion, resulting in the higher level of the welfare state provision. Boundary values for low, medium, and high values of indicators are defined as the average value plus/minus one half of the standard deviation (following the approach of Saraceno & Keck, 2010).

Based on our results we thus distinguish between three groups of countries: social democratic (with a high level of indicators), Continental (with a medium level of indicators), and liberal (with a low level of indicators). We recognize Hungary, Slovenia, and Sweden as social democratic countries; Austria, Finland, France, Italy, and Spain as conservative countries; and the UK and Germany as liberal countries. The main exception is Germany, which, based on inter age reallocation patterns, cannot be characterised as a prototypical conservative welfare state, but rather as a liberal welfare state.

Table 2.LGender gap in (total) life cycle surplus relative to total labour income in 2010

Country	Gender gap in LCS relative to total labour income (in %)	Country	Gender gap in total LCS relative to total labour income (1n %)
SI	17,6	SI	-2,0
FI	24,2	ES	4,1
HU	29,1	IT	5,4
SE	29,8	FI	6,0
FR	39,0	SE	17,6
ES	39,5	FR	17,7
IT	46,7	UK	34,2
UK	51,5	DE	36,5
AT	51,6	AT	N.A.
DE	54,7	HU	N.A.

***Note:** n.a. = non applicable

Sources: Istenič et al, 2016; Vargha et al., 2016; authors' own calculations.

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Taula 2. Summary of results – the level of welfare state

Country	Deficit public funding of the young	Deficit public funding of the old	Total deficit public funding of the young	Gender gap in LCS	Gender gap in total LCS	Total
Austria	High	High	*n.a.	Low	*n.a.	Medium
Finland	Low	High	Medium	High	High	Medium
France	High	Low	High	Medium	Medium	Medium
Germany	Low	Low	Low	Low	Low	Low
Hungary	High	Medium	*n.a.	High	*n.a.	High
Italy	Low	Medium	Low	Low	High	Medium
Slovenia	Medium	High	Medium	High	High	High
Spain	Low	Medium	Low	Medium	High	Medium
Sweden	High	Medium	High	High	Medium	High
UK	Medium	Low	Medium	Low	Low	Low

***Note:** n.a. = non applicable

Sources: Istenič et al, 2016; Vargha et al., 2016; authors' own calculations.

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IMPACT OF POPULATION AGEING ON ECONOMY: THE FIRST AND THE SECOND DEMOGRAPHIC DIVIDEND IN GERMANY, SPAIN AND THE UK

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Resum

Population ageing is bringing challenges to the economic activity and to the sustainability of the public budget. In this paper we estimate its impact on the economy using the National Transfer Account (NTA) results. We apply per capita age patterns of consumption, production, transfers and flows originating from assets to estimate the so-called first and the second demographic dividend for Germany, Spain and the UK. In particular, using the actual age patterns of production and consumption we calculate the future estimated NTA Suport Ratio - effective number of producers relative to effective number of consumers- over the 2010 2050 period. As expected at the stage this countries are of their demographic transition, the development will be strongly negative in the future, showing that the positive first demographic dividend is over. Then we calculate the potential impact of the second demographic dividend coming through higher savings due to population aging and consequently capital deepening. In all three countries, the estimated positive effect of second demographic dividend is sizable and overcomes to some extent the negative effect of the first demographic dividend.

1. Introducció

European countries are ageing fast and this will be even more so in the future decades. This puts strain on the public system sustainability but also on production relative to consumption in general. The demographic transition is immanent to economic development over the course of time. Namely, along with their process of economic development, involving technological

progress and growing extension of markets, all countries experience changes in demographic variables that change the age structure of population. In particular, all countries have been experiencing at different time paths, a shift from high to low levels of fertility and mortality and hence an ageing process. Interrupting these long-term trends of fertility decline, a baby boom occurred after the Second World War (after the civil war in the case of Spain), followed by a baby bust. This created a kind of demographic cycle, created by an especially big generation (baby boomers) who live longer, thanks to the secular gains in life expectancy, while it is followed by a substantially lower generation. This causes, first, an increase in the ratio between effective number of producers and the effective number of consumers. This results in an increase in the investment resources and therefore economic growth. However, this positive impact of demography on economic growth, called first demographic dividend, eventually becomes negative. This happens because children born during the low-fertility period eventually enter a labour force, while numerous initial working-age population retires and becomes economically dependent again (Mason & Lee, 2007b).[1]

Even though population gets older over time, the population ageing can have a positive effect in form of a second demographic dividend. The positive effect of population ageing is possible because older individuals partially fund their consumption by the asset income. Due to their prolonged life expectancy, individuals live longer over time, and are thus forced to save more. The increased savings result in the capital deepening, which has a positive effect on the economic growth. The saving effect can be estimated using intrinsically forward-looking accumulation of wealth. The discounted future accumulation of wealth is estimated as a difference between the future age-specific aggregate income and age-specific aggregate consumption, where fixed growth rates of consumption and technology are assumed. Research on the first demographic dividend shows a positive effect of population ageing on the economic growth by combining the National Transfer Accounts (NTA) methodological framework with the concept of demographic dividend (Mason & Lee, 2007b). The effect of the second demographic dividend on the 9 EU countries has been analysed by Prskawetz and Sambt (2014). The authors concluded that a positive saving/wealth effect is evident for the UK, Germany, and Spain.

> *"All European countries have experienced, at various times, a variation in fertility levels and mortality from high to low and therefore an aging process"*

In this paper we will build on the findings of Prskawetz and Sambt (2014) whereby the analysis was built on the NTA results of the national teams using to some degree different data sources. Here we take advantage of the European FP7 AGENTA project (AGENTA Data Explorer, 2019; Istenič et al., 2016) in which we derived the totally comparable results of the National Transfer Accounts (NTA). We will analyse the impact of both first and the second demographic dividend in these three countries using the age patterns of production and consumption from AGENTA project and using the recent population projections.

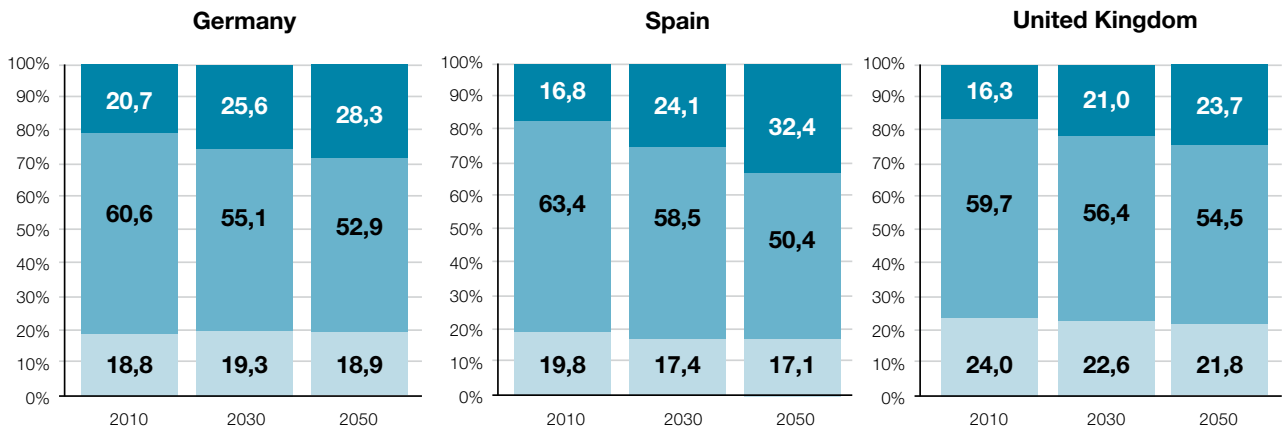
First, we show the changing age structure of the population as expected from the demographic projections. Next, we present the methodology used and we improve the demographic support ratio estimating the first demographic dividend combining NTA age profiles with population projections. Finally, we supplement the impact of changing demography on economics by calculating the second demographic dividend. The final chapter concludes.

2. Demographic trends

According to the latest population projections (Eurostat, 2020b) the EU 27 population in 2050 will be 441 million that is exactly the same as it was in 2010 (Eurostat, 2020a). However, in the same 2010 2050 period the share of people aged 65 and over is projected to increase from 17.6% to 29.5%. At the same time, the share of working age population (20-64 years of age) is projected to decline from 61.3% to 52.0%. Still, the intensity of the ageing can still vary considerably across countries. Figure 1 shows the population ageing for the three countries included in our analysis. Since the UK is not any more included in the latest EUROPOP2019 projections we use one year older version of the demographic projections instead (EUROPOP2018).

1 See also See Patxot et al. (2011) for previous estimates for Spain; and Mason et al., (2017) for the most recent estimates for countries at different stages of their demographic transition.

Figure 1: Share of population by broad age groups (in %)



Source: Eurostat, 2019.

The results show that the strongest population ageing is expected for Spain. In 2010 Spain had the highest share of working age population (63.4%) among all three countries (Germany 60.6% and the UK 59.7%), whereas the share of elderly was 16.8%, similar to the UK (16.3%) and considerably lower than in Germany (20.7%). However, from 2010 to 2050 the demographic situation is expected to turn from most favourable among these three countries to the least favourable. The share of working age population will fall to just around half of the total population, whereas the share of elderly will almost double to 32.4% of the total population. The cause for this differential development is that the baby boom was delayed in Spain, due to historical reasons, with respect to most countries, while it was more pronounced. This country experienced very low fertility in the last several decades and one of the highest longevity worldwide. Germany had very old population already in 2010 and in 2050 the population will not be as old as in Spain, so the relative change during that period will be much smaller.

> *From 2010 to 2050, the proportion of the working age population in Spain is expected to be reduced to only half of the total population, while the proportion of the elderly will almost double to 32.4% of the total population*

In the UK, on the other hand, the share of elderly is expected to increase only to 23.7%, which is far below the Germany, Spain and, also the EU average. Thus, the increase in the share of elderly is around 7.5 percentage points for Germany and the UK, but as high as 15.6% for Spain.

3. Methodology

Based on the presented demographic development the support ratio is often calculated. This indicator compares the number of working age population to the total population. Implicitly it is assumed that all individuals in age 20-64 are producers and that they are all equally productive. On the other hand, it is implicitly assumed that all people are consumers and that they all consume equal amounts. Under those assumptions, the change in support ratio would adequately reflect the impact of demography on economic development. However, it turns out that this is not the case. Therefore, we first improve the support ratio by adding data on economic activity by age and gender extracted from the National Transfer Accounts project (NTA). In the following, we explain how this data is estimated and the methodology employed to estimate the first and second demographic dividend.

3.1. National transfer accounts

The NTA break down the economic categories by age. The general approach is to use relative positions by age using micro data from surveys and adjust them to match the aggregate categories from the System of National Accounts (SNA). Within the NTA framework, those per capita averages by age are called 'age

profiles'. The central categories are labour income and consumption. The difference between labour income and consumption is called 'life cycle deficit' that is positive for children and elderly but negative in the working age in between. In order to match the SNA identity and the budget constraint for each individual, the life cycle deficit at young and old age needs to be financed either through 1) public or private transfers or 2) 'asset based reallocation' that is a difference between asset income and saving.

Age profiles of labour income are calculated with a general approach described above, whereas for private consumption additional procedure is necessary to allocate the consumption, that is reported on the household level, to the individual members of the households. For public transfers also administrative data are often used. Public transfer inflows that are received by individuals are for example public health, education, pensions etc. On the other hand, public transfer outflows are in form of taxes and contributions for which age profiles of labour income (direct taxes) and consumption (value added tax and excises) are used. Private transfers are in two forms: 1) 'interhousehold transfers' that flow between different households (by assumption between household heads) and 2) 'intrahousehold transfers' which are between the members of the same households. The intrahousehold transfers are estimated using a set of assumptions where household members with individual surpluses cover the individual deficits of other household member. Here the deficits are defined as individuals private consumption exceeding the cash income from labour income, public cash transfers and interhousehold transfers. If the sum of deficits in the household is greater than sum of surpluses, the household head finances the difference and generates positive flow of net asset based reallocations (for example takes a loan, sells the assets or uses the interest from investment to finance the remaining deficit of the household members). Here we provide just a short outline of the NTA methodology. For detailed explanation see United Nations (2013), Istenič et al. (2016) and Lee & Mason (2011).

3.2. First demographic dividend

The first demographic dividend is defined as the increase in the Support Ratio.. Conventionally, this has been defined with the number of producers and consumers using the fixed age limits. The production is conventionally defined with the number of individuals from 20 to 64 years of age regardless of how productive individuals are at different ages. On the other hand, the consumption is conventionally defined with the total number of people, regardless of how much they consume. With the NTA approach we can improve the calculation of the Support Ratio and hence first demographic dividend, by taking into account the actual labour income and consumption at different ages. By multiplying the NTA age profiles of consumption and production with the age distribution of the population we obtain the effective number of consumers and producers.

Technically, we define the effective number of consumers by N and the effective number of producers by L:

$$N(t) = \sum_{a=0}^{100} \alpha(a) P(a,t) \tag{1}$$

$$L(t) = \sum_{a=0}^{100} \gamma(a) P(a,t) \tag{2}$$

Where $P(\mathrm{a},\mathrm{t})$ represents the population of age a in year t; $\alpha(a)$ is an age specific, time invariant vector of coefficients measuring age variation in consumption; while $\gamma(a)$) is an age specific, time invariant vector of coefficients measuring age variation in productivity.

Following those notations, we can decompose output per effective consumer,*(Y/N)*, into the support ratio *(L/N)* and output per effective worker *(Y/L)*:

$$\frac{Y(t)}{N(t)} = \frac{L(t)}{N(t)} \cdot \frac{Y(t)}{L(t)} \tag{3}$$

The first term is the right hand side is the Support Ratio. By converting Equation (3) into growth terms, we derive:

$$\dot{y}(t) = \dot{L}(t) - \dot{N}(t) + \dot{y}^{l}(t) \tag{4}$$

Equation (4) says that the growth rate of output per effective consumer (y) equals the growth of the effective labor force (L) minus the rate of growth of the effective number of consumers (N) plus the growth rate in output per worker (yl). The excess of the growth rate of the effective labor force (L) over the growth rate of the effective number of consumers (N) is the growth rate of the Support Ratio. Changes in this ratio represent the first demographic dividend, while the last term measures changes in workers productivity affected by factors like education, capital deepening, etc.

We measure SR using NTA labour income and consumption profiles (Equation 1 and 2). The rationale behind the procedure

Table 1: The cumulative effect of the first and the second demographic dividend (DD)

Country	Age of adulthood	Tau_f	Tau	First DD (% growth)	Second DD (% growth)	Both DD combined (% growth)
Germany	27	0,654	0,459	–18,9	7,2	–13,0
Spain	27	0,647	0,573	–22,1	7,3	–16,4
UK	26	0,631	0,407	–11,8	13,7	0,3

Tau_f: The share of family transfers to kids. If cost of rearing kids is supported 40% by public and 60% by family, the value of TAU_f is 0.600.
Tau: How much of the old age consumption is supported by transfers, as opposed to assets. If transfers provide 40% and assets 60%, then the value in that year is equal to 0.400.

is that we take differences in productivity and consumption of different age groups into account. It not only matters if someone works but also how productive they are. It not only matters if, for example, someone is economically dependent but the amount of their consumption that needs to be financed by others. This approach is more comprehensive than the standard decomposition of GDP per capita into GDP per active person and activity rates, which only classifies people as active or non-active regardless of how much they produce and how much they consume.

3.3. Second demographic dividend

Estimating the second demographic dividend is far more complex than estimating the first demographic dividend, and hence it requires more assumptions. Partially this is because the accumulation of wealth is intrinsically forward-looking (Mason, 2005). We will only point out the basic idea and values of the parameters following Mason and Kinugasa (2008), who build on the neoclassical growth model of Cutler, Poterba, Sheiner, & Summers, 1990 (as cited in Mason & Kinugasa, 2008) and Solow, 1956 (as cited in Mason & Kinugasa, 2008). For a detailed technical description of the model, see the work of Mason & Lee (2007a) on which the following outline is also based.

The parameters that influence the results are the following. The steady-state year was set to 2100. The model requires the parameter denoting the share of family transfers flowing to the cohorts below the age at which the lifecycle deficit turns negative. This parameter is required to calculate 'child wealth', which is the present value of net costs of supporting children in the future. It is a negative value. On the other hand, 'pension wealth' is the wealth used to fund consumption at older ages. Therefore, a coefficient is required showing the share of old age consumption supported through (private and public) transfers, as opposed to assets. When calculating the present value, a discount rate of 3% was used, while for the annual interest rate the value of 6% is assumed. Annual technological growth is set at 1.5%. The stated values were chosen in line with the calculations for other countries made in the past.

4. Results

In our calculations we build on the NTA data from 2010 and we investigate changes in the period up until 2050 (actual data from 2010-2018 and EUROPOP2018 projections for 2019-2050) when the population ageing in Europe is expected to be the strongest. Table 1 summarizes the first and the second demographic dividend for the period 2010 2050 along with the country specific parameters derived from the NTA age profiles and used in the model.

Age of adulthood is defined as age at which individuals' labour income first exceeds their consumption, so they become economically independent. As explained earlier, this enters the calculation of the wealth that people have to accumulate to cover their own consumption and consumption of their children.

In the UK the elderly cover their consumption out of transfers only in 41% (Tau=0.407), whereas the rest is covered from (net) asset income. In Germany (Tau=0.459) and Spain (Tau=0.573) the transfers represent a higher share. Therefore the positive impact of the second dividend is expected to be smaller from this factor. It is assumed that the ratio of assets to transfer wealth (which is predominantly pension wealth) will not change

in the future. Since people will live longer, they will have to accumulate more wealth. Consequently, through capital deepening the productivity would increase. The share of private transfers to kids is similar across countries ranging between 63% and 65% (Tau_f). This means that almost two thirds of the children's life cycle deficit is financed by the familial transfer and the remaining one third from the public sources. These familial transfers increase the need for individuals to accumulate wealth for being able to finance life cycle deficit of their children.

The results show that the cumulative effect of the first demographic dividend on economic growth is projected to be negative in all three countries, ranging from 11.8% for the UK to -18.9% for Germany and even -22.1% for Spain. However, there is the good news of substantial positive second demographic dividend for all three countries. The cumulative effect of the second demographic dividend on economic growth in 2010-2050 period ranges from 7.2% in Germany and 7.3% in Spain to even 13.7% in the UK. Thus, under the described assumptions, in Germany and Spain the positive second demographic dividend would substantially mitigate the negative first demographic dividend whereas in the UK it would totally neutralize the impact of negative first demographic dividend. This results ignore the general equilibrium effects that mitigated the benefits of the second demographic dividend. As capital intensifies, the interest rate tends to go down in a close economy. This does not hold in the open economy case, in which the global interest rate applies, but this will also be affected by the ageing process as it becomes a global phenomenon. This issue certainly requires more investigation and our estimations should be taken as an optimistic upper bond.

5. Conclusions

In future decades Europe will face strong population ageing that will bring challenges to the sustainability of public budget but also on production relative to consumption in general. Instead of using dependency ratio with arbitrarily set age limits to analyse demographic pressure on economy, we apply totally cross country comparable NTA age patterns of production and consumption. We confirm that the first demographic dividend defined as the increase in the ratio between equivalent number of producers and consumers will indeed strongly deteriorate in the 2010 2050 period in Germany, Spain and the UK. However, given the current age patterns of production, consumption, transfers, and reallocations related to assets we find important potential benefits for future growth in all three countries. If elderly finance their consumption at older age intensively with asset-based reallocation (i.e. net asset income as a difference between asset income and savings), there is room for productivity growth coming through capital deepening. Namely, individuals would need to accumulate more assets to be able to finance their consumption at older age given the expected further longevity increase. In Germany and Spain this positive effect would importantly mitigate the negative impact of the first demographic dividend in 2010 2050 period. For the UK the positive second demographic dividend estimated would totally neutralize the impact of negative first demographic dividend. The interplay between demographic and economic evolution certainly requires more investigation and our estimations of the second demographic dividend should be taken as an optimistic upper bond.

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INHERITANCES AND INEQUALITY IN WEALTH

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Introduction

Wealth inequality has increased steadily over the past few decades. The reasons for this have been studied here from different perspectives: while some authors have attributed it to the loss of effectiveness of progressive taxation systems (Zucman, 2019), others have blamed the development of global financial markets, which have facilitated the accumulation of assets for those with more investment skills and opportunities (Piketty, 2014; Lusardi et al., 2017). In general, there is a clear consensus that these and other similar factors, all come together to play a part in the rising levels of inequality. However, there is still room for discrepancy: what role do inheritances play in the distribution of wealth?

There is a general impression that inheritances cause an increased inequality in wealth[1]. After all, the very nature of them suggests that they are accumulated throughout life, meaning that their intergenerational transmission would directly increase the wealth of the heirs. This would result in large inheritances gradually accumulating at the top end of the wealth distribution, thus becoming the main vehicle for transmitting inequalities between generations (Piketty, 2014; Zucman, 2019; Palomino et al., 2020). However, part of the empirical evidence (Karagiannaki, 2017; Elinder et al., 2018), has found the opposite result: inheritances actually reduce wealth dispersion. Since the former are more equitably distributed than the latter, once the transmission of wealth has occurred, the net result causes the total inequality in wealth to decrease.

Given this duality in outcomes, this article shall explore the role of intergenerational transmissions in wealth distribution using a different approach. In particular, we will focus on how inheritances affect individual opportunities to accumulate wealth. Accordingly, in the context of "inequality of opportunity", we explore what part of the inequality in total financial and non-financial wealth in Canada, Spain, the United States and Italy, is explained by inheritances. In order to do this, we have used the data provided by the Luxembourg Income Survey (LIS) and various machine learning techniques that enable us to obtain accurate, substantive results. Subsequently, in the case of Italy and the United States, we have also studied the role of parents' education on their descendants' opportunities, and how part of this is, in fact, channelled through the inheritances themselves.

Theoretical framework: inequality of opportunity and wealth

Any economic and social outcome is, in fact, the result of two major groups of factors (Roemer, 1993). On one hand, there are circumstances - in other words, all the exogenous aspects that are beyond the control of individuals, such as parental education, sex, ethnicity, or inheritances. On the other hand, there is personal achievement, which accounts for the variables that can be chosen or decided by individuals: the number of hours

1 In an aim to make this article easier to read, when we talk about inheritances we are also referring to intergenerational transmissions *inter vivos*, that is, gifts and donations.

> *Given the consistent increase in wealth inequality, it is highly relevant to study whether this is explained through own merit or achievement, or by factors related to intergenerational wealth transmission*

studied or worked, their profession, and so on. It is important to stress here that while it is true that these achievements may be partly affected by circumstances, we are referring here to those decided exclusively by the individual, and focus on pure individual effort[2].

From this distinction, any extent of inequality can be broken down into two terms. The first would be attributed to circumstances, and include the share of total inequality explained by factors beyond individual control, which would form an inequality of opportunity (IO). The second includes the share of inequality attributed to achievement, known as"inequality of achievement" (IA).

In general, from a social justice standpoint, IO is considered unfair, precisely because it is an economic and social result caused by exogenous factors that cannot be altered by the behaviour of individuals (Rawls, 1971). In addition, empirical evidence has recently been found to support the "cholesterol hypothesis," according to which economic growth is affected by two models of inequalities. On one hand, we have a detrimental inequality - IO, which would lead to inefficiencies in the use of human resources, because many potentially skilled individuals would be excluded from the labour market, as their own lack of opportunities caused by their circumstances would have a negative effect. On the other hand, we have another inequality that would foster growth - IA, as it would drive the appropriate incentives to generate new ideas or use resources more efficiently (Marrero and Rodríguez, 2013). In short, it could be said that, from both a moral and an economic standpoint, IO is the detrimental component of inequality and as such, should be correctly quantified and subsequently reduced.

2 There is still one other factor to be included here: luck. However, in this article it is considered that as an aggregate, it is neutral. So it has been considered not to have a significant effect on the final results.

This article examines the part of inequality in wealth attributed to two factors related to the intergenerational transmission of opportunities: inheritances, and when data allows, parental education. Both factors are exogenous by definition and will therefore be used as circumstances that help us calculate the corresponding IO factor. Given the consistent increase in wealth inequality noted above, it is of great relevance to study what part of this inequality is explained by merit or achievement itself, and what other part by factors related to its intergenerational transmission. So how can this component be evaluated? Firstly, we would need to define what "models" are.

Models are exhaustive and mutually exclusive partitions of the population, based on the circumstances that define it. Let us imagine a simple example, in which the economic result analysed was affected by only two circumstances: sex (male, female) and parental education (high, low). The population would be divided only according to these two attributes, forming four models: men whose parents have a low education, women whose parents have a high education, and so on. According to what has been explained above, inequalities between models, when attributed to circumstances, would form the IO, while inequalities within models -since all individuals would share the same circumstances- would be the IA.

For this article, it would seem that all we need to do it to divide the population of the countries analysed according to the available circumstances to then attribute the expected wealth to each individual depending on their corresponding model (the literature generally uses the average), and then calculate the inequality between models. However, there is an added problem. As we have seen, defining models based on categorical variables such as gender or educational level of parents is very simple, as the population division is practically clear cut. But when the circumstance is continuous, such as in the case of inheritances, how can we divide it? There are multiple options: should we divide by the median? the average? by tertiles? by quartiles? Any of these options could be valid from a reasoning standpoint, but each would imply different results. Because ultimately, we would be leaving it to the discretion of the researcher to decide what amount of inheritance should be considered high, low or medium. In view of this, it is clear that we need a statistical criterion to support the creation of the different models.

Very recently, the literature on IO has adapted various machine learning techniques for the selection of models (Brunori et al.,

> *The United States is clearly the most unequal country. Spain and Italy have very similar levels of inequality in both total wealth and non-financial wealth*

2019). From numerous statistical tests, these computer techniques extract all the relevant information from the data and will effectively divide any population according to formal and substantive criteria, avoiding potential biases introduced by the researcher. Specifically in this article we have used conditioned inference forests (Hothorn et al., 2019), which are the algorithms that offer substantive results with the greatest external validity. Using these, the population in each country is divided according to the distribution of inheritances, and models are generated characterised by their own statistical properties. Once this is done, by applying any inequality index on the expected wealth for the different models, we would be able to obtain an absolute measure of IO. Subsequently, dividing this measure of IO by the total inequality, we would have the fraction of the total inequality attributed to the circumstance in question.

The data from this study comes from the Luxembourg Income Survey (LIS), a non-profit organisation that harmonises the major disposable income and wealth surveys and keeps them updated. In this case, we have taken data from Canada (2016), Spain (2014), the United States (2016) and Italy (2014). In order to ensure the analysis is as broad as possible, we have studied how inheritances affect inequality in financial wealth (stocks, bonds, deposits, investment funds, etc.), non-financial wealth (real estate assets) and total wealth (sum of financial and non-financial wealth). Additionally, it is also explicitly controlled by the gender of the head of the household, the size of the household and the life cycle, to ensure that the results obtained are not affected by these variables.

Inequality in wealth: A few ideas to consider

Before finding out how inheritances affect individual opportunities to accumulate wealth, it is important to explain how this is distributed in the three definitions studied. The most common measure of inequality to explain dispersion is the Gini index, which is defined between 0 (perfect equality) and 1 (total inequality). So, in a simple and direct way, Table 1 allows us to compare between the countries studied and the different models of wealth.

The United States is clearly the most unequal country. Its high Gini indexes, which exceed 80 points for total and non-financial wealth, and 90 for financial wealth, reflect the large accumulation of all types of assets at the top end of the distribution, where the richest individuals are located. In addition, both European countries have very similar levels of inequality in total wealth and non-financial wealth, with a Gini index of around 60 points. Finally, Canada seems to fall somewhere in between.

The differences between the definitions of wealth are worth highlighting. First, inequality in financial wealth is far greater than in other types of wealth in the four countries studied. As explained by Lusardi et al. (2017), the accumulation of financial assets requires more technical knowledge, as these are generally subject to greater volatility, liquidity and risk. Of course, access to these assets is not available to large sections of the population who do not possess the necessary knowledge or tools to access financial markets, and this makes them more likely to be concentrated almost exclusively at the top end of the distribution. In fact, these same authors report that up to 40% of the wealth accumulated at the time of retirement can be accounted for through financial skill and knowledge.

Table 1. Wealth inequality (measured using the Gini index)

Wealth type	Canada	Spain	United States	Italy
Total	0.706	0.592	0.802	0.590
Financial	0.837	0.841	0.916	0.739
Non-financial	0.749	0.602	0.821	0.606

Source: author's own, using data from the Luxembourg Income Survey (LIS).

On the other hand, the levels of total and non-financial inequality are very similar in all countries. Non-financial wealth, mainly comprising property, is the main component of wealth in most households, so it is not surprising that both distributions are so similar. Precisely due their very nature, these types of assets are available to a larger portion of the population, which makes their distribution much more equitable than that of financial assets.

Inheritances and wealth inequality

Once we have established how the variables of interest are distributed, we can begin to explain how inheritances condition individual opportunities to accumulate wealth in each of the definitions studied. So, having applied the aforementioned machine learning techniques, Figure 1 illustrates what percentage of total inequality (calculated using the Gini index) is accounted for by inheritances.

In both Spain and the United States, over 65% of total inequality in any measure of wealth is explained by the IO attributed to inheritances received. In fact, for the case of non-financial wealth in Spain and financial wealth in the United States, the percentage accounted for in inheritances rises to even more than 75% of total inequality. As we mentioned before, the remainder to reach 100% would be explained by other circumstances that we do not control (place of birth or race, in the case of the United States) and inequality in achievement, the result of individual decisions and merit.

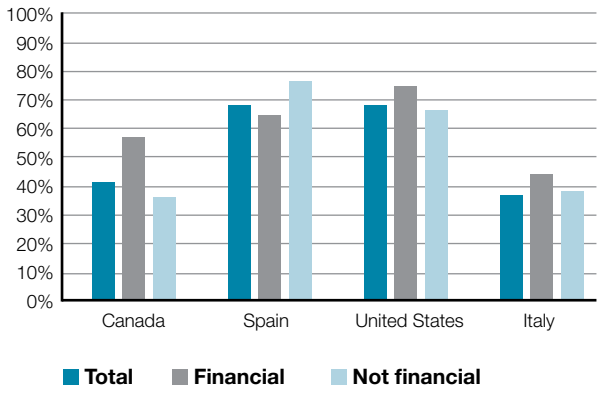
In the case of Canada and Italy, the importance of intergenerational transmissions of wealth is also noteworthy, though to less of an extent. In Canada, more than 55% of financial wealth would be accounted for by inheritances, while just under 40% of non-financial wealth comes from this source. In the case of Italy, inheritances account for about 40% of all three definitions of wealth studied.

Inequality in financial wealth is generally the most influenced by inheritances. Although our data prevent us from analysing this relationship in depth, the study by Jordá et al. (2019) gives us some clues. Due to their more volatile nature, financial assets tend to pose more risks than non-financial ones. Therefore, receiving an inheritance can act as a "safety net", which would give individuals more leeway to take more risks in their investments. Moreover, as we have already explained, financial assets accumulate at the top end of the distribution of wealth, and this is precisely where the greatest transmissions of assets between generations occur. The collusion of both types would explain our results, although the exception of Spain would certainly warrant a separate study.

> *"Family context and socio-economic situation are the main reasons behind inequality, and those who start from a less privileged situation are disadvantaged"*

Inheritances are the main vehicle for the intergenerational transmission of opportunities to accumulate financial, non-financial and total wealth, at least in the four countries studied. Parents with higher levels of wealth favour its accumulation at the top end of the distribution of later generations by passing it on to their descendants. However, it seems that the idea of accumulating wealth based on one's own merit and abilities lacks, in general terms, empirical rigour. These results show that the family context and socio-economic situation are the main reasons behind inequality, drastically favouring the opportunities of those born in the right environment, and of course, penalising those who start from a disadvantaged situation.

Figure 1. Inequality of opportunity in wealth (measured by the Gini index)



Source: author's own, using data from the Luxembourg Income Survey (LIS).

Parental education

It is highly probably that parents who leave a larger inheritance to their descendants will also have a higher level of education, because this is likely to have enabled them to access better, more higher paying jobs, which have resulted in an accumulation of greater savings. Parallel to this, more educated parents also foster the individual opportunities of their descendants, primarily through the acquisition of human capital and their social networks (Cabrera et al., 2020). Moreover, recently, Palomino et al. (2020) highlighted the relevance that inheritances and the family context have in defining the distribution of wealth. In particular, the authors note that the overlap between inheritances and parental education is noticeable in the United Kingdom, France, and Spain. Finally, they find that the isolated effect of intergenerational transfers on wealth is at least double the effect brought about by parents' education and work.

With this in mind, and in view of the results obtained, this section focuses on whether the IO calculated in the previous section can be attributed exclusively to inheritances, or whether on the contrary, it does in fact include the partially or totally overlapping effects of parents' education. Figure 2 therefore, sets out the IO in wealth attributed to both circumstances for Italy and the United States. Unfortunately, there is no data available in the LIS to make this same analysis for Canada and Spain.

The IO levels in the United States are virtually identical to those found in Figure 1, so it can be concluded that the effect of parental education is a fundamental part of the distribution of inheritances. This variable does not give us any extra information to explain the different opportunities that individuals have had in which to accumulate wealth. In fact, an in-depth exploration of how the algorithm has processed the information in the data confirms that, for this country, the truly relevant intergenerational effect comes from inheritances.

In Italy, on the other hand, the use of both variables raises the calculated IO levels. Now, more than 50% of inequality in non-financial and total wealth is explained by both factors, which exceeds 60% in the case of financial wealth. In this country, the parents' education affects their descendants' accumulation of wealth through a clearly differentiated channel of inheritances, likely through aspects related to the acquisition of human capital. However, this does not mean that there are not other potentially overlapping effects in the distribution of inheritances.

As we see in the case of Italy, other circumstances may increase the share of inequality explained by exogenous factors. Other factors such as ethnicity or place of birth, cannot be studied with our data, although, if included in the study, they could potentially raise the estimated IO ratios.

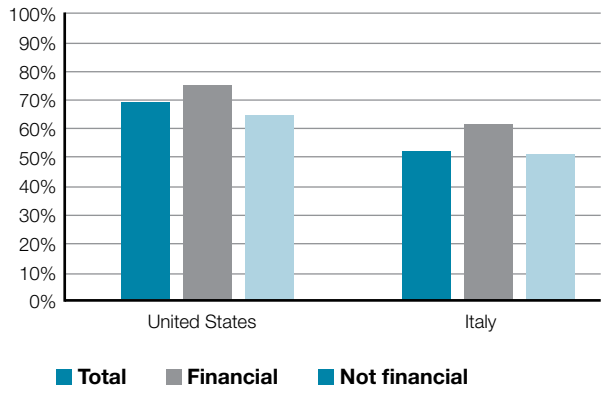
Conclusions

In this article we have used innovative machine learning techniques to measure the share of total inequality in various definitions of wealth that can be attributed to inheritances. The results indicate that the size of this effect is significant, ranging from about 40% in Italy to more than 65% in Spain and the United States. As a result, we have confirmed that inheritances strongly condition individual opportunities to accumulate wealth.

Subsequently, for the United States and Italy, we studied the effect of parental education. For the first country, we found no additional effect, so we conclude that both parental education and inheritances coincide to have an effect on individual opportunities. In contrast, in Italy, up to 60% of inequality in financial wealth can be explained by the interplay of both factors. So in this country, parental education affects the descendants' opportunities through a different channel than inheritances themselves.

Given this information, we conclude that in order to build a fairer society it is necessary, though not sufficient, to provide equal

Figure 2. Inequality of opportunity in wealth (measured by the Gini index)



Source: author's own, using data from the Luxembourg Income Survey (LIS).

opportunities for individuals to obtain any economic result. Since the accumulation of wealth is, for the majority the population, the result of saving wages, the first step to successful access to the labour market would be guaranteeing opportunities for full and quality state schooling. However, we know that at the highest end of wealth distribution, given that this is where it accumulates in increasing levels of inequality, inheritances do play a very important role. Therefore, in order to reduce the inequality caused by intergenerational wealth transmissions, the rigorous design of a fair and efficient inheritance tax should be addressed, to compensate, through a redistributive effect, part of the disadvantages associated with being born in less favoured contexts. ■

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A SOCIAL BALANCE OF THE INTERGENERATIONAL WELFARE

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This article provides a reflection on the elements that make up an intergenerational balance in terms of assets and liabilities. Here I identify common causes and different channels of influence, with a view to consolidating an equilibrium so that the results provide greater stability in a more consistent way, in line with the social preferences expressed in them. The dynamics behind some of these assets causes a certain degree of imbalance, so my intention in this article is to focus on the state and the family institution and their role in steering us towards equilibrium.

The generational balance

The intergenerational balance is naturally made up of a set of assets and liabilities. Some of these are public; others, purely private. Some assets are directly productive (tangible assets), while others are external (institutional or business environment). Some affect the social structure (the basic values on which the assets are based, and therefore, the social capital), while others are combined (responsibilities assumed at all times by members of the community, and therefore within families). They are all interrelated in their causes, but given that their origins are different, the instruments of possible intervention to improve each of them (in each of their respective areas) are also different. Regarding the liabilities, I will simply point out a few, but not all of them: The legacy of one generation over the other in terms of environmental footprint (coal, ozone, climate), waste storage and recycling, the irreparable loss of biodiversity... And, in economic terms, the obsolescence of human capital, the unemployment of young people, the burden of debt and the deficit of pensions in a distribution system.

In the interrelation between assets and liabilities, we can find common ground in a certain level of accumulated social capital, a certain level of corporate social responsibility (consciousness, at least), the training and education of the population, our capacity to generate energy, our long-term physical infrastructure, the consolidated flow of allowances for children and premature states of life, the relief of the burden of the elderly, a level of taxation against the unequal accumulation of wealth, protective family structures, restrictions on testamentary rights (legitimate and similar) and a basic universal network of social protection when faced with catastrophic contingencies.

This balance is the result of the evolution of civilization and culture. As Ron Lee recalls in his work (see the interview in this monograph), each of these aspects has its own story. Starting from the beginning, when parents selfishly invested the fruits of their productivity in their children (contributing to the harvests for tomorrow, when it was no longer possible to work), later progressing to the emergence of capital to better prepare themselves for the future —than with perishable products— with private *quid pro quo* contracts with whoever would provide a fairer exchange, right up until times of shared individual agreements by the State. So, for example, what in the past could mean firstly, an agreement to finance education, and then to become independent, in exchange for the return of the equivalent of a life pension

(intrafamily, with the care of parents to children and vice versa), or a transfer of assets in exchange for a sunk investment, or the transfer of the contractor to a third party, today translates into a kind of social contract in which it is now the state who pays for many of those services (for young and old), and recovers the cost by forcing the employed assets to pay taxes, either as a result of their productivity (income) or their transmission (taxing inheritances). Along with contributions in exchange for pensions. Therefore, what once used to be private agreements have become "socialised", what may now occur is an intergenerational balance, with consequences that are not always socially desirable. External factors can cause the dynamics of assets and liabilities to tip in one direction or another and break the balances that used to exist. This is what different criteria, such as the so-called "Musgrave rule" (Table 1), seeks to avoid with a fixed welfare ratio for the net social benefits from liabilities and net earnings from assets over time. This means that in the social security distribution system, the "imbalance" would be caused by, among other things, the fact that the burden of over-contributing pensioners varies with the relative demographic weight (rising life expectancy and declining birth rate) and the evolution of the productivity of the economy. Without the aforementioned adjustment, maintaining a defined pension throughout the life cycle, together with the political pressure resulting from the political management of the misalignment, is likely to lead to a growth in debt that would increase liabilities for the new generations.

Table 1. Musgrave's rule (assets-liabilities: workers/pensioners)

Establish a default ratio of relative positions as a benchmark, so that the relationship between contributions (tax) and benefits (pensions) keeps the coefficient of income (net) per capita of the active population consistent with the per capita benefits (net) for pensioners.

Once the ratio is set, taxes would be adjusted periodically to accommodate demographic and productivity changes. If the population ages, taxation would increase but pensions would fall, so that everyone would "lose" in the same proportion. Productivity improvements would go in the opposite direction.

In the transaction flows on both sides of the balance —the instruments that interrelate them— we find monetary and in kind taxes/transfers, which are the result of public (external) action, and donations and legacies *mortis causa* on the internal side (families). I will focus here on these second of these flows, considering the family as a prototypical institution of heterogeneous age composition, despite the fact that it is not always the best way of building social capital or reducing social inequality.

The role of the family as an institution for generational welfare

In order to assess both the transfers made between the members of the family, and the inheritances that increase at the time of death, there are three aspects of interest to the family institution: (i) as an internal protection network against the contingencies of its members (*cross pooling*), either with in kind or monetary benefits (allowances, guarantees); (ii) as a proponent of dynastic accumulation, with effects on inequality and/or social polarisation, and (iii) as an institution that is sensitive to evolving and therefore changing external conditions, such as the labour market, including women entering (increasing the opportunity cost of staying at home) or the difficulty of young people entering; all the while subject to certain needs being transferred to public responsibility, becoming supplied or supervised by the State, which would otherwise be an individual solution considered inequitable (as in the case of the care of dependents or pensions for retirement). This analysis can be done (and completed if desired) from different angles: altruistic, bilateral (implicit contractual, at the agreement of the parties) or accidental (inheritances as a result of not adequately programming the life cycle of resources and needs). (See Figure 1).

Giving during a lifetime, or leaving an inheritance has different consequences in many ways, in terms of when the beneficiary obtains the greatest benefit from it: whether the transfer given is time (while alive) or monetary (wealth accumulated by the parents), depending on how society approves (or not) the different forms of reaping its advantages (worse in one-time inheritances

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than in one-off monetary transfers, or in kind, in continuity), and depending on the variables, whether everything else remains the same, whether it is given in one modality or another, the age of the recipient, family membership, marital status, employment status, number of children or gender of the beneficiaries (depending on the prevailing sexist culture). At this point it would be interesting to compare to what extent the intrafamily transfer is similar to what the State can do with public resources. For example, with regards to the recipient who benefits most, depending on the responsibility taken on and therefore merit, whether to all equally, with similar frustration between what is claimed and what is possible at any given time, or in favour of whoever can benefit most from it, and thus return the profits to the family treasury or public income through taxation.

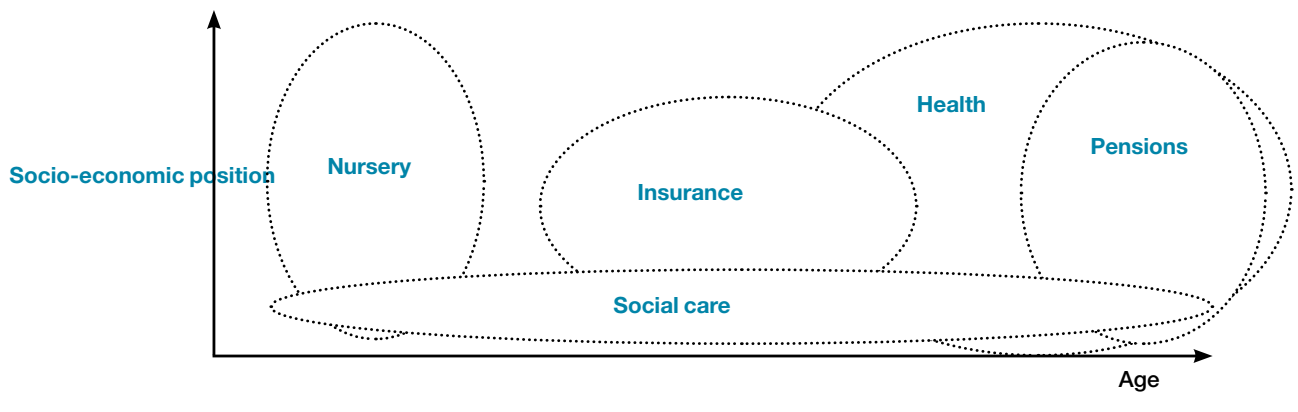
In a recent text, Nolan et al. (2020) analyse the role of transfers in the redistribution of intergenerational wealth from the Euro-zone Household Finances and Consumption Survey for some European countries -including Spain- and compare it, for the period 2010-2014, with other western countries. Their importance is significant in terms of the number of recipients (one third of all households), which is higher in the European countries analysed than in the United States (35 vs.19%), while among the former, there is a greater emphasis on inheritances with respect to donations. In Spain, donations have minimal significance. The recipients of these transfers are mainly adults over the age of 65, especially in France and Italy, and 1% of the highest income individuals account for the highest proportion (even more so in Spain and the United States). This is even higher if the grading is done by wealth, since the upper decile dynastically reaches a very significant proportion (Spain, again, is at the same level as the United States). The impact on the accumulation of family wealth from these transactions is, however, lower in Spain than the other countries compared; probably due to the type of asset transferred (real, own housing), and given that this type of property is spread among many levels of income, it has a less unequal effect on accumulated wealth.

Finally, if rather than focusing on the family, we focus on the states themselves, we would need to go into the debate on the reasons why it intervenes, and what principles of social justice inspire them over private ones (the aforementioned altruism, strategic or accidental principles).

Public intervention and equity from a generational perspective

It is all too common to interpret social justice from the perspective of the public funder, and exclusively from the standpoint of the particular beneficiary of the policy. Justice is a concept that admits few adjectives, as the principles on which it is based must be universal and not specific to any sphere of human relations in particular. And particularly not to collective decisions, which must be understood as something that responds to a common good, which belongs to everyone and no one in particular. It is there necessary to analyse public intervention in terms of its effects on the generational balance from an equitable standpoint —this is more polyhedral— which may refer to the

Graph 1. Compensations throughout an individual life cycle



Individual interest in redistributive policies on two dimensions

specific case of each individual, group or cohort, considered in terms of a certain relevant aspect (age, not having a job, gender, lack of education, no health, etc.).

Other than accepting the specific unit of analysis however, it is important to obtain a bird's-eye vision of the life-cycle of the beneficiary of the public policy (the individual or the cohort), while assessing not only the benefits they receive, but also their contributions: deferred welfare when paid in taxes or contributions that are amortised to a greater or lesser extent throughout the lifetime of an individual, and which generate a positive or negative tax residue. This is the part we will want to assess finally in terms of its correlation with the socioeconomic environment, which refers to the social mobility context; whether more or less innate abilities, lotteries of life, while considering personal achievement always in a differential context. (See Graph 2).

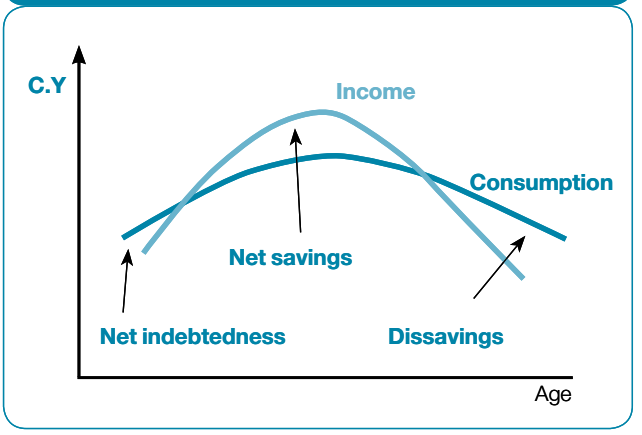
The perspective of *fairness* is different from that of equality — which is adjusted depending on necessity— and is even different from the equity in access, consumption, or outcome. Fairness implies showing concern, for example, with palliative healing -even if it is an irreparable situation- giving treatment despite its lower cost-effectiveness, in the absence of therapeutic alternatives, or making limited compensation - *no one left behind*. Conversely, the correct assessment of the equity of public action in generational welfare requires much more than showing concern. In terms of the results to be achieved, it is important to obtain a dynamic perspective of generations that "overlap", and not just a conventional static snap shot, more typical to the intragenerational sphere. This approach gives a better perspective of social welfare, of a *photo finish*, at each moment in time. It obliges us to consider not only public responsibility in the quest for stability but also individual effort and responsibility "à la Roemer", without compensating for the endogenous, own, and exogenous, social and economic behavioural elements. The assessment should therefore seek welfare balances prior to public intervention, marking the individual responsibilities of the non-achievements and of the desired equilibria, *ex ante*, to compare them with the final ones.

The havoc caused by the generational break

Among such unwanted intergenerational actions (imbalances), we find those related to climate change and environmental sustainability, deficits between resources and expenditures, public debt, and the deterioration, where it exists, in the level of physical capital (infrastructure), human capital (training), public capital (institutional), technological capital (economic progress) and social capital (or community). These deficits include the loss of biodiversity, cultural and environmental heritage. While in the individual sphere, we could consider people's independence and the ability to form a home and a family if so desired, or to find a decent job in the labour market. The following would be a few of the control variables taken to detect the degrees of public and private responsibilities in the quest to restore the aforementioned equilibria: the balance in consumption and individual savings, the price of coal in the economy, domestic and industrial gross energy consumption, existing indicators of confidence and safety in the community, and the weight of the global transfer of wealth to the future. In addition, a lower prevalence of disease thanks to better lifestyles, the evolution of public and private capital stocks in the economy, accrued pension rights (the higher or lower internal rate of return on public benefits according to the observed differential with respect to alternative uses), generational improvements in education (public and private investments) and in childcare, according to data on use of time, for example, between school and family. Finally, it is also important to consider transfers in informal, family or community volunteer care, and in care for children, the elderly and the destitute - with varying degrees of altruism.

These are more debatable, due to the difficulty of finding the generational footprint, the study of health expenditure, given the proximity to death rather than age being the element causing bias in the imbalances in the use of resources. Or how to interpret the taxation of property with respect to the rent, and the asset with respect to revenue in general. Also with regard to the more or less systematic, generational effects of the randomness

Graph 2. Balancing consumption (C) and income (Y) throughout the life cycle: an illustration



of a crisis or an epidemic. The value of a transfer is also interpreted differently when it is something that, if it is not transmitted, it is lost (time), with respect to the more or less liquid capital available at any given time.

Because behind each of these situations we find different degrees of altruism, risk aversion or caution given their uncertainty. Their effects range from the maintenance or reinforcement of patriarchal values given the lack of possibility for young people to become independent; the deterioration or erosion of human capital by lewd, negative, discouraging conduct, the disillusion for a future that is anticipated to be completely alien to the effort of the individual, and the lack of social commitment in various spheres of social relations, such as the neighbourhood or at work (both loyalty of the employer to the employee and vice versa).

Some of these problems arise within, or result from new family structures, many of them single-parent, or from broken families with children who see their role models dispersed. Or also from childless adult homes, worried about the inability to take on future care or face unwanted loneliness.

We already know their implications: irritated young people (with nothing to lose) or those who "can't be bothered" (without aspiring to gain anything), and we identify both as belonging to the best prepared generation in history, yet the path to social mobility is unnavigable. Generations of still active adults struggling to reach the end of the month and cover mortgages that at best, will provide legacies to their descendants, which when received, will increase those of decapitalised individuals, while their ancestors will have sacrificed their descendants' human capital for the sake of passing on a chunk of property (see Figure 3). There are also elderly people who live alone, labelled in line with their interests as "pensioners" including those who are beneficiaries of non-contributory pensions or low pensions -due to having opted for minimum contributions in their active stage- as well as other contributors who see their pensions shrink faster than their maximum contribution bases did.

Return rates in human K

To sum up and conclude, it is worth analysing for each of these situations, how public aces, discourages, or *crowds out* private individual effort, and above all, takes away the sense of responsibility from the individual. Furthermore, it should always be borne in mind that achieving the desired intergenerational *fairness* is not only in the hands of public decision.

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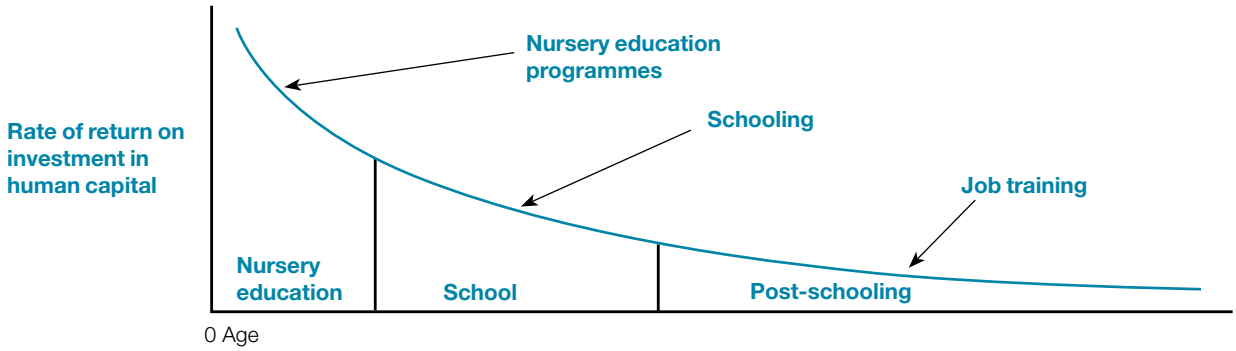
Graph 3. Return rates in human K



Rate of return on investment in human capital initially establishing the investment, at all ages

Source: Cameiro and Heckman (2003)

ENTREVISTA

RONALD LEE

"THE ECONOMIC CONSEQUENCES OF POPULATION AGING ARE QUITE DIFFERENT ACROSS COUNTRIES AND REGIONS"

Your work on population aging and the generational economy spans several decades and includes dozens of research contributions. In what ways have the key issues you have studied changed over the years? What do you think has contributed to the changes (if there have been many)? For topics that have remained resilient in their importance – why have these questions remained important over the years? Early in the study of population aging in the 1980s and 1990s, I and others tended to use the rich mathematical framework of stable population theory to do comparative steady state analysis for population aging and for its economic impacts. There were two consequences of using this approach. First, it focused attention on the effects of different levels of fertility because this was analytically tractable with less attention to mortality decline because this has ambiguous effects, making populations younger in high mortality settings and making them older in low mortality settings. Second, the focus on long term steady state results diverted attention from very important transitional changes in population age distributions. Later economists and demographers came to realize that the real story was these transitional changes, and the possibility of capturing persistent long term positive effects during the so-called "demographic dividend" phase through investment in physical and human capital. Analytic and empirical work shifted to this more dynamic and comprehensive approach, and away from simple initial and terminal dependency measures.

There was also increased interest in health and mortality at older ages. Most economists and demographers studying aging took advantage of the new Health and Retirement Survey (HRS) in the US, and subsequently similar SHARE surveys in Europe to study many aspects of health, labor supply, retirement, intergenerational transfers, saving, pensions and related behaviors

at the individual level, and that is still the case. But I went in a different direction, focusing on the macro level, as I will discuss further below.

I should add, as an aside, that I have also been very interested in the biology of aging and how evolutionary natural selection could have led to the long life of humans after they finish reproduction. In my view this is because after finishing producing babies in their 40s, humans continue to contribute to the survival, development and reproductive success of their children and grandchildren by making intergenerational transfers to them over these descendants' many years of nutritional dependence, up till reaching age 18 or 20. Anthropological studies find that older adults and elderly in hunter-gatherer populations continue to support the younger generations through intergenerational transfers. After completing childbearing, they continue to contribute to the reproductive fitness of their descendants and therefore natural selection still acts promoting their survival. I have published many articles developing mathematical theories about this and related topics, mostly published in biology journals, and I have collaborated with anthropologists in empirical work on hunter-gatherer groups. Because of the central role of intergenerational transfers in this work, it is closely related to the next topic I will discuss – the National Transfer Accounts project, or NTA.

Over the years and together with your original collaborators you have created and grown a large international network of researchers who study generational economics under the umbrella of the National Transfer Accounts (NTA) project. In what ways has the research program benefited from these international perspectives? What do you see as the greatest accomplishments of the NTA? With Andy Mason, I started the NTA project, which grew out of theoretical and empirical work I initially did in the 1990s on intergenerational transfers occurring in stable populations and then in actual real world populations including hunter-gatherer group and subsistence agriculturalists. The NTA project expanded our early work on the US and Taiwan to other countries – first to five other countries in Asia, Latin America and Europe, and then it grew gradually to its current size with research teams in over 70 countries and accounts estimated for over 90 countries around the world including many in Sub-Saharan Africa.

"Anthropological studies find that older adults and elderly in hunter-gatherer populations continue to support the younger generations through intergenerational transfers"

For me, the greatest accomplishment of NTA is to reveal the great variation across countries and regions of the world in the way the economic life cycle is structured (labor supply and consumption by age, as well as saving, asset holding and other economic behaviors), and the way different institutions, most broadly the family, the market and the state, undergird these economic life cycles. Some patterns are universal among NTA countries, such as net consumption in childhood and old age, and net production at ages in between, but the age boundaries vary widely. More specifically, it is fascinating to see variations in the importance of public pensions for the elderly versus familial support for them versus their self-support through asset income, and to see the variations in public versus familial investment in the human capital of children. Because of these differences it is also true that the economic consequences of population aging are quite different across countries and regions.

Another important accomplishment has been the ability to view the economic consequences of population aging not only in a global international comparative context, but also to see them historically as just part of the entire sequence of population age distribution changes over the past decades going back into the 19th century. Population aging is part and parcel of the demographic transition as is the demographic dividend, and we can analyze all the consequences in a unified theoretical and empirical context. While NTA is fundamentally an accounting system, it is designed to have a close interface with economic models and behavioral assumptions, so it is also possible to use it for other kinds of analyses and projections of fiscal sustainability for the public sector and for the family transfer system, for asset accumulation and for economic growth.

A key question in generational economics that you have studied is how the different age groups of a society interact and support each other. Working age members care for the dependents, children, and elderly, supporting them via public and private resource transfers. In a context of rapid population aging, some researchers and political commentators argue that tensions on the sustainability

> *Almost everywhere the net direction of intergenerational transfers is from older people to younger people*

of public transfer systems, such as pensions, have led to a conflict between generations. A growing elderly population (the so called "silver tide") could be voting to keep pensions high at the expense of education and other government programs that favor younger ages. According to your research, is there any evidence of such forces at play? Is there truly a "silver tide" influencing politics?
Well, NTA does not include voting behavior so I can't address that question directly. However, in cross-national NTA data consumption per child is positively associated with consumption by the elderly, both measured relative to working age consumption. Also, in older countries, both child consumption and old age consumption are higher relative to working age consumption, compared to younger countries. These associations conflict with the silver tide story which would predict a negative association. This proves nothing, but taking the association at face value it at least seems that the elderly are not crowding out expenditures on children. In some countries, though, the opposite may be occurring, with rising familial transfers per child crowding out transfers to the elderly and resulting in old age poverty, as may be occurring S. Korea.

Almost everywhere the net direction of intergenerational transfers is from older people to younger people. If we look at private familial transfers separately, they are just as strongly from old to young in aging populations as in younger populations. But if we look at public transfers (mainly pensions, health care, long term care, and education), they are from old to young in young countries (education and health care) but are strongly from young to old in older countries (pensions and health care), which is consistent with the "silver tide" story. Because the old countries are also the rich countries, with more mature and larger public sectors, it is not at all clear what is causing what here.

In any case, it is quite clear that pensions reforms are a major topic of political debate. Some argue that the inherently short political cycle might lead to poor policy choices, since politicians might seek short term political gains at the expense of sounder long-term planning. As a response to this concern, many countries are adopting what is known as automatic balance mechanisms (ABM) (Spain has also taken steps in that direction). Those are rules that tie pension payments and contributions to the financial health of the system; automatically lowering pensions and, in some cases, raising contributions when the pension system is not sustainable. What are, in your opinion, the key issues in designing a sound ABM?
I am enthusiastic about automatic balancing mechanisms. The systems I am most familiar with are the Swedish Notional Defined Contribution system and the reformed German system. Both remain essentially Pay As You Go systems without substantial assets. The Swedes set the rate of return on the notional asset accounts equal to the rate of growth of the wage rate, whereas the correct (but politically more difficult) rate would have been the growth rate of total wages which reflects both productivity growth and the growth rate of the labor force.

Consequently they had to introduce another mechanism, the "Brake", to achieve automatic fiscal sustainability. The German system explicitly introduced the dependency ratio as one factor governing taxes and benefits. In both Sweden and Germany the costs of adjusting their public pension systems to achieve sustainability in the face of population aging are shared between workers (through higher taxes) and retirees (through lower benefits). Good for them. In my own country, the US, we seem inclined to put all the cost of adjustment on the workers, or else we just neglect making any adjustments until the pressures reach crisis stage. I think we need an ABM system here.

What are the key issues in designing a sound ABM? First, it must address not only productivity growth rates and rising life expectancy but also the effects of other demographic changes through fertility and migration. Indexing benefit levels inversely to remaining life expectancy is not nearly enough. Second, it must take into account socioeconomic disparities in longevity so that the shorter-lived lower income groups do not end up subsidizing the higher income pensioners who collect greater benefits over their longer lives. This is true for all pension systems, not just ABMs. Third, it must provide an actuarially fair return to working longer and retiring later. Fourth, it must make adequate provision for those unable to work to older ages. Fifth, it must ensure gender equity – after first deciding what that should mean.

On the topic of the broader economic consequences of population aging, could the current trends towards greater automation (the substitution of workers by robots in productive processes) be a response to the projected smaller work forces?

Yes, this is in fact the sort of change that we assume will occur when we say that increased capital per worker will raise productivity. In the area of elder care, robots and remote sensing devices are increasingly used to substitute for human care takers, and that is important as well as robots in manufacturing and other service sectors.

To conclude, we would like to ask you about your view on the future of generational economics. What are the current key issues?

Will the elderly substantially increase their labor supply at old ages? Retirement age dropped by a dozen years during the 20th century, and it has risen by only one or two years since 1995. Will it rise substantantially in the future, or are we now locked into a system in which the elderly have an increasingly long and costly retirement stage while younger people struggle to raise their children, advance their careers, save, and pay rising taxes to support the elderly? I think this is the most fundamental question in generational economics. However, it is linked to the question whether as life expectancy continues to rise, will the health of the elderly continue to improve and their disability rates decline so that they are able to work significantly longer? Or will the distressing trends we see in the US and elsewhere of rising disability in working age adults due to obesity and diabetes translate into increased disability and worsening health when they enter old age?

It is natural to worry that the current behavior and circumstances of the elderly – retiring late, consuming increasingly costly health care, and living quite well relative to those in working ages – will burden future generations with rising national debt, both explicit and implicit. But it is also true that the elderly almost everywhere continue to save on average, even if they are living in part on asset income. The generosity of public pension systems enables the elderly to save even more while still consuming at relatively high levels. So I wonder to what extent public pension benefits will be converted into assets of the elderly, and then bequeathed to the next generation who, to be sure, will not inherit until they are in their 50s. Will bequests play a bigger role in coming decades due in part to public pensions and in part to low fertility (which means that bequeathable wealth will be shared among fewer siblings)? Or alternatively will the rise of non-bequeathable annuitized public pensions mean that there is less to inherit because the pension streams die with the recipient? This is an important topic for further exploration using NTA data.

> *The elderly almost everywhere continue to save on average, even if they are living in part on asset income*

There is increasing attention to inequality in income and wealth, and also to inequality in life span and health. While much work has already been done on these topics, much remains to be done. Work based on tax data has been very influential, but it has not really incorporated the important role of public pension and health care “wealth” (present value of expected future public transfers minus expected future taxes) which is the most important form of wealth of the lower income population. NTA has mostly worked at the level of national averages by age, but perhaps future work will be able to exploit micro-level estimates. Such work is underway now.

Secular stagnation is another puzzle. Will it be a real problem, or is it just a trendy topic that we will leave behind when solid economic growth resumes? Secular stagnation is thought to be primarily due to adverse trends in technology, whereby the economy-wide dynamism of past revolutions such as the steam train, or electricity, has not been duplicated by the IT revolution, leading to declining productivity growth. However, declining population growth and population aging are also thought to play a role. Population aging leads to capital intensification (the rising capital/labor ratio I mentioned earlier) which causes falling rates of return to capital and falling real interest rates. Real interest rates have indeed fallen globally in recent decades are now approaching zero. This greatly reduces the range of options for central banks as we have already seen in the great recession that started in 2007/2008. We might think that producers would eagerly respond by borrowing at these low rates, but they also look to the future and see that low population growth rates will mean low growth of demand for their products, so they hang back. The result is that economies get mired in a low employment, low interest rate, low investment equilibrium: secular stagnation. ■


“The economy-wide dynamism of past revolutions such as the steam train, or electricity, has not been duplicated by the IT revolution, leading to declining productivity growth”

INTERVIEW

GØSTA ESPING-ANDERSEN

"THERE IS EVIDENCE THAT THE COUNTRIES MOST ADVANCED TOWARDS GENDER EGALITARIANISM (THE SCANDINAVIAN IN PARTICULAR) DO INDEED SHOW A (SO FAR SMALL) DECLINE IN DIVORCE RATES, MORE STABLE PARTNERSHIPS AND, TO AN EXTENT, RISING FERTILITY RATES"

Research on fertility trends show a clear decrease associated with a delay in emancipation and in partnership formation and stability. In your paper *Re-theorizing Family Demographics* (joint work with Francesco C. Billari) you point out a reversal in this trend and also in traditionally observed social gradient of fertility. Could you explain us in which countries is observed this new trend and its main traits? ¿could you explain reason for this reversal according to your quoted work and others?

My research over the past decade has to a large extent been motivated by my skepticism of the leading thesis in demographic research – namely Lesthaeghe's argument that the rise of 'post-materlialistic' values fosters more individualism and less commitment to conventional family ideals, including declining fertility.

Not only in my article with Billari, but also in my cumulative research I have tried to demonstrate that the driving force in family behavior is not post-materialism but rather the changing role of women. Our key argument is that the early phase of women's role change provokes tensions and value conflicts within partnerships and this, in turn, leads to less partner stability, rising divorce rates and also to fewer births. But we shall see a reversal of these trends once a new and more gender symmetric social equilibrium emerges. However, for this to emerge our societies need a double adaptation: at the level of individuals, men and women need to develop a new gender egalitarian mode of partnership; at the societal level, we need institutions (in particular parental leave policies and pre-school child care supply) that permit partners to pursue gender egalitarian arrangements in their relationship.

Our empirical research has been aimed at exploring whether this kind of reversal is occurring in practice. Via comparing across countries with very different levels of gender egalitarianism and also across many decades, there is evidence that the countries most advanced towards gender egalitarianism (the Scandinavian in particular) do indeed show a (so far small) decline in divorce rates, more stable partnerships and, to an extent, rising fertility rates. However, trends since the Great Recession (2008 ->) contradict our conclusion to an extent since fertility has fallen to an extent.

Stronger evidence in favor of our argument comes from our research at the level of individuals and partnerships. Here it is very clear that there has been a reversal in the social gradient of fertility (and also divorce). While in the old days, fertility tended to be substantially higher among the less educated this is no

> *we need institutions (in particular parental leave policies and pre-school child care supply) that permit partners to pursue gender egalitarian arrangements in their relationship*

longer the case in a growing number of societies. In other words, we observe significantly greater fertility now among the higher educated (and similarly, we also see that the higher educated enjoy far more partner stability). Why? The primary reason has to do with the adoption of gender symmetric behavior within couples, and this is far more likely to occur within the higher educated professional classes. .

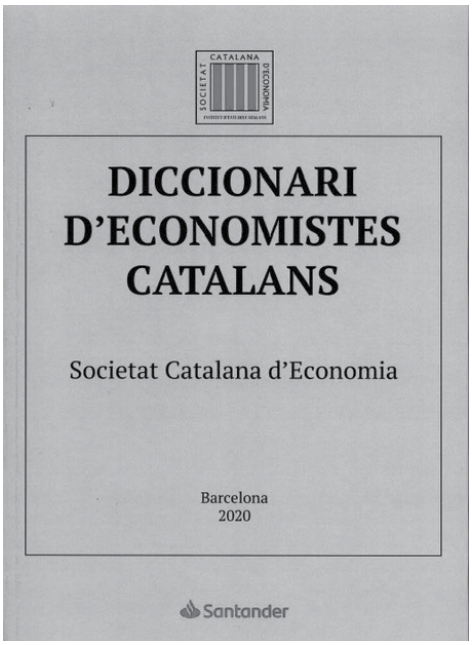
In your opinion, to what extent the welfare state policies might be influencing that reversal trend in fertility decline and social gradient?

Regardless, our research shows very clearly that the adoption of gender symmetric behavior in everyday practice is strongly correlated with welfare state support and, as I mentioned above, access to affordable and universal childcare is key. However, the design of childcare policies makes all the difference: childcare provision needs to be of high quality (low personnel: child ratios in particular), and affordable for all families regardless of their income.

Do you foresee any change due to the influence of the Covid-19 on family ties and fertility?

As regards your question regarding the impact of COVID-19 it is of course impossible to know exactly how the virus will influence fertility. In theory it could go in either of two opposite directions. Due to prolonged confinement in ones' homes, we might expect a positive fertility effect – as occurred during World War 2. But here we must remember that citizens in the 1940s did not have access to effective birth control methods. However, most demographers (and myself included) predict exactly the opposite, namely a negative effect on fertility. Why? The answer has to do with trust and predictability. As so much family demographic research has shown, partners' decision to have children depends to a very high degree on their perception that they can 1) trust that the relationship will be long-lived and 2) place their trust in their social community; that their social environment is and will remain predictably stable and child-friendly. ■

BOOK NEWS



DICCIONARI D'ECONOMISTES CATALANS

[DICTIONARY OF CATALAN ECONOMISTS]

Catalan Society for Economics
Barcelona: Institute for Catalan Studies July 2020 638 pages

Eduard Arruga i Valeri
Economist

The *Diccionari d'Economistes Catalans* [Dictionary of Catalan Economists], published in July this year, has been written by a group of experts and university professors linked to the Catalan Society for Economics, an institution based in Barcelona and a member of the Institute for Catalan Studies, after almost six years of work.

The aims of the Dictionary were, in broad terms: 1) to publish the continuity of studies and work related to the economy over time —in a general sense— in the Catalan-speaking and cultural countries; 2) reflect how in these countries and throughout our collective history, there have always been people and institutions dedicated to the study of economic science or the economy of these geographical areas, and 3) to serve as a basis for the study of the evolution of Catalan economic thought over time, based on the combination of the contributions and ideas of the various Catalan economists presented.

In this sense, the Dictionary is not intended to be a scientific study, but a reference book for further, more in-depth analysis of Catalan economists who have made contributions to economic science or the economy of these regions.

In total, in the first edition, comprising 638 pages, there are 310 authors reviewed, whose life and work can be appraised in its entirety. It refers not only to economists in the strict sense, but also to professionals from other disciplines —such as businesspeople, engineers, geographers, philosophers, sociologists— who have dealt with or written about economics or Catalan economics.

Each reviewed author includes a picture of the person or a cover of the most important book they have written, places and years of birth and death, an initial quote in which they summarise a substantial part of their thought, a brief biographical description, their main contributions to economic science or the Catalan economy, and their own bibliography and references. These final two sections, together with the main sector with their contributions, are the most valuable for future analyses.

Chronologically, it begins in the thirteenth century and ends with authors born in the twentieth century who, unfortunately, have already passed away.

For example, there are contributions by Ramon Llull, Francesc Eiximenis, Eudald Jaumeandreu, Laureà Figuerola, Francesc Moragas, Regina Lamo, Francesc Cambó, Pau Vila, Germà Bernàcer, Josep Maria Tallada, Pere Gual Villalbí, Miquel Vidal i Guardiola, Josep-Antón Vandellós, Joan Sardà Dexeus, Jaume Vicens Vives, Lluc Beltran, Agustí Chalaux i de Subirà, Salvador Millet i Bel, Claudio Boada Villalonga, Pere Durán Farell, Ramon Trias Fargas, Fabià Estapé Rodríguez, Jacint Ros i Hombravella, Ernest Lluch Martín, Alexandre Pedrós Abelló, Mercè Sala Schnorkowski, and Muriel Casals i Couturier.

Geographically, taking into account their place of birth, there are authors from various parts of the regions which share our common linguistic and cultural heritage, although the large majority were born in the city of Barcelona (118), but also in the other towns in the province of Barcelona (49), Girona (32), Lleida (13), Tarragona (25), the Valencia Region (20), the Balearic Islands (16), northern Catalonia 6), from the Principality of Andorra (1) and the Western Strip (1).

By gender, there are only eleven females, and we hope that the proportion will increase in future editions.
The Dictionary was prepared by an Editorial Board made up of five qualified economists, university professors and also members of the Catalan Association of Economists, such as Eduard Arruga i Valeri (president of the Catalan Society for Economics, who in 1975 and 1976 was deputy director of the *Economic Journal of Catalonia* in its first stage), Francesc Artal i Vidal (board member of the Ernest Lluch Foundation), Antoni Montserrat i Solé (author, with Jacint Ros i Hombravella, in 1967, of the pioneering book *L'aptitud financera de Catalunya*), Pere Puig i Bastard (former professor at Ramon Llull University - ESADE) and Francesc Roca i Rosell (author of most of the reviews and in 1994, of the book *El pensament econòmic català* (1900-1970). As well as these editors, there are 17 other experts, who have written about authors whose lives and works they know well.

Ultimately, this was a collective project, prepared with much enthusiasm and in our opinion, also very thoroughly. We trust that this Dictionary will be gratifying and useful for Catalan economists. ■

BOOK REVIEW

DIÁLOGOS EN LA INTERFAZ DE LA ECONOMÍA Y LA SALUD A PROPÓSITO DE LA COVID-19

[DIALOGUES IN THE INTERFACE BETWEEN HEALTH AND THE ECONOMY CAUSED BY COVID-19]

Guillem López Casasnovas (director and editor); Juan del Llano (coeditor)
Ed. Libroacademico S.L., 2020 (242 pag.)

Lluís Bohigas
President of the Health Economics Commission

This book is unusual, it does not have one single author but 23, under the directorship of Professor López Casasnovas -who is also one of its authors- with co-editor Juan del Llano - another of the writers. The editors selected 20 specialists, 10 from the economic sphere and 10 from the health sphere, and asked them five questions about COVID-19; and the answers given by the experts are compiled in the book. As this is an unusual formula, I will make a few comments on the format of the book and then talk about its contents. First of all, two important issues should be taken into account: firstly, the subject matter itself (COVID-19 arrived abruptly in our lives and appears to be here to stay) and secondly, the book's focus on the two issues that COVID-19 has directly affected, namely health and the economy.

It appears that the book was written last summer, which means, directly after the first wave and before the resurgence began. This has its advantages, since it analyses a specific phenomenon,but also its drawbacks, because it does not take into account what happens next, as the pandemic is not over.

This book's value lies in its 20 selected experts, 10 specialists in economics and 10 from the health sector. They all have extraordinary backgrounds and therefore their opinions on a topic like COVID-19 are worth reading. Congratulations go to the editors for selecting these people and persuading them to talk about the subject. These experts include four former ministers: Almunia, Salgado, Sebastián and García Vargas, all of notable weight and from the PSOE (Spanish socialist party). There are also several ex-ministers, two of them from the Department of Health: Ruiz and Mosquera, the first from CIU (Catalan Centre Right party) and the second from the PP (Spanish Conservative party). The university is well represented, with a majority of university lecturers and professors. Most experts in the health sphere are healthcare workers, but there are three economists: Planas, García Vargas and Castellón. And then, the curious case of the former minister Elena Salgado, from the Health Department (she fired me!) and the Economy (green shoots).

The questions are the same for all experts, both economists and healthcare professionals. Question 1 is about the failures of the

health system when faced with COVID-19, and suggests four possible solutions: a) better central leadership, b) more autonomy of health centres, c) social and health integration, and) civic responsibility. Question 2 revolves around the way in which the health needs of the future will be financed / executed: a) co-payments, b) tax pressure or c) structural changes. Question 3 has to do with technological improvement and the incentives needed to make this the great problem solver. Question 4 begins with a clear statement that "there is no trade-off between health and the economy," and the question is how health and the economy could be better integrated. Finally, the fifth question is open and gives the experts the opportunity to reflect on what is most interesting to them.

The book reveals the experts' answers to the questions and Professor Lopez Casasnovas reflects on these. The same pattern is followed in the section on health experts, where the editor and doctor Juan del Llano compiles the answers and provides a reflection at the end.

At the beginning of the book, the director and editor, Professor Guillem López Casasnovas, gives an introduction on his perspective on the pandemic, and the book closes with an epilogue written by Professor Beatriz González, in which she comments on the verdict regarding the social and economic reconstruction approved by the Congress of Deputies.

The answers given by the experts in economy are more concise than those by the healthcare professionals. The healthcare professionals go rather deep into things in a roundabout way. A notable case is Josep Figueras, who also includes up to sixteen quotes in his answers, and ends up grateful for the help of a reviewer. There are wide ranging answers, from very specific to some more fleeting and spontaneous responses. The contributions made by the experts should be read carefully, as they give many ideas on the subject and the knowledge the economic experts have on COVID-19 is remarkable.

Josep Figueras begins his answer to the last question by stating that the whole pandemic in general is an exercise in humility for him. In the case of the Spanish healthcare system, 'a dose of humble pie' is picked up on by several of the experts who acknowledge that the belief that we have "the best health system in the world" has been knocked down. COVID-19 has served as a stress test that has highlighted many flaws in the system, including low public funding. The director of the book acknowledges in the introduction that national health systems such as ours, have done worse than social health insurance systems. Recognising that there are problems is positive, because to change things we must first accept that there is a problem, and while we were satisfied with our health system, there was neither the desire nor the time to change anything. However, there is a certain degree of skepticism, based on a long list of aborted reforms, about the possibilities of changing the healthcare system. This is stated by various experts and the director of the book acknowledges this in the introduction, when he says: “Although it is probable that, having saved the situation and recognised the errors, things will simply return to the initial state of affairs”.

Many of the reforms proposed are the usual ones, but there is one that surprised me: it proposes to extend the MUFACE model to the entire population. I have not heard this proposal since the 1996 election as part of the PP government campaign. Once the elections were won, they completely forgot about the proposal and now it is back in the hands of a former socialist minister.

I am surprised that the proposals are always standardised, that is, the same for the whole of Spain. It reminds me of the first state of alarm, where instead of locking down the areas the pandemic was affecting, everyone was locked down under the motto, "the virus knows no borders." We seem to have learnt from that because the second lockdown was tailored to each region, with the exception of the Canary Islands, which the EU considers a safe area.

Question 4 begins by saying that there is no trade-off between economy and health, as good health improves the economy. While this is generally true, it must be acknowledged that in the first wave of COVID-19 the only weapon against the virus was lockdown, and this destroys the economy. Most governments, more or less earnestly prioritised health, but some did better than others. If we look at the end result, there are countries that saved the economy more and others that saved health more. In the case of Spain, there was no trade-off, because it came out as one of worst in both aspects: there have been more deaths than in most European countries and we have had the record decline in GDP.

The book addresses many other topics that I don't have space to comment on, but I highly recommend reading. All experts and editors and Beatriz González are highly knowledgable on the subject and explain themselves very well. I would just like to make one proposal for improvement in the book. It could be useful to compare differences of opinion between economic and health experts. This is probably the first time that there is such a broad understanding of a health problem by economic *intelligence*. ■

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