Foreword

A retrospective of the first issues of Population published in 1946

Population celebrates its seventieth anniversary this year. To mark the occasion, we have chosen to republish four articles from 1946, one in each of our 2016 issues. Each one is accompanied by an introductory commentary that highlights the topicality, or obsolescence, of the research topic covered and, from a twenty-first century perspective, looks at how the issues have evolved over time (see Foreword in 1-2016).

Following on from the article by Alfred Sauvy entitled "Assessment of French immigration needs" (1-1946), with an introduction by François Héran and published in Population 1-2016, this second issue features an article by Paul Vincent on "Population ageing, pensions and immigration" (2-1946), commented by Didier Blanchet.

The next two issues of the journal will present, respectively, an article by a historical demographer, Jean Meuvret, on "Subsistence crises and the demography of France under the Ancien Régime" (4-1946), analysed by Christine Théré and Isabelle Séguy, and an article by Jean Bourgeois on "Marriage, a seasonal custom. Contribution to a sociological study of nuptiality in France" (4-1946) commented by Arnaud Regnier-Loilier and Wilfried Rault.

Olivia Samuel, Anne Solaz and Laurent Toulemon
Population editors

All Population articles since 1946 are available in electronic format via the Population website (www.journal-population.com) which links to the Cairn and Persée portals (for the oldest issues), and to Jstor (http://www.jstor.org/).

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Didier BLANCHET*

PENSIONS PAST AND PRESENT
SAME EQUATION, NEW CONSTRAINTS

A notable characteristic of the pension issue is the extreme simplicity of the underlying accounting equation, the one which describes the relationship between three parameters: retirement age, contribution rates and the relative level of pensions. The text published in 1946 by Paul Vincent is by no means obsolete in this respect; the terms he uses to describe this equation could well be found, practically unchanged, in most current publications. The arguments he deploys to rule out a general return to a funded pension system also remain very contemporary. He focuses on a particular form of this system: investments with fixed nominal returns directly exposed to the risk of inflation. Today, the debate would be centred rather on the performance of financial markets, their potential contribution to the financing of the economy, counterbalanced by other forms of risk to which they expose contributors. But what remains approximately true is that no system is independent of demographic constraints: pensions are necessarily drawn from the wealth created at the same time by the working population. This idea was used repeatedly at the height of the debate on funded and pay-as-you-go systems in the 1990s.

Among the three terms of the pay-as-you-go "triangle", Paul Vincent excludes an increase in contributions, for reasons that are easy to understand. The French economy in 1946 was an economy of shortage, with the priority being to rebuild and to minimize the burden upon working people. While ruling out an increase in contributions, Paul Vincent refuses the option of a downward drift in pensioners' relative living standards: on the contrary, everything must be done to avoid such an eventuality. He thus argues for the third solution, for him the least unjust, namely an increase in the retirement age. But he suggests that it be combined with a population policy designed to limit its extent, or even make it unnecessary over the long term. This population policy is two-pronged: first, a higher level of fertility whose effects on the size of the working population would restore the pension balance over the long term; and second, over the short term, a targeted migration policy designed to repair the imbalances in the 1946 age structure, i.e. above all, the deficit of births during the First and Second World Wars.

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With 70 years of hindsight, how do these recommendations stand the test of time? The most outdated aspect is the author's presentation of population ageing. The ageing that Paul Vincent diagnoses and fears is almost exclusively "from the bottom", due to below-replacement fertility. This phenomenon still exists and is an important component of overall ageing in many countries; in these countries, family policies and greater recourse to migration are options that need to be considered. But in the French case, the main problem is not of this nature. France is a country where ageing occurs almost exclusively from the top, due to the lengthening of life. Family and migration policies can only provide temporary solutions to this form of ageing, unless we accept the unrealistic idea of compensating increasing longevity by perpetual population growth. Our contemporary understanding of the effects of the baby boom illustrates this change of approach. There is no doubt that the baby boom temporarily played the positive role that Paul Vincent expected from an upturn in fertility, but all this is now viewed as a long and non-reproducible parenthesis of history, whose closure must now be managed. After helping to finance pensions, baby boomers are now becoming a drain on resources: the large cohorts reaching retirement age account for a large share of the problems to be faced until 2035-2040.

So the demographic situation has become very different. Ageing, associated with an increase in life expectancy, is seen much more positively than in Paul Vincent's time: the pejorative French term *vieillard* he uses to qualify the over-60s was abandoned many decades ago and sounds shocking to modern ears. But at the same time, this ageing is much more pronounced and irreversible than that referred to in the article. Paul Vincent estimates that an increase in the retirement age of just two years would be enough by 1975 to counteract the effects on pensions of ageing. This increase was very moderate and post-war economic growth made it easy to take a totally opposite path by offering the means to finance longer and higher pensions while reducing the retirement age. Today, what is the result of the same calculation based on the latest INSEE projections (Blanpain and Chardon, 2010)? The ratio of over-60s to 20-59 year-olds was 40% in 2007. Based on the medium variant of these projections, the retirement age would have to be raised to 68 years in 2040, and to 69 years in 2060 to obtain this same ratio. Here, the effort required is on a very different scale, and it would probably be difficult to rely upon such a large increase as the sole instrument of adjustment.

What additional levers could we use? We know that no further increases in contributions are necessary if we accept, over the long term, a decrease of around 20% in pensioners' relative purchasing power, in addition to a pushing back of retirement age to around 65 years. This is what past reforms should bring about, assuming that economic growth follows the medium projections of the French Pensions Advisory Council (Conseil d'orientation des retraites, COR). The main mechanism of this decrease is the price-indexation of the

main parameters of the system: prices are used to reevaluate past wages that are taken into account for calculating the first pension, and they are used again for indexing current pensions once people have retired. While this policy takes account of the need to protect pensions against inflation risks, it does not fully pass on the benefits of growth in real incomes of retirees.

Would this drop in pensioners' relative living standards that Paul Vincent wished to avoid be more readily accepted in a society whose standard of living is beyond all comparison with that of the postwar period, and where retirees currently enjoy a mean purchasing power practically equivalent to that of the working-age population? Or should we avoid it by further raising contributions, despite a much less propitious context than was the case during the postwar boom years? Even if the general context has changed enormously, the shape of the equation to be solved has not changed, and the same three options must be weighed in the balance.

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Keywords: Ageing, retirement, immigration, Paul Vincent.

Commentary and article translated by Catriona Dutreuilh.

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POPULATION

REVUE TRIMESTRIELLE
DE L'INSTITUT NATIONAL
D'ÉTUDES DÉMOGRAPHIQUES

SOMMAIRE

PRESSES UNIVERSITAIRES DE FRANCE

POPULATION AGEING, PENSIONS AND IMMIGRATION

Importance of the population age structure Among the factors of the demographic situation, there is one which plays a very specific role, namely that of the population age structure. Yet, because this structure varied little up to the nineteenth century, demographers remained unaware of its importance for many years. Consequently, it was thanks, above all, to its disruptive influence on international comparisons based on crude rates that age composition became a specific topic of study. It was not until later, in a more recent period, that the need to extend these studies to other areas of key importance became clear, and it is Mr Sauvy who holds the honour of being the first scholar in France to highlight the economic consequences of population ageing.[1]

The effects of population age structure are multiple. First, in the purely demographic field, and aside from the technical problems it raises, age structure is often one of the reasons behind the slow speed at which many demographic phenomena emerge. For example, a reduction in fertility to below replacement levels does not immediately produce a surplus of deaths over births in a "young" population, because as cohorts of increasing size enter their reproductive lives, the number of births continues to rise for some years, while the increase in deaths is temporarily slowed by a decline in deaths of young children (who account for a notable share of all deaths). Births thus continue to greatly outnumber deaths for many years, even if fertility declines substantially.

The French people's persistent lack of concern for such an alarming demographic situation can be attributed to this circumstance, and likewise to immigration, which also masks their inadequate level of fertility. We note, indeed, that it is above all through changes in age structure that immigration has played this role, for the increase in population size resulting from inflows of foreigners alone would not have given such a misleading impression had these foreigners not arrived at childbearing ages (ages at which mortality

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[1] Cf. *Richesse et Population*. Payot. Paris, 1943.

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is low), thus swelling the numbers of births while barely affecting numbers of deaths. The balance of births and deaths could thus remain favourable for longer, failing to reflect, for several decades, the profound internal imbalance of the French population.

The age structure thus influences the population prospects of a country in a relatively near future. It also modifies them over a longer time scale. Hence, all other things being equal (same fertility and same mortality), a million citizens drawn at random in Italy or the Netherlands, and a million French people giving birth and dying in the same way as these Italians and Dutch, would not give the same population figure 100 years from now, by which time, the Italians and Dutch would be almost 20% more numerous than their French counterparts.(2)

These demographic effects of age structure are compounded by economic effects whose importance cannot be understated. This is just one of the many points where economic and demographic phenomena are interlinked. Indeed, it was through a strange aberration that political economy, of which demography was originally a major chapter, lost interest in this part of its domain, leaving statisticians to pursue the exploration alone and to establish demography as an independent discipline; economists, in the meantime, confined man, the key factor of production and consumption, to the mere role of economic entity, *homo economicus,* placed on the same footing as banknotes, wheat, coal, transportation, capital and services, all trampled upon by the implacable mechanism of a wretched "harmony". It was only under the pressure of social circumstance that political economy agreed to a somewhat more human approach, and returned its attention to what, in a man, is more than just a "worker" or a "purchaser" in possession (or otherwise) of "money". As economists thus achieved a more realistic conception of production and consumption, new horizons opened up before their eyes, notably regarding both the economic consequences of demographic phenomena and the demographic effects of economic factors.

The demographic-economic problems raised by changes in the pace of population growth are certainly those which most legitimately deserve attention in many countries. It would certainly be unpardonable (and, indeed, inevitably unpardoned) were the French, for their part, not to accord a level of attention commensurate with the importance of these problems in the world's "oldest" country, a country that must be "rejuvenated" at all costs if it does not wish to perpetuate, or even aggravate, its current decline.

Surely, no French person would gladly envisage a future where the children born today live their old age in a France with no more than 32 million inhabitants. And yet, this is the figure that would inevitably be reached, some 75 years from now, were the French population left to its own

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(2) On this topic, see our paper on *Potentiel d'accroissement d'une population* [Population growth potential], in the *Journal de la Societé de statistique de Paris*, January-February 1945, pp. 16-39.

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devices, with fertility remaining below the pre-war level. Were the French to consent to such a prospect, they would be making a serious mistake, and the future would soon reveal the error of their ways. For their territory would inevitably be invaded, be it peacefully or brutally, by foreigners. Indeed, there would not be 32 million French people on the present territory of France, but some 45 to 50 million inhabitants, among whom those born to French parents – further reduced in number by marriages between French citizens and foreigners – would represent barely more than half the total. We only need imagine what would remain of France's influence in the world to measure the scale of the peril that threatens us. We can thus posit that our first task must be to restore our birth rate, to raise it to a level such that the French population starts growing once again, or remains stationary at the very least, the effect of which will be to "rejuvenate" our population.

Yet the problem of rejuvenating the population presents particular difficulties, arising from the economic consequences of this rejuvenation. Indeed, all populations include, in very general terms, three categories of individuals: children, old people, and those we will call, for the sake of convenience, "adults", here taken to mean those adults not counted as old people. Of these three categories, only one is productive: it corresponds, more or less, to the working-age population. It is this category which carries the burden of maintaining the entire population, in other words, all consumers. In a rapidly growing population, the proportion of old people is small, while that of children is high. When fertility declines gradually and slowly, the proportion of children decreases and that of old people rises, but that of adults varies little. This was observed empirically by Sundbarg, and explained by Mr Lotka in terms of the "instantaneous tipping point".[3]

But if, on the contrary, fertility declines at a fast enough pace, then adults are relieved, for a certain time, of the burden of the children that they no longer have. For an equivalent overall output, per capita consumption can thus increase. This produces a momentary increase in well-being which may, depending on circumstances, benefit all categories (children, adults, old people) or one in particular. But some 30 years later, when the infertile adults have grown old and their too few offspring have become adults, then the burden of old age will increase considerably. Should the adults wish to maintain, all other things being equal, their level of well-being, then they will naturally seek to limit their progeny even more drastically than their fathers, thus setting in motion a process that, if we are not careful, can only end in catastrophe.

The rational solution consists, first and foremost, in raising fertility without delay in order to restore, some decades from now, the equilibrium that was momentarily lost. But this solution is austere, and inevitably painful, since for a time the adults will necessarily bear the burden of an excessive number of old people without any compensatory alleviation of their duty

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(3) Cf. *Theorie analytique des associations biologiques,* part 2. Paris. Hermann, 1939, p. 25.

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to maintain the young. Even if this does not always produce an absolute decrease in overall well-being – albeit a very temporary one –, it results in a momentary slowing of the increase in well-being that might have occurred had the attitude of demographic retraction persisted. These consequences are a very serious obstacle on the path to demographic recovery, all the more because of the social tensions they are liable to generate in response to the conflict of interests that will inevitably arise between the different categories whose living standards are under threat. It is a particular case of this nature that we will examine now, by imagining the consequences of population ageing on the economy of a universal old-age pension system.

Foundations of old-age insurance systems

Without needing to delve too far into the past, we can observe that, in fact, the immense majority of old people insured themselves against the "risk" of old age (using the word "risk" here as defined by insurance companies) through the children they brought into the world. In a society whose population was growing, the number of old people was low, and many of these elders had raised several children, at least one of whom was in a position to provide for them when, in their declining years, they were no longer able to fend for themselves. Indeed, the traditional framework of family life was remarkably well suited to this task. But we must not get the wrong idea on this point: this framework is often presented as a sort of "natural", pre-established institution, one of whose felicitous effects was to provide security in old age. We believe there would be grounds for reversing the roles in the relationship of causality, and for seeing in the need to provide this security, at a time when its social organization was non-existent, as one of the many causes that gave rise to this historical structure of society. In any event, it is a fact that security in old age was largely a family matter until recent times. Moreover, price stability enabled ageing childless persons to accumulate savings, in one form or another, for their later years. Those who could not save and who ultimately turned to society for support were a small minority, and individual or organized charity, followed later by collective assistance, readily provided succour to the most needy and ill-fated.

It is rather difficult to determine the role played by demographic phenomena in the general aspiration for more effective social justice which has characterized the period extending from the late eighteenth century to the present day, but this role is certainly far from negligible. The lengthening of human life and population ageing have certainly contributed, alongside the industrial revolution, the First World War and monetary upheavals, to a profound transformation of the nature of family relationships and the very foundations of old-age security. All in all, households that have raised four children to adulthood can each hope to be accepted into two homes when they reach old age: on average, each household formed by their descendants will have only one old person to look after. On the contrary, a household resulting from the marriage of two only children runs the risk (the word

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takes on its true sense here) of having four old people under its care at some time or other. If we also consider that progress in reducing mortality has greatly increased the chances for new-borns of reaching adulthood, and the chances for adults of reaching their elder years and spending more time at an advanced age, then we understand that not only has the mortality decline been a primary cause of the decrease in fertility (which has also contributed to the fall in infant mortality), but also that the fertility decline, once initiated, has almost certainly been exacerbated by population ageing.

We also understand why adults, whose security in old age was under threat, sought ways to no longer count upon their children – who were increasingly drawn away from the family environment by the demands of new forms of existence – to provide this security. We thus see the extent to which mortality decline, fertility decline, changes in family life, and changes to the economic and social structure, became closely interdependent, responding to each other in turn and thus contributing to the transformation that began long ago and that is still ongoing. The monetary disturbances brought about by the First World War, and the economic crises (upon which demographic phenomena were certainly not without influence) accelerated the pace of change.

In a sufficiently stable economy, where money maintains its value, old-age security can be acquired individually through accumulation of personal savings. This phenomenon conceals the fact that ultimately, whatever the form of the economy, the burden of old age falls on the shoulders of the producers, i.e. the adults. But when, through force of circumstance, the burden carried by the workers becomes disproportionate with respect to the income at their disposal for their own needs and those of their children, then the contradiction inherent to this purely financial and accounting conception of old-age security rapidly comes to light. The resulting economic imbalance generally results in a devaluation, enabling the producer to shed a part of this unbearable load. This shift in income distribution through monetary devaluation occurs under the pressure of circumstance, with no concern for social justice and with no way of exactly measuring its consequences on the living standards of the various non-productive social strata. When the resulting injustices are truly excessive, the legislator sometimes intervenes to partially remedy the problems they cause, although his action generally stops there.

This becomes clearly visible when we examine the functioning of old-age insurance based on the system of funded pensions. To all appearances, this system is equitable and simple to implement. By taking out an insurance policy, an individual of any age provides himself with a given pension from a certain age, subject to payment of a constant annuity deducted from his income up to that age. As the rate of accumulation is fixed, the amount of the annuity to be paid in each particular case can be easily determined by means of an actuarial calculation based on the probability of dying at each age. Thanks to the law of large numbers, the insurance company which accepts the policy is able to spread the risk.

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But however attractive this system may sound, it is easy to see that it is no longer suited to the conditions of modern life: in practice, it cannot give the individual the security he seeks. Indeed, for reasons of monetary instability, the mathematical equivalence between the annuities paid by the individual to the insurance company and the retirement pension he later receives is purely nominal. For it to be real, the legislator must intervene to make it so. This is certainly what would occur in old-age insurance systems covering the entire working population, or large segments of it. Pressure of opinion would oblige the public authorities to increase pensions if the purchasing power of money were to fall. But this increase would doubtless be insufficient to provide contributors with a real pension corresponding to the real contributions they have made. Even if the government were willing to ensure this equivalency, it would probably not always be able to do so, since devaluations are not only an act of government, but also result from an imbalance between the economy and the national currency. They are not even necessarily the consequence of past errors of economic policy. They may have – and frequently do have – much more deep-rooted causes.

Let us look for a moment at what will happen if the proportion of working people decreases while that of old people increases, all other things being equal, when all old people receive a pension of the type that we are studying. Whatever the nominal value of pensions, it is clear that their total amount represents no more than a vocation to acquire a certain fraction of real national income, the remaining fraction being allocated to economically active persons (either for their own consumption or that of their children, or for the maintenance or expansion of means of production). As real national income is a given, the share allocated to pensions can only increase at the expense of the share reserved for working persons. This point is crucial. We have made the assumption "all other things being equal", yet real national income can increase fast enough to provide a constant real pension to a growing number of old people while ensuring a growing real income to each member of the working population. But the preceding remark about solidarity between the two groups of sharers remains utterly pertinent in the sense that, in an ageing population such as the one we envisaged, a constant old-age pension cannot be guaranteed without reducing the real individual income of adults *with respect to what it would have been* had the proportion of old people not risen.

Consequently, in a universal funded pension system, the distribution of national income between the working population and retirees takes place via variations in the purchasing power of money, possibly associated with pension equalization measures. But in this case, the accumulation of funds becomes more apparent than real, and the result is no different from that of a pay-as-you-go system.

Indeed, in such a system, the participants' contributions form a mass that is distributed each year among all pensioners. If we wish to maintain

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either the nominal pension amount or the real pension value at a constant level, whatever the variations in the ratio of pensioners to contributors or in the purchasing power of money, we simply need to adjust the level of contributions accordingly. The major difference with respect to the preceding system is the lesser visibility of the link between the sacrifice made during working life and the advantages gained during retirement. But this difference is only real during the initial launch of a universal system. Once the system is fully in place, it is totally fictitious. All in all, the public opinion to which we alluded earlier may well, under a funded pension system, protest against the injustice suffered by old people as a result of major devaluations and demand an equalization of pensions on their behalf. But as this equalization concerns not only old people, but also working people who actually benefit from the injustice in question, it may not be total. Especially since exact equalization may not be equitable. Despite appearances, old people who made payments during their working lives at a certain parity of the franc, have not acquired the right to a certain pension at this parity. As a result of the social solidarity that we illustrated above, they are responsible (as a whole, of course, and not individually), by way of their past fertility, for the greater or lesser number of young adults who effectively bear the burden of their upkeep. Providing, in all cases, an immutable real pension to old people may not, therefore, be absolutely just. In reality, if the pension burden becomes too heavy for working people to carry willingly, then they will find a means to shed a part of it in one way or another.

In short, whether in a funded pension system or a pay-as-you-go system, the fate of retirees depends to a certain extent on the legislator; in the former case, through devaluations and equalizations, and in the latter, through the setting of contribution levels. But the pay-as-you-go system will always provide retirees with greater security than a funded system, especially if contributions are securely pegged to the cost of living: for example, if they are pegged to wage levels. Not to mention that the pay-as-you-go system offers a means to pay an immediate pension to retirees who made no contributions before the universal old-age insurance scheme was introduced. For all these reasons, the funded system should doubtless be abandoned, at least as the basis for universal old-age insurance.

But even without seeking to foretell the future in this respect, we have seen that the final mechanism whereby the two systems operate, in the particular case of universal old-age insurance, is identical: the current burden of supporting the old is borne by the working population. Were this to take the form of taxes or contributions, or, on the contrary, were the population to lighten it load by taking advantage of monetary devaluations or refusing to raise its contributions, in the first case as in the second, the two systems produce the same result. This is why we will rid ourselves of the fiction that funds payable in nominal values can be accumulated in a perpetually changing economy, and we will conduct our study on the basis of a pay-as-you-go system.

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Equivalent retirement ages in various countries

Under these conditions, it is clear that the amount payable in contributions corresponding to a pension of a given amount does not depend solely on the ratio of pensioners to contributors. Yet this ratio itself depends solely on the retirement age and the age structure of the adult population. This means that we can study, in a given population, the variation of an index of the "pension burden" borne by contributors when the retirement age varies – this index being provided, for example, by the ratio that we referred to here-above. We can study different populations in this way and thus define what Mr Sauvy calls "equivalent retirement ages" in these populations.(4) Last, if we see that mortality variations are quite small over time, especially beyond early childhood, we can see that the age structure of the adult population is more or less determined – not counting migration – for the next twenty years or so, whatever the future variations of fertility. For a closed population, we can thus predict, with quite a high degree of certainty, the variations in the pension burden throughout this period.

Let us examine in this respect the situation of France compared with the other main countries in 1940. It is obtained from Table 1. Each column of this table provides, for the countries listed, a series of equivalent retirement ages, i.e. corresponding to the same pension burden. This burden is indicated on the second line of the table by the subscript i defined by the ratio of persons at or above retirement age to persons aged 20 or more and who have not yet reached retirement age. For the French population, the values chosen for i correspond, in 1945, to the rounded retirement ages given in the first line.

On this table we can see, for example, that to provide the same pension with the same contributions in England and France in 1940, the retirement age would have had to be around two years higher in France than in England. To simplify interpolations, we used this table to produce the chart below. It provides a simple means to find equivalent retirement ages in the other countries at a given retirement age in any one country, and to see the respective positions of the different countries in this respect.

Table 2 provides some equivalent values for the year 1940 that we can assess using this chart for ages 60 and 55 years in the USSR (columns 2 and 4) and 65 and 60 years in France (columns 3 and 5). The countries are classified from the most to the least favourable situation for the basic age of 65 years in France (column 3). As expected, the position of France is particularly unfavourable. Column 6, which gives the differences in equivalent retirement age between France and the various countries, for the basic age of 65 years in France (column 3), provides a striking illustration. We see that if France granted a pension to all its old people from age 65, the other countries could provide, with the same contribution per "adult", the same pension to their

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(4) Cf. *Chances de l'economie française*, Presses universitaires de France, Paris, 1946, p. 211.

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EQUIVALENT RETIREMENT AGES IN SELECTED COUNTRIES

TABLE 1

(Estimation on 30 June 1940)

Basic retirement age (France on 1 January 1945)	55 years	60 years	65 years	70 years
Index of corresponding pension burden: i	(0.437)	(0.292)	(0.185)	(0.104)
France	54.8	59.7	64.5	69.6
Belgium	53.3	58.1	62.9	68.3
England and Wales	53.0	57.8	62.5	67.7
Sweden	52.2	57.3	62.7	69.1
Germany (1)	51.8	56.8	61.8	66.8
Switzerland	51.8	56.8	61.7	66.8
Denmark	51.2	56.3	61.5	67.9
Italy	50.9	56.2	61.6	67.3
Netherlands	50.5	55.7	61.0	66.6
Canada	50.4	55.2	60.0	65.7
United States	50.4	55.0	60.2	66.1
Spain (2)	50.0	54.9	60.4	66.0
USSR	45.4	50.6	56.3	62.5

(1) Territory of 1937
(2) Approximation

TABLE 2

COUNTRY	Equivalent retirement ages on 30 June 1940				Difference with France (col. 3)
1	2	3	4	5	6
USSR	60.0	57.0	55.0	50.9	8.0
Canada	63.4	60.6	58.9	55.5	4.4
United States	63.7	60.8	59.0	55.3	4.2
Spain	63.7	61.0	59.2	55.2	4.0
Netherlands	64.3	61.6	59.8	56.0	3.4
Denmark	64.8	62.1	60.3	56.6	2.9
Italy	65.0	62.2	60.4	56.5	2.8
Switzerland	64.8	62.2	60.6	57.1	2.8
Germany	64.8	62.3	60.7	57.1	2.7
England & Wales ...	65.6	63.0	61.5	58.1	2.0
Sweden	66.5	63.3	61.5	57.6	1.7
Belgium	66.1	63.4	61.8	58.4	1.6
France	67.5	65.0	63.4	60.0	–

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old people with a retirement age two years earlier in England, four years earlier in Spain and… eight years earlier in the USSR!

It is important, however, to specify how these equivalences evolve over time. As a consequence of the general phenomenon of population ageing, the retirement age corresponding to a given burden is currently increasing in all countries. But it certainly is not increasing everywhere at the same
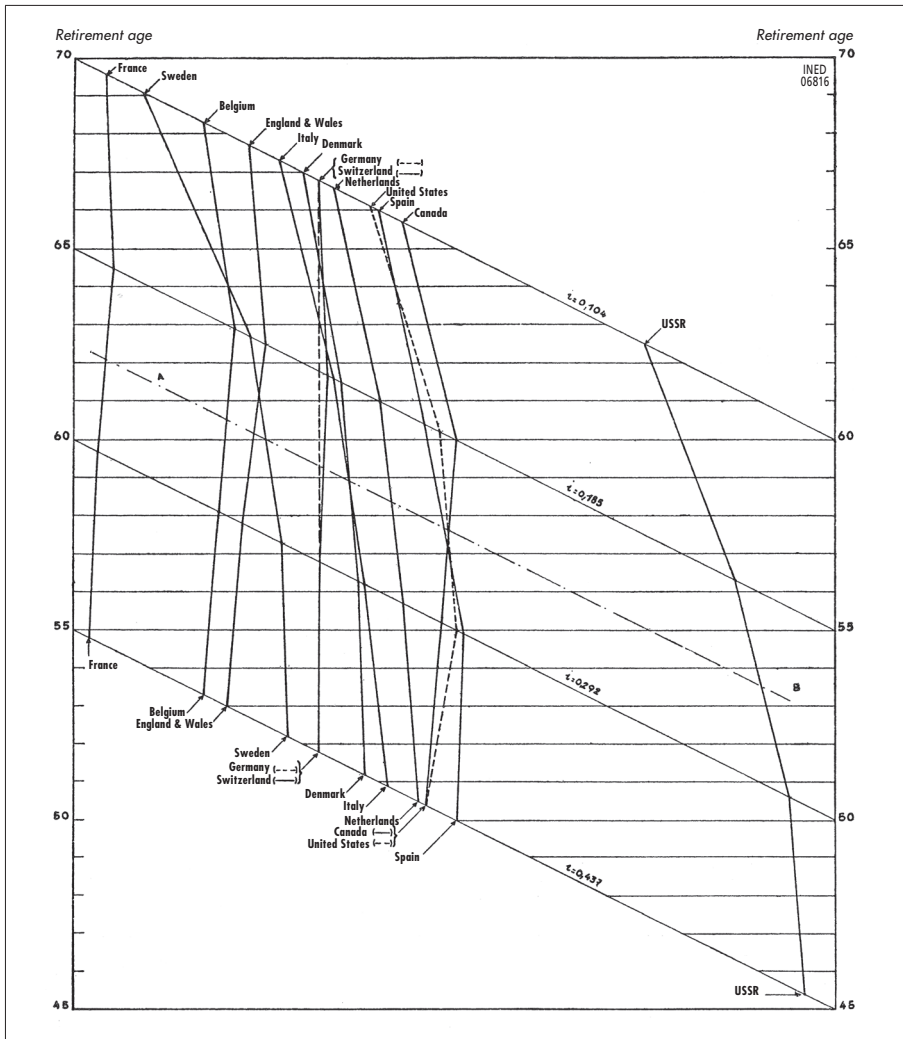
Graph no. I. – Chart of equivalent retirement ages in selected countries (in 1940)

The diagonal lines marked i = 0.104, i = 0.185, etc., are lines of equal burden. To obtain the equivalent retirement ages for a given retirement age in a given country, e.g. 60 years in Sweden, proceed as follows. At the point A where the curve of Sweden intersects with the 60-year horizontal line, draw a line AB parallel to the lines of equal burden. The y-values of the points of intersection of AB with the curves of the various countries give the respective ages: 62.1 years for France, 60.5 years for Belgium, etc.

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pace. The age structure of the adult section of certain populations is quite stable, either because these populations have aged, as in Sweden, or, on the contrary, because they have remained young, as in Italy where fertility decline is very recent. In these countries, the retirement age corresponding to a given burden is increasing quite slowly at present. In certain other countries, on the contrary, the fertility decline, more recent than in France but less so than in Italy, is today resulting in rapid ageing of the adult population. This is notably the case in Belgium. This means that the relative positions of the curves of each country on the chart are liable to change. In particular, the curve for Belgium has certainly moved closer to that of France since 1940. To take account of these movements of the curves of each country over time, Table 3 gives an evaluation of the increase in retirement age corresponding to the burden $i = 0.185$ (3$^{\text{rd}}$ column of Table 1) during the five years preceding 1940.

TABLE 3

INCREASE IN RETIREMENT AGE OVER FIVE YEARS
($i = 0.185$, period 1935-1940- evaluation)

France	Belgium	Eng. & Wales	Sweden	Germany	Switzerland	Denmark	Italy	Netherlands	Canada	United States
0.7	1.0	0.9	0	1.0	0.7	0.4	0	0	0.6	0.9

These figures are merely illustrative and give no more than a rough estimation of the degree of stability of the equivalent retirement ages given in Table 1. We have not given those for Spain and the USSR, countries for which we do not have the necessary evaluation instruments. The degree of stability appears to be high in Spain, and in the USSR the adult population may well be growing younger. It is important to note that the figures given in Table 3 must be considered with caution for the immediate future. In countries most affected by the 1914-1918 war, the entry into adulthood of the "depleted cohorts" resulted in accelerated ageing precisely during the period 1935-1940. Consequently, it is likely that in the future, the retirement age will increase less quickly in these countries than suggested by Table 3. This is what we see for France, in particular, where the increase in retirement age is just 0.5 years from 1940 to 1945, compared with 0.7 years during the preceding five-year period. The same phenomenon is doubtless occurring, though with a lesser intensity, in Germany and Belgium, and likewise in England, where it is even less pronounced. In Italy, there is no marked increase in the equivalent retirement age over the period 1940-1945.

The above statements must, moreover, be interpreted in the light of the consequences of the recent war, which has created gaps of varying dimensions in the adult population. This has certainly produced substantial modifications in the age structure of several countries which may considerably undermine the earlier conclusions. In France and Belgium, the war losses produced a slight accentuation of population ageing. In

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Germany, the proportion of adults must have fallen much more sharply as a consequence of the war. In England, on the other hand, the effect is negligible. The substantial losses incurred by the USSR must have considerably raised the proportion of old people with respect to adults, and likewise the equivalent retirement age with respect to the other countries.

The ageing of the French population and the pension problem

We will now look more closely at the outlook in terms of old-age pensions for France in the coming years, taking account of its demographic situation. Let us begin by looking at the prospects established by Mr Sauvy[5] for the period 1935-1985 under the two following hypotheses:

1) constant fertility and mortality, remaining at the levels observed at each age in 1935;

2) continued decrease in age-specific fertility and mortality, at the same pace as in the years preceding 1935.

When they were first established, these prospects were destined to reflect reality for a relatively long period to come. Today, we perhaps have grounds to moderate our pessimism, and to suppose that the facts will gainsay the latter hypothesis at least. In any case, what counts most for us is to have two points of comparison to judge the future, so that we can appreciate the degree of uncertainty of our conclusions.

So let us examine the variations in the ratio i of the number of old people aged 60 and above to the number of "adults" aged 20-59, under the two above hypotheses. Between 1935 and 1975, it increases from 0.26 to 0.37 under the first hypothesis and to 0.45 under second, i.e. an increase of 40% or 71%, respectively, in 40 years. How would this affect a universal pay-as-you-go pension system? To maintain the necessary balance between contributions and pensions, one might envisage, for example, one or other of the following solutions or combinations of several of them.

1) Increase the level of contributions in the same proportions (40% or 71%) while leaving pensions unchanged.

2) Reduce pensions to the same extent (by 28% or 42%) without raising contributions.

3) Raise the pension age without any change in contributions or pensions, which would call for an approximate increase in the retirement age from 60 years in 1935 to equivalent ages in 1975 of 64 years under the first hypothesis and 66 years under the second.

4) Resort to young adult immigration, a strategy that would call for

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(5) "Perspectives statistiques sur la population, l'enseignement et le chômage", in *Journal de la Societ*é *de statistique de Paris*, June 1937, pp. 227-241.

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inflows of 6 or 10 million foreigners over some 30 years, depending on the hypothesis.

These solutions are clearly very different in terms of their applicability. The first is more or less impossible to implement. The second is more in line with today's erring ways: in fact, for anyone seeking to create their own pension pot through individual saving, it is the solution so far imposed upon them by successive monetary devaluations. While the pensions of civil servants are protected by measures of partial equalization, small annuitants have been the major victims of monetary manipulations, to an extent out of all proportion with the equitable apportionment of costs arising from circumstance (notably the war).

However painful it may be, the third solution is probably the least unfair: it obliges future pensioners themselves to assume the consequences of their earlier infertility. Clearly, it has the shortcoming of placing the entire collective burden of error upon the shoulders of a single category of individuals. But arrangements such as age premiums linked to the number of children raised could be introduced to take account of individual situations. Hence, those who willingly raised a large family at the expense of their standard of living during their working life would be justly compensated by the option of earlier retirement. From a strictly economic viewpoint, the age structure above 60 years provides grounds for recommending solutions of this type. As the number of survivors in each age group decreases rapidly with age, a modest increase in the retirement age considerably reduces the number of pensioners, and hence substantially raises pension payments. For example, if the current retirement age in France was raised from 60 to 65 years, all other things being equal, pensions could be increased by almost 60%.

Note, however, that the size of this figure simply reflects the fact that a much larger number of people would die before ever receiving their pension. It is also important to bear in mind that the arithmetic results given above would remain valid in practice only if older workers could be deployed in jobs where they were no less productive than younger adults. This raises a problem of labour deployment, and depends on the ability to adapt the workplace to the physiological capacities of older workers, a question of particular interest for our country in the current circumstances.

The fourth solution looks like the easy way out. But the problem of assimilating such a large number of foreigners in such a short time would be practically insoluble, and France would run the risk of a veritable colonization. So immigration alone cannot serve to remedy the difficulties arising from population ageing: it must be envisaged in combination with other measures, such as a lengthening of the working life, until such time as the upturn in French fertility has started to bear fruit. But under our current demographic and economic circumstances, it remains a necessity.

Faced with the task of reconstruction to repair war damage, to replace the resources plundered by the occupant and to renew our ageing

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infrastructure and equipment, the speed of our recovery will depend largely on the help we can receive from foreign workers. But it would be a culpable error to see this help as merely temporary. Immigration must indeed be deemed temporary in the sense that we must do everything in our power to attract the necessary inflow of foreigners, and that once a sufficient contingent of foreigners has arrived in France, the call for foreign manpower must cease. But this immigration must be deemed as permanent in the sense that the foreigners thus brought into France must remain there to produce future French citizens, taking the place in our population of all the French people who are missing, and who will always remain missing — all those who, because of war, were never born between 1915 and 1919, but also from 1934 onward.

The influence of a rejuvenated population

Whatever the future recovery in fertility, it is important to note that, in the absence of immigration, the adult population of France is already determined for the coming two decades; that even beyond this time horizon, the overall number of adults will, in the early years, only be marginally changed by our fertility recovery; and last, that the number of births will itself be affected for a long time to come as the cohorts reaching reproductive age over the next 25 years get smaller and smaller.

This is shown by the graph below, which represents, on the left, the current distribution (in percentages) of the total adult population (aged over 20, including old people) and, on the right, the same distribution in 30 years time, in the absence of immigration, under the two following hypotheses:

1) constant fertility and mortality, remaining at the levels observed at each age in France in 1930;

2) constant fertility and mortality, remaining at the levels observed at each age in Italy in the same year.

Simply by concealing the lower part of the graph below 60 years (to avoid an optical illusion), we can clearly see that the proportion of old people on the right-hand side of the graph is higher than on the left. There is a remarkable constancy in this proportion in 1975 under both of the hypotheses represented on the right, despite the presence in the lower half, in the case of Italy, of ten large cohorts born between 1945 and 1954, when the very low rates in France are compared against the enormous rates of Italy in 1930 (rates that we cannot hope to match in our own country).

This constancy is linked to the fact that Italian mortality rates are lower than ours at adult ages, but higher during childhood. We must seek to reduce our adult mortality rates, but a large increase in fertility may amplify infant mortality as a consequence of the conditions inherent to the presence of more children in each family (higher contagion risks, maternal supervision and care spread across a larger number of children, etc.), especially under

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ADULT POPULATION OF FRANCE
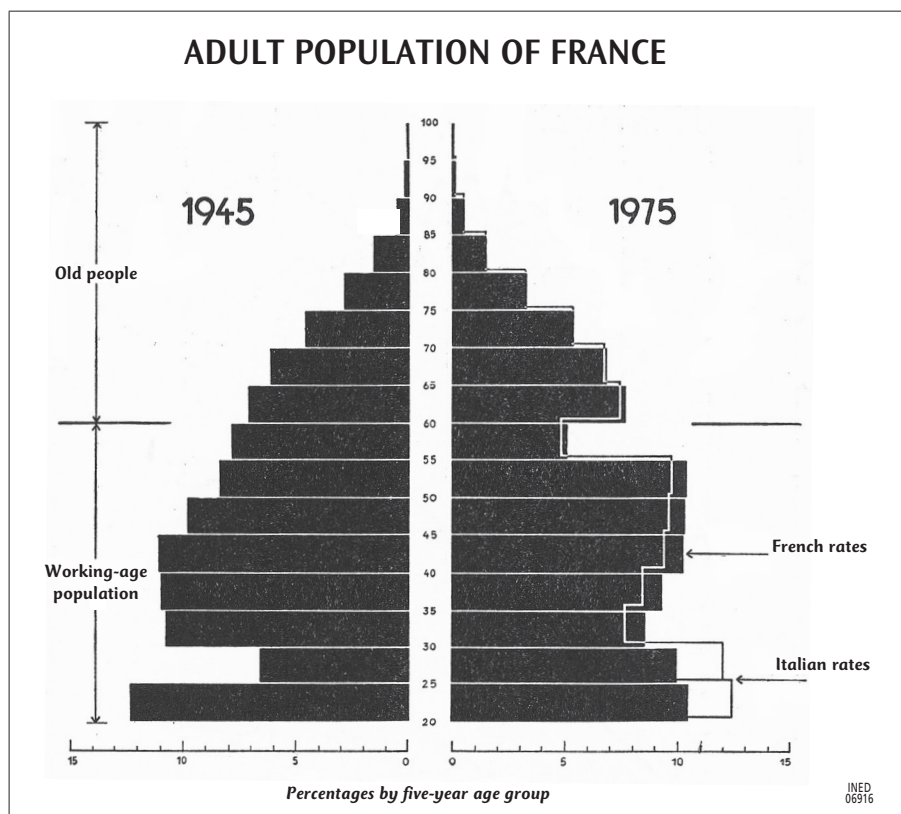
Graph no. II. – *Age composition of the adult population in 1945 and 1975*

the conditions of today, which will remain difficult for many years to come. No notable change in the proportion of old people can thus be expected over the next 30 years.

Graph no. III illustrates this phenomenon even more clearly. It gives, for the coming 75 years, under the two above-mentioned hypotheses, retirement ages equivalent to the basic ages of 55, 60 and 65 years considered at the present time. On these curves, we can immediately see the discontinuity corresponding to the arrival at retirement age of the depleted cohorts born from 1915 to 1919. Their transition from the economically active group to that of retirees produces a sudden lightening of the pension burden for the working population which shows up as a notch in the curve of equivalent ages.(6)

The notch reaches its lowest point, which corresponds roughly to the basic retirement age, in 1975 if this age is set at 55 years, in 1980 if it is set at 60 years, and in 1985 if it is set at 65 years. We note that up to these

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(6) Likewise, the arrival at retirement age of the "depleted" cohorts, born between 1935 and 1945, produces a notch that is observed on the right-hand side of all the curves.

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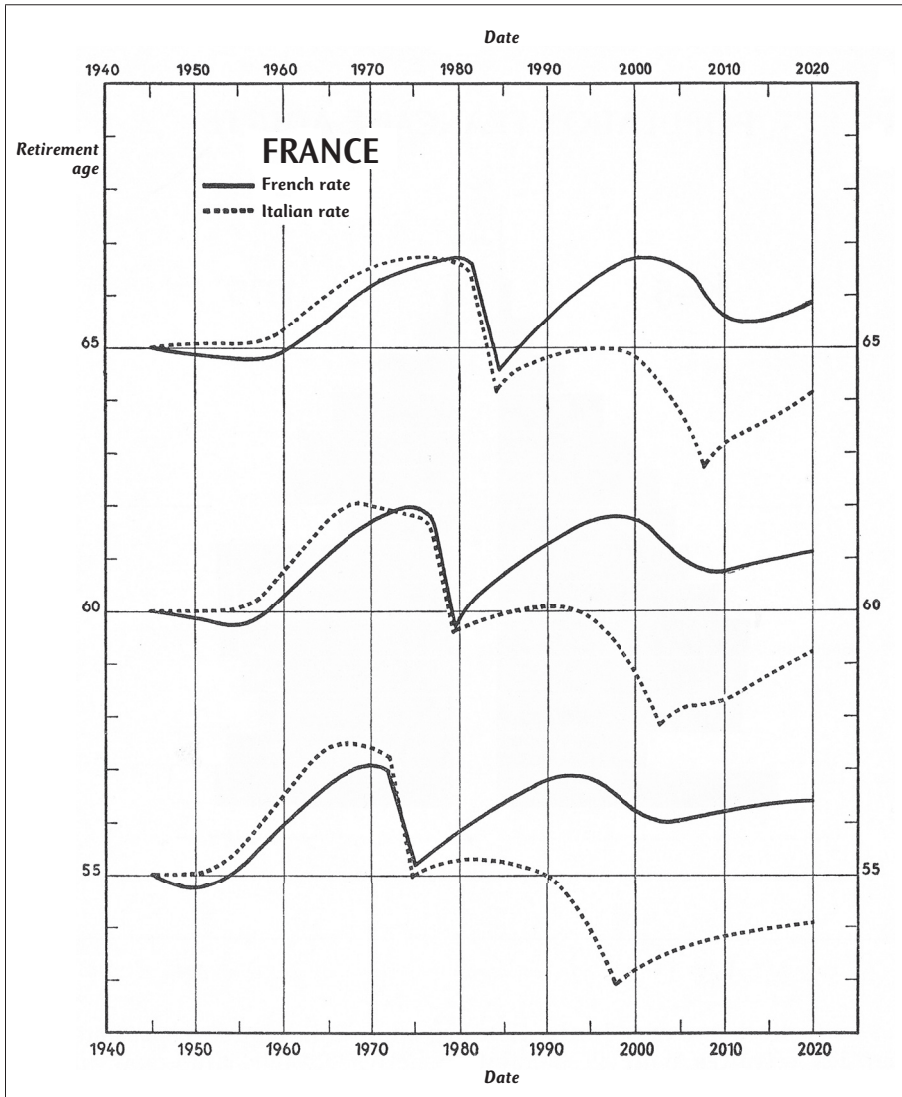
Graph no. III. – *Equivalent retirement ages at different dates: burden of old age*

points, the curves plotted under our two very different hypotheses remain very close to each other. They do not start to diverge strongly until after the corresponding dates, in response to the arrival of large cohorts born after 1945 who rejuvenate the population under the hypothesis of a shift to the Italian rates.

It is thus clear that, whatever the results achieved in raising fertility, the retirement age would need to be raised by around two years with respect to its current level over the next 25 years to maintain a constant pension burden, and that the necessary changes in retirement age resulting from the

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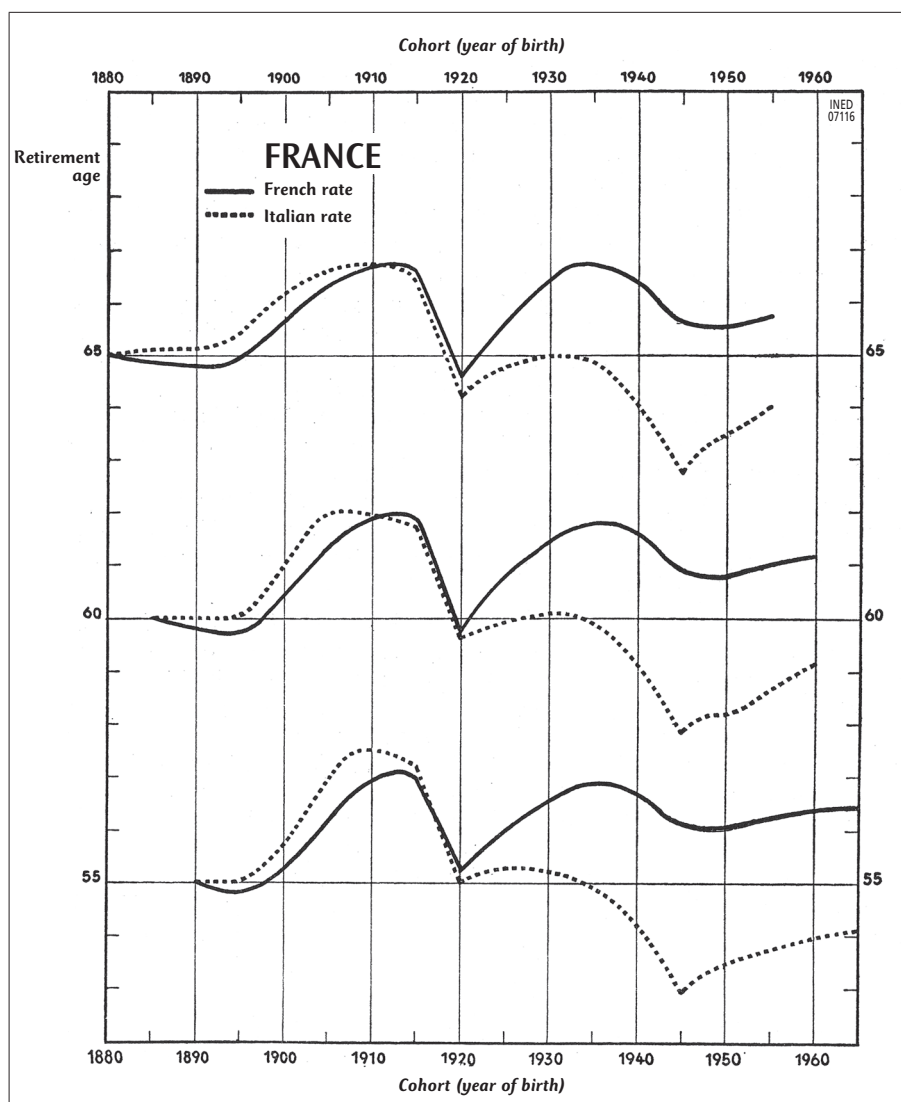
Graph no. IV. – *Equivalent retirement ages for the different cohorts: burden of old age*

population structure, at each date, over the next 30 to 40 years, will be very similar (in the absence of immigration), whatever the mortality trend over the period. Graph no. III does not clearly indicate the consequences of the population age structure for the retirement age of a given cohort. Graph no. IV, on the contrary, which gives the equivalent retirement ages for different cohorts, provides an instant reading of the situation. We see immediately that the particularly large 1920 cohort, born immediately after the depleted cohorts of the First World War, will be especially privileged in all events. On the contrary, persons born between 1905 and 1915 must expect, all other

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things being equal, and in the absence of immigration, to retire at least two years later, on average, than the 1920 cohort or the cohorts born before 1895. This obliges us to rectify our above assertion concerning the equity of measures to prolong working life. What is true, on average, for a set of cohorts and in the absence of major disturbances, ceases to be so for a given cohort, or when such disturbances in the age composition have occurred. For example, the reproductive life of the 1915 cohort is far from over. Whatever the number of descendants it produces, it will be disadvantaged with respect to the 1920 cohort, say, which will enjoy the privilege of following a series of depleted cohorts. A certain continuity in economic policy may nonetheless help to attenuate such irregularities. Graph no. IV also shows that the cohorts born after the First World War will be the first to profit from the imminent upturn in fertility. Hence the cohorts currently reaching marriageable age are the first to gain from having many children who, in turn, will benefit greatly from the resulting rejuvenation of the population. The people born between 1895 and 1915 – in their prime years and currently aged 30 to 50 – would, for their part, benefit directly from the immediate implementation of a rational immigration policy. Immigration is thus both an economic and a demographic imperative for France.

Rational basis for an immigration plan to rejuvenate our population

So let us examine what might constitute rational settlement immigration for the coming years, or, to be more precise, for the next five years. A demographic policy cannot be a short-sighted policy: the problem of France's immigration policy in the next five years obliges us to foresee the possible consequences over the next 70 to 75 years. It is clearly essential to address this problem as part of a general demographic policy whose goals must be defined in advance: a general policy that is necessarily based on the assumption of a certain continuity over the long term, with the option of shifting the initial plan in a slightly different direction at a later date if circumstances so dictate.

Let me say from the outset that the goals to be set will be extremely modest, well below the desirable optimum, to ensure that we remain well within the bounds of feasibility. The "pyramid" below represents, in black, the current age composition of the French population (based on the estimates of Mr Ledermann, see below). The graph shows, in white, the stationary population based on the French pre-war life table (1933- 1938) for a figure of 725,000 annual births. This number corresponds to equal numbers of women aged at least 40 in the current population and in the reference stationary population: it was chosen because it corresponds most closely to the fundamental structure of the current French population at advanced ages, as is shown, on the graph, by the remarkable way in which the stationary population matches the actual population above age 50 (apart from the notch on the male side between ages 50 and 70 due to military deaths in the 1914-1918 war).

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A stationary population can be defined as a population whose overall size remains invariable, with the number of deaths exactly matching births, and with the number of people at each age resulting from the number of deaths occurring up to that age. If we use such a population as a basis for comparison, it is because, as we have already noted, no lucid Frenchman would ever dream of staking the future of his country upon a declining population. The natural balance between births and deaths, in the absence of immigration, is *a minimum* that we must seek to achieve as rapidly as possible, and consideration of the age structure requires us to set the annual number of births of this stationary population at around 725,000. This is not a high figure, and it is certainly not beyond our reach. Note, however, that owing to the presence of the "depleted cohorts" born from 1915 to 1919 and since 1934, the figure of 725,000 annual births corresponds to a notable increase in fertility with respect to the pre-war period, especially in the periods when these depleted cohorts reach their most fertile ages (between 20 and 30 years).

The size of the stationary population corresponding to these 725,000 annual births is itself modest, at 42,600,000 inhabitants(7) – note in this respect that before the war, France counted more than 41 million inhabitants, and that with five or six million more, the French people's standard of living would have been much higher than was actually the case. Thus, if the French population currently had the some age composition as the stationary population we have just defined, and if we were able to set the annual number of births at 725,000, the future of the population would be assured – upon condition, however, that we returned quickly to pre-war mortality rates, from which we are relatively distant at present (above all for infant mortality, which would oblige us, if we remained at the level reached in 1945, to increase the required number of births by 30,000).

In reality, as shown clearly on the graph, with 725,000 annual births, the current population of France (39,700,000) would increase quite notably in the first years thanks to the "deficits" at advanced ages in the population of 1946 compared with the stationary population. But the level of 42,600,000 inhabitants would only be reached progressively, over a century, and there would be numerous variations in the annual surplus of births over deaths, reflecting the tortuous shape of our population "pyramid". We have already seen other drawbacks of the anomalous age distribution of our population. One of the crucial advantages to be gained from a rational immigration policy will be to attenuate these anomalies as far as is possible. Let us now look at the practical consequences.

Using the graph to determine the limits of the age groups to be considered, we can draw up the following comparative table of the two

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(7) These figures correct those given in *Population* no. 1, that were calculated using a less favourable life table (editor's note).

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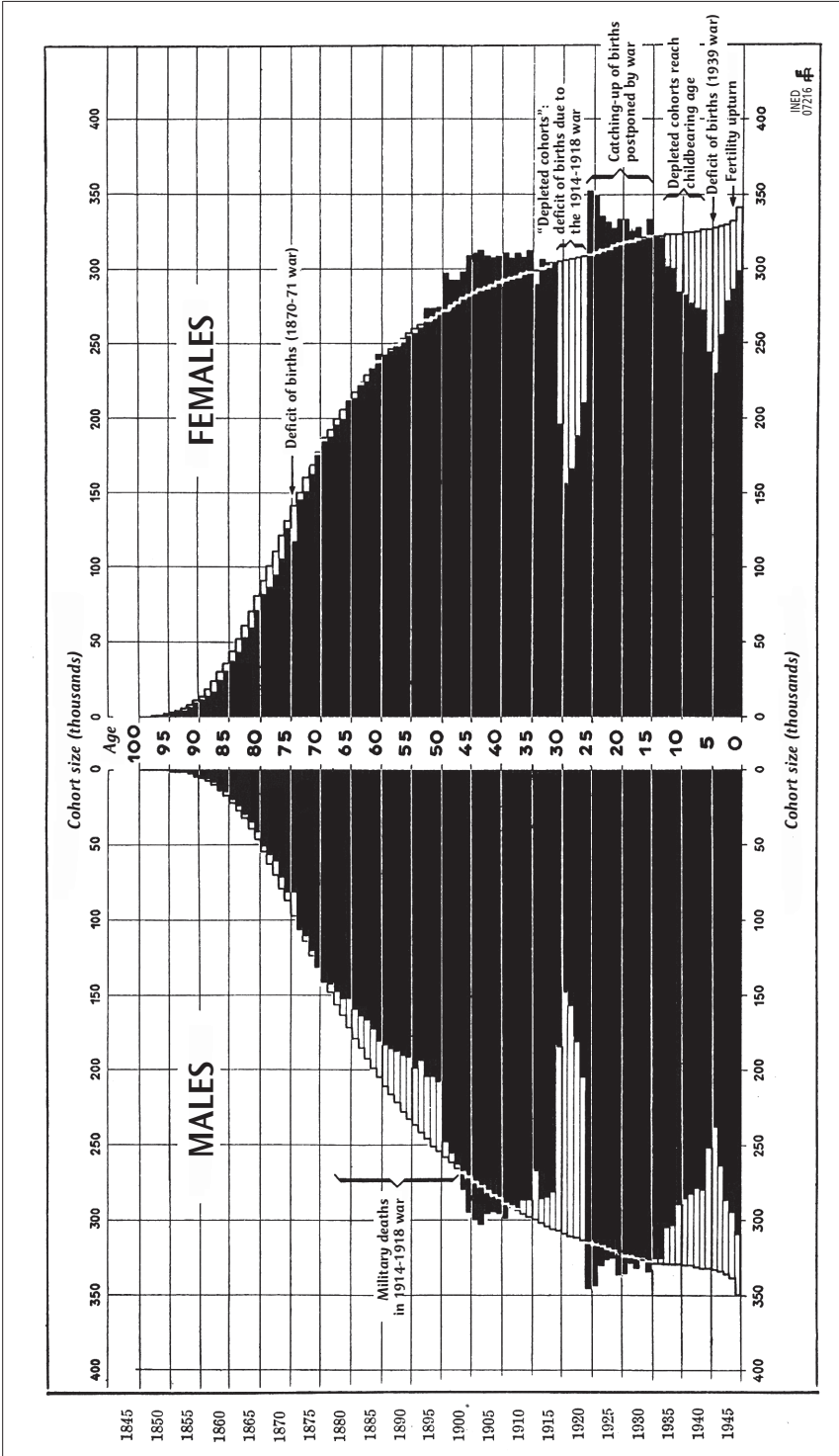
Graph no. V. – *Equivalent retirement ages at different dates: burden of old age*

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populations (R = actual population on 1 January 1946; S = reference stationary population – figures in thousands).

COMPARISON OF THE FRENCH POPULATION (R) WITH A STATIONARY POPULATION (S).

Age group	Males			Females			Both sexes		
	R	S	R–S	R	S	R–S	R	S	R–S
70+	1,062	1,152	– 90	1,610	1,819	– 209	2,672	2,971	– 299
50-69	3,516	4,066	– 550	4,688	4,694	– 6	8,204	8,760	– 556
35-49	4,276	4,183	+ 93	4,578	4,287	+ 291	8,854	8,470	+ 384
25-34	2,334	3,070	– 736	2,469	3,041	– 572	4,803	6,111	– 1,308
15-24	3,312	3,219	+ 93	3,312	3,162	+ 150	6,624	6,381	+ 243
0-14	4,310	4,990	– 680	4,224	4,895	– 671	8,534	9,885	– 1,351
Total	18,810	20,680	– 1,870	20,881	21,898	– 1,017	39,691	42,578	– 2,887

Examination of this table provides us with two particularly clear and vitally important conclusions.

1) Persons aged over 50 years cannot be allowed to enter our country freely. Immigration of this kind would only be conceivable for male workers, to make up for the deficit of men of these ages due to the 1914-1918 war; but these workers would soon become a burden for the working population. They should therefore only be admitted into the country for exceptional reasons: for example in the case of an immigrant worker with his children, if the offspring are sufficiently numerous.

2) The numbers of persons in the 35-49 age group being much larger than those of the stationary population, immigration at these ages would simply exacerbate the irregularities in the age composition of our population. So persons aged over 35 must be excluded from immigration requirements (the age limit for women should even be 30 years, to ensure a balanced sex ratio, given the difference of 3 to 4 years in age at marriage).

3) Immigration must primarily concern persons currently aged 25-35 years (more exactly, 26-35 years for men, and 26-30 years for women) or below age 15. Note that candidates for migration are most often aged around 25 years. It is therefore essential to act as quickly as possible to obtain the adult immigrants that we need. If we failed to seize the opportunities open to us now and in the next two to three years, there is every risk that our options would be limited to very young adults who would simply aggravate the imbalance in our population age structure.

4) Immigration must concern comparable numbers of both sexes. Indeed, contrary to a widely held opinion, the surplus of women is small, except among the generations decimated by the 1914-1918 war, who are no

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longer of reproductive age. This surplus probably does not exceed 150,000 for the 25-34 age group, and is non-existent at lower ages. By planning for a surplus of 200,000 men among immigrants aged 25-34, we can be practically sure that the male surplus will be sufficient to attain the most favourable marriage rates. A surplus of 300,000 immigrant men with respect to women is probably the maximum that can be accepted without adverse effects.

5) We note that the two groups corresponding to our immigration requirements form two successive generations, in the genetic sense of the term (parents-children). This is hardly surprising, given that the appearance of depleted cohorts from 1934 corresponds to the arrival at reproductive ages of the depleted cohorts created by the 1914-1918 war, and that the 1939-1945 war simply superimposed its effects upon the consequences of the earlier conflict. As a result, the most rational solution is to encourage immigration by entire families, with fathers aged 26-35. The children can be educated in France and will thus be assimilated much more easily than if we waited until the period 1960-1970 to receive them on our territory at adult ages.

6) The desirable number of immigrants can be determined with precision purely on the basis of the considerations detailed above. They indicate a need for 1,400,000 or 1,500,000 adults aged 26-35, either accompanied by 1,300,000 or 1,400,000 children aged under 15, or followed around ten years later by an equivalent number of adults of both sexes spread over a decade or so. The first solution, if practicable, is by far the safer and more desirable option. Consequently, as far as possible, the migrant inflow should comprise 600,000 families and 200,000 or 300,000 single men. If families willing to immigrate cannot be found, we would need to maintain a balanced sex ratio, i.e. a total of 600,000 women and 800,000 or 900,000 men. A plan of this kind spread over five years (we have explained above why it would be dangerous to extend it over a longer period) does not appear unrealistic. It would involve, depending on the opportunities provided by both sending countries and the receiving country, the annual admission and settlement on our territory of a maximum of 120,000 families of four people on average and of 40,000 single men, representing a total of around 500,000 people, of whom half are children. The minimum figure under a plan of this kind would correspond to the immigration of adults aged 26-35 only and would total 300,000 persons per year, of whom 125,000 women aged 26-30. Note that in this case, a further immigration wave, involving similar overall numbers (650,000 adults of each sex) would need to be envisaged for the period 1960-1970.

Feasibility of such a plan

Let me reiterate here, as mentioned earlier, that our ambitions are modest and that the figures quoted are no more than a desirable minimum. We are well aware of the benefits of a growing population, and yet we have limited ourselves

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to considering a stationary one. Indeed, we must proceed cautiously, in stages. If, in some years time, our economic and demographic situation so permits, nothing need prevent us from setting our sights on a higher distant objective and from adjusting our population policy accordingly. But this is an area where prudence is required. If, over the period 1946-1950, the number of annual births never falls below 725,000, and if France succeeds in implementing an immigration plan such as the one imagined above, then we may be deservedly satisfied. But would such a plan be practicable? To resolve this problem, let us examine successively the various obstacles to its implementation. Note first that our calculations of the total number of immigrants do not appear to be exaggerated. It is within the bounds of our population's capacity to assimilate new foreigners, especially given that the envisaged immigration is limited in time; this is an immense advantage. In the context of a population policy which – let me emphasize this point, for it is primordial – calls for *an upturn in our birth rate* (that would be facilitated by the immigration of young adults), we should be able, after drawing for the last time upon a source that is drying up, to stand up for ourselves and permanently forego the demographic support of our neighbours who, in turn, will be increasingly reluctant to offer it, because increasingly incapable of doing so. But what are the possible sources of immigration? They are few in number. We can rule out Germany for a start, given the psychological and political obstacles to the assimilation of Germans. Among the countries liable to have population surpluses, we are left with Belgium, the Netherlands, Spain and Italy. For political reasons, we cannot count upon potential Spanish immigration in the immediate future. Belgium could probably send us only a small proportion of the necessary contingents. The Netherlands, on the other hand, could make a considerable contribution to the plan described above, especially as the country has no "depleted cohorts". Dutch people could immigrate as entire families, and they would a represent high-quality agricultural labour force. Unfortunately for us, Dutch farmers enjoy conditions of housing and hygiene that have never been seen in our own rural communities, and that we were unable to offer them before the war to attract them to France. Moreover, this essential precondition appears to be all the more unattainable today.

The main potential source of immigration is Italy, therefore. The country is indisputably burdened by an excess of population and will be obliged to expatriate large contingents of emigrants for the next 20 years at least. Moreover, large numbers of migrants were already moving from Italy to France before the war and, contrary to the case of the Netherlands, the material living conditions that we can offer Italian immigrants are superior to those prevailing in their own country. Unfortunately, the Italian population also has "depleted" cohorts, though just four in number (1916 to 1919) and slightly less "depleted" than our own. But here we have a factor that may oblige us relax somewhat the rules defined here-above (if Spanish immigration were possible, Spain, which had no "depleted cohorts" at that time, could provide us with the additional immigrants needed to

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compensate, at the corresponding ages, for the shortfall of Italians).

France's immigration policy should not face any obstacles on the part of the emigration countries. We sometimes hear the argument that a country that has raised children and sent them abroad when they reach adulthood is entitled to demand financial compensation from the receiving country for the cost of "rearing" these producers. To which the immigration countries can rightly retort that these "producers", in excess in their home country, are simply a burden to the nation, and that they can only be truly "productive" elsewhere. The home country stands to gain from their departure, and the immigration country from their arrival.

The obligation to allude to such controversies is regrettable. Posed in this way, the problem is misrepresented. In reality, an emigration country with a young and numerous population, and an immigration country with an ageing and insufficient population, convey the image of two countries weakened by their demographic situation and possessing complementary populations. Migration is salutary for both. A surplus is a de facto situation, and if the emigration country makes exorbitant demands, it is preferable simply to wait: a solution will soon be found as the status quo is more painful for the overpopulated country than for the other. Only in the event of serious competition between countries with demand for immigrants could the overpopulated ones impose their own conditions. It would appear that we have not yet reached this point, despite recent progress towards a more fair-minded attitude to population problems, because the underpopulated countries are still too thoroughly Malthusian.

We must now examine our country's capacity to receive the desired numbers of foreign immigrants over the next five years. Here too, we are convinced that the difficulties are not insurmountable. In the years following the war of 1914-1918, some two million foreigners entered our country over a ten-year period. One might argue that a mutilated and impoverished country does not have the same receiving capacity today as it had after the last war. That is true for the moment. It is nonetheless already clear that many regions are facing a serious shortage of farm labour. In some industries, in mining especially, there are also numerous job opportunities. As soon as sufficient coal is made available to industry, the entire economy will start to recover, leading to a demand for labour that our national workforce will be unable to satisfy. Last, we must hope that the necessary materials for reconstruction will also become available very soon, in which case the construction industry, likewise, will need to rely upon foreign labour. Above all, especially acute labour shortages will occur in some areas because of the native population's reluctance to move far from its habitual place of work. Immigrants can be directed towards these regions with a view to permanent settlement. And let us not forget that the labour provided by German prisoners will only be at our disposal for a short time to come. Hence, the levels of immigration we have envisaged by no means appear unrealistic, but on

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the contrary, eminently desirable. The largest material difficulties will doubtless arise from the limited possibilities of settlement and housing, which will initially oblige us to orient immigrant flows almost exclusively towards rural regions.
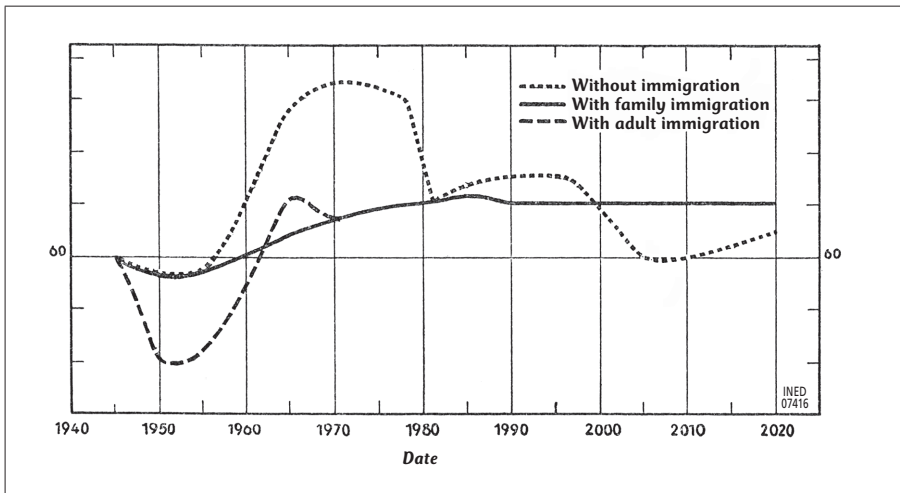
Advantages of immigration

The above-mentioned material difficulties are not the only obstacle. Others also exist, doubtless more difficult to overcome, stemming from the resistance of an ill-informed public opinion that is haunted by the prospect of unemployment and competition for jobs, when the history of the French economy from 1929 to 1939 provides abundant proof that, in our country, these ills are primarily generated by this attitude of Malthusian withdrawal which must give way, once and for all, to a well-oriented policy of economic expansion. To conclude, let us present the advantages to be reaped by the French people from immigration as defined here-above, assuming that the annual number of births is fixed at an unchanging 725,000 for the foreseeable future.

Graph no. VI (similar to Graph no. III) represents, under this hypothesis, a series of equivalent retirement ages. The solid curve indicates the potential retirement age, at each date, corresponding to the basic age of 60 years in 1945, for a constant old-age burden, under the hypothesis of family immigration that we recommend. The dashed line corresponds to the hypothesis of adult immigration in two waves separated by an interval of ten years. The dotted line shows the curve resulting from the hypothesis of a steady annual total of 725,000 births, but in the absence of immigration. We recall, in this respect, how much easier it would be to reach such a figure
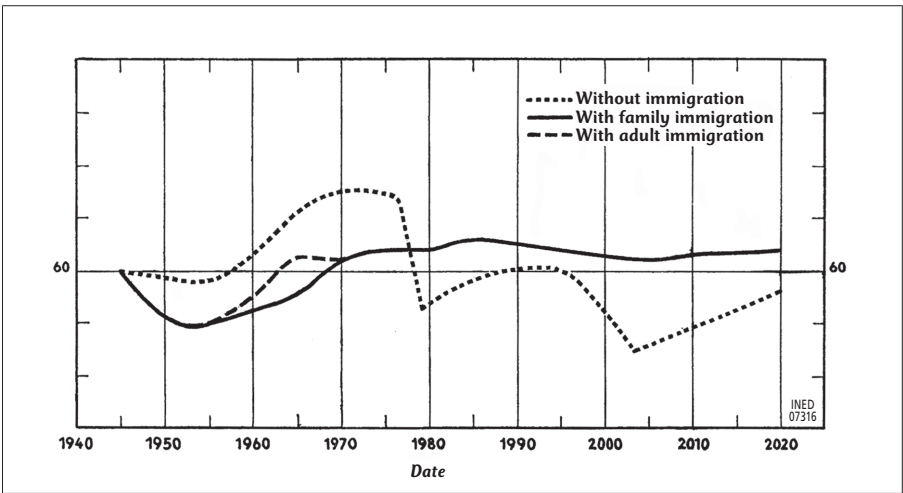
Graph no. VI. – *Equivalent retirement ages at different dates: burden of old age*

POPULATION AGEING,

Graph no. VII. – *Equivalent retirement ages at different dates: total burden*

by means of well-managed immigration. Comparison of the two curves is revealing: thanks to immigration, the irregularities of the dotted curve are smoothed out, and the population becomes a great deal younger in the early years. From 1980 onwards, things are clearly quite different, since we assume that the deficits of the depleted cohorts reaching old age have been offset by immigration. In a few years from now, we will need to decide if a further increase in fertility is necessary to ensure a modicum of population growth (which would lower the right-hand horizontal section of the solid curve) or, on the contrary, if we can content ourselves with a steady figure of 725,000 annual births, which would keep the population stationary.

Up to now, we have only examined the particular case of old-age pensions, but we have seen that the burden of supporting the elderly is only a share of the total burden borne by the working people who must satisfy the needs of all consumers. We can also seek to adjust retirement age, in line with changes in the population age structure, so as to maintain this total burden – rather than that of old-age pensions alone – at a constant level.

We can thus determine new series of equivalent retirement ages, which give a more informative idea of the repercussions of age structure on the general economic situation.

To obtain an accurate indicator of the total burden borne by producers, the needs of each category of consumer would need to be taken into account. The same method could be used to study the functioning of a pay-as-you-go social security system that includes family allowances, old-age pensions and various forms of insurance against risks such as disease, injury, disability, unemployment, etc. For a constant level of contributions, we could then determine the variations in age at retirement resulting from changes in the age structure.

PENSIONS AND IMMIGRATION

As a first approximation, and to illustrate the how immigration can help us in our population "rejuvenation" phase, we will simply measure the total economic burden supported by producers as the ratio of total population to "adult" population. This places us in the hypothesis whereby the economic needs of children and old people are the same as those of "adults", a situation which of course corresponds very imperfectly to current social conditions. This gross approximation is nonetheless sufficient for our purposes.

Graph no. VII gives a visual illustration of the variations in retirement age that would ensure a constant total burden thus defined, under the same hypotheses as here-above. We see, by comparison with Graph no. VI, the extent to which consideration of the old-age burden alone minimizes the considerable support that immigration can provide to a population that is getting younger.
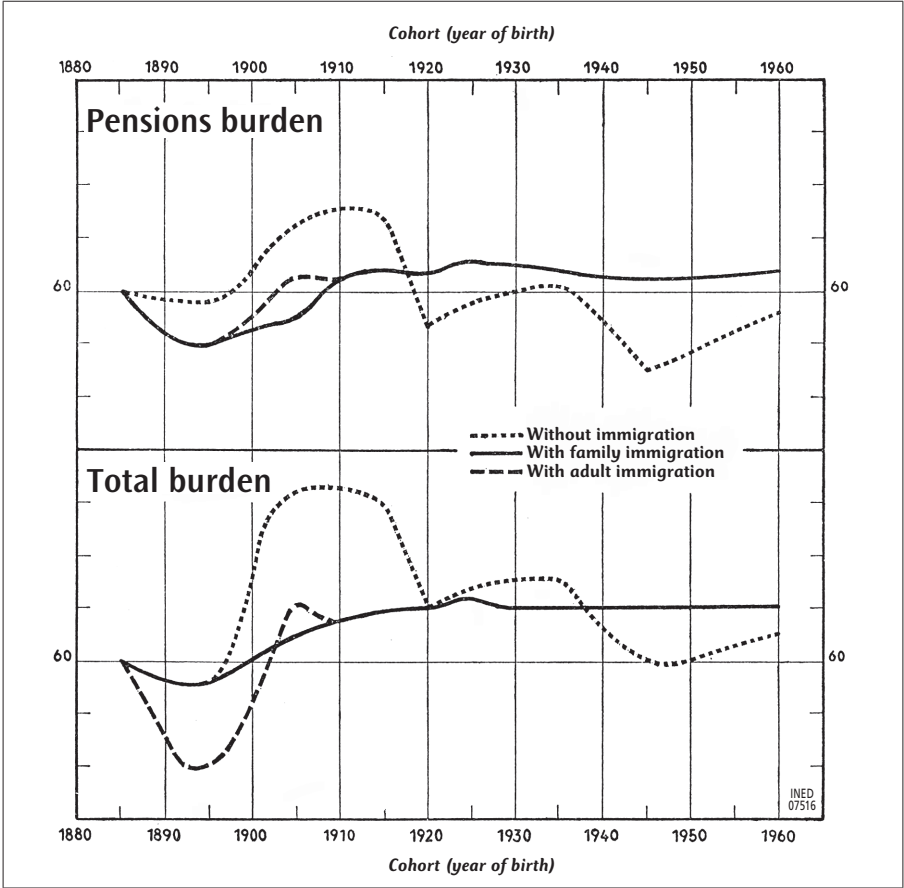
Graph no. VIII. – *Equivalent retirement ages for the various generations: old-age burden and total burden*

POPULATION AGEING,

Graph no. VIII simplifies the comparison. It is plotted like Graph no. IV to give equivalent retirement ages by cohort and not by date. In the upper part, corresponding to Graph no. VI, only the old-age burden is considered. The curves in the lower part, similar to those of Graph VII, take account of the total burden: they illustrate the fact that by coming to work in France, immigrants will help not only to support our old people, but also to raise our children.

Clearly, family immigration is less favourable in the early years than immigration limited to adults, since it increases the burden of dependent children. Its positive influence is more continuous however. If, between 1960 and 1970, we were unable to find the required number of adult immigrants, then the immigration of the next five years, limited to adults only, would be a very poor palliative for our future difficulties, and its advantages would be felt primarily over the following 15 years. But whichever way we look, there is a vital need for immediate immigration if we wish to avoid the difficulties that await us for the period 1965-1975.

Hence, far from considering the foreigners who join them in their workplace as competitors, the French people must welcome them as team-mates who are contributing to the major task of rebuilding our economy and restoring our demographic situation. *Immediate* individual interests may sometimes be in conflict with the general interest. But we must realize that *viewed over our entire remaining lifetime, our individual interest coincides exactly, in this particular case, with the collective interest.* By coming to live in our country, foreign workers will help us to rebuild our broken economy, recover our pre-war standard of living a few years earlier, and consequently – our lifespan being limited – to enjoy the advantages for a few years longer. They will enable us to draw our old-age pension for more years, and even, for the many among us who might die before reaching retirement age, to enjoy some years of rest before our demise. Not only will they help to raise our inadequate birth rate, but thanks to their presence, the children that we have ourselves conceived will grow up in better conditions and enjoy a better future.

Paul VINCENT.