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Outline

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Résumé : *La dépendance concerne les personnes qui ont besoin d'aide pour des activités quotidiennes comme se nourrir, se laver, s'habiller, etc. L'aide aux personnes dépendantes vient principalement de la famille et dans une moindre mesure de professionnels, chez elles ou dans des maisons de retraites. Les gouvernements de la plupart des pays de l'Union Européenne contribuent au financement ou à la fourniture de services aux personnes dépendantes, mais l'ampleur de ces interventions varie fortement d'un pays à l'autre.*

L'offre de services aux personnes dépendantes est actuellement inadéquate, et les perspectives d'évolution sont peu encourageantes, et cela pour trois raisons principales qui ont trait aux évolutions démographiques, sociétales et financières. D'abord, on s'attend à une rapide augmentation du nombre de personnes âgées de plus de 80 ans, qui sont les premières concernées par la dépendance. Ensuite, les évolutions de la société font que la proportion de personnes âgées dépourvues d'aide de leurs proches va probablement également augmenter. Enfin, les coûts financiers engendrés par l'utilisation de services formels d'aide aux dépendants sont élevés et en forte croissance.

Nous étudions dans ce document les avantages et inconvénients des trois institutions qui fournissent ou financent des services aux personnes dépendantes : la famille, le marché et l'Etat. Nous passons en revue les travaux économiques récents sur la solidarité familiale qui montrent notamment que celle-ci n'est pas basée exclusivement sur l'altruisme pur, mais au moins en partie sur des considérations stratégiques (des enfants ou des parents). Nous présentons ensuite les différents facteurs, liés à la demande ou à l'offre, qui expliquent pourquoi l'assurance dépendance privée est actuellement très peu développée. Ces facteurs sont la sous-estimation du risque de dépendance par les individus, l'éviction par l'assurance publique, l'altruisme, les coûts importants de l'assurance et également la présence d'asymétries d'informations entre assurés et assureurs. Nous résumons enfin les quelques contributions d'économie publique qui s'interrogent sur la conception optimale d'un système d'assurance sociale de la dépendance.

Nos recommandations sont basées sur notre opinion que l'Etat devrait assumer une position de meneur dans la réflexion sur les problèmes liés à la dépendance. En raison du niveau d'endettement public actuel, l'Etat devrait s'appuyer autant que possible sur la famille et le marché. Les dépenses publiques devraient être limitées aux personnes dépendantes pauvres ainsi qu'à celles qui ne peuvent faire appel à la solidarité familiale. L'Etat devrait cependant prendre toutes les mesures en son pouvoir afin de promouvoir les objectifs suivants : (I) accroître l'efficacité des marchés d'assurance privés, (II) rendre l'assurance dépendance obligatoire pour les gens de revenus moyens ou élevés, afin d'éviter les problèmes liés à l'anti-sélection et à la myopie ; (III) permettre aux personnes âgées de plus de 50 ans qui le souhaitent de combiner travail et retraite à temps partiels afin d'aider leurs parents dépendants ; (IV) faciliter le financement des services requis par la dépendance au travers de rentes viagères (de type « reverse mortgages ») offertes par des établissements financiers ; (V) améliorer la coordination verticale au sein du secteur public, en particulier entre le niveau central traditionnellement en charge de l'assurance sociale (soins de santé et retraites publiques) et les niveaux décentralisés (Régions, etc.) en charge de l'assistance sociale ; (VI) renforcer la conditionnalité de l'assistance sociale aux revenus familiaux (et non juste individuels) afin de limiter les risques d'éviction de l'assurance privée et de l'aide de la famille par l'assistance sociale.

Pour terminer, nous nous concentrons sur deux objectifs importants que les politiques publiques devraient se fixer : d'une part, aider les proches à combiner travail formel et aide informelle aux personnes dépendantes, et d'autre part, développer le marché assurantiel privé. Le recours aux subventions publiques constitue un moyen parmi d'autres d'atteindre ces objectifs. Ces subventions devraient toutefois être réservées aux personnes les plus défavorisées, ce qui engendre des problèmes traditionnels liés aux aides sous conditions de revenus.

Executive Summary: Long-term care (LTC hereafter) concerns people who depend on assistance for their everyday activities (eating, bathing, dressing, etc.). It is delivered mainly by families in an informal way, and, to a lesser extent, formally by professional care assistants and in nursing homes. The governments of most EU Member States are involved in some way or another in the provision of LTC. However, the extent and nature of their involvement differs widely across countries.

Right now, the provision of LTC is not adequate and its future appears to be gloomy. The source of the problem is threefold: demographic, societal and financial. First, one witnesses a rapid increase of persons aged 80 and above, who constitute the main group concerned by the issue of dependency. Second, the number of dependent elderly who cannot count on the assistance of family members is likely to increase. Third, the financial costs involved by the provision of (formal) LTC services are significant and rapidly increasing.

This paper studies the strengths and weaknesses of the three institutions providing LTC. We provide a broad overview of the recent economic literature dealing with family help. It shows that family solidarity is often based on forced altruism (social norm) or on strategic considerations (reciprocal altruism) rather than on "pure" altruism. Turning to private insurance, we discuss a number of demand and supply characteristics that may explain why private insurance markets are currently so thin. These factors are the underestimation of dependence risks by individuals, crowding out of private by public insurance, altruism, cost of private insurance, as well as reasons linked to the presence of asymmetric information between insurees and insurers. Finally, we survey the fledgling economic literature on the design of optimal public intervention.

We provide policy recommendations based on our view that governments should take the leadership towards a comprehensive approach of the dependency problem. Given the current public debt levels, governments should rely as much as possible on the family and the market. Public financial involvement should be restricted to low income households, and especially those who are deprived from family solidarity. Governments should apply a proactive regulatory policy in various directions: *(I)* to increase the efficiency of the private market, *(II)* to make insurance compulsory for the middle and the upper middle class, thus avoiding problems of adverse selection and myopia; *(III)* to allow working and willing persons aged 50+ to take part time retirement to help ailing parents; *(IV)* to facilitate the financing of LTC through reverse mortgages; *(V)* to improve vertical coordination within the public sector and specifically between the central level traditionally in charge of social insurance (health care and public pensions) and the regional levels responsible for social assistance; *(VI)* to enforce stringent means testing at the family (and not just individual) level to mitigate crowding out of private insurance and family assistance by social assistance.

Finally, we address two specific points: how to thicken the private LTC insurance market, and how to foster the assistance that family members provide to dependent parents. One way, among others, to reach these goals is to provide public subsidies or tax breaks. We think that such subsidies should be restricted to persons with low income, which raises the usual problems associated to targeted transfers.

1. Introduction

Long-term care (LTC hereafter) concerns people who depend on help to carry out daily activities such as eating, bathing, dressing, going to bed, getting up or using the toilet. It is mainly delivered informally by families– mostly spouses, daughters and step-daughters – and to a lesser extent formally by professional care assistants. Formal care is also given in institutions such as care centers and nursing homes. The governments of most EU Member States are involved in some way or other in the provision or financing of long-term care services. However, the extent and nature of their involvement differs widely across countries.

Over the coming decades, the demand for formal care services by the population is likely to grow substantially. Long-term care needs start to rise exponentially from around the age of 80. The number of persons who reach 80 years is growing faster than any other segment of the population in all EU Member States; it is expected to triple by 2060, according to recent population projections. The financial costs of LTC for those in need are also important and increasing. As a consequence, we anticipate additional pressure on the three institutions currently financing and providing LTC services: the State, the market and the family.

These three institutions have their pluses and minuses. The family provides warm and cheap services, well tailored to the needs and preferences of the dependent and that do not need to be financed by recourse to distortionary taxation. The main drawback is that these services are restricted to each individual's family circle. For a variety of reasons, some dependent persons cannot count on family solidarity. The State is the only institution that is universal and redistributive, but quite often its information (concerning for instance the specific needs of individuals) is limited and its means of financing are distortionary. Finally, the market can be expensive particularly where it is thin and does not benefit from public support, and it only provides services to those who can afford it.

In assessing the adequacy of the financing and provision of LTC and in making projections, it is important to bear in mind the extent to which countries will be able in the future to rely on the informal provision of care to the elderly. The bulk of long-term care is indeed provided informally. Informal provision has no direct bearing on public finances but it is not clear that such a situation is desirable, and in any case that it will last. Family solidarity is very uneven and the propensity to provide care to relatives could diminish in the future. This is to be expected due to changes in family structure and the growing participation of women in the labor market.

Currently, the private insurance market for LTC is still negligible with a few exceptions such as France and the US. As for the public sector, very few countries have a formal social LTC insurance program. Notable exceptions are Germany, Belgium and France. Even though they do not have a formal social LTC insurance, many countries devote public resources to the financing of long-term care services, most often at the local level, but the share of GDP devoted to these expenses is small. One may hope that both private and social LTC insurance will grow substantially in coming decades. But there are a number of problems that both the State and the market have to tackle before they can compensate for the expected retreating family solidarity.

Our paper is devoted to these issues. We start with a discussion of the nature of dependency in old age and of the reasons why it is not easy to insure against it. We then survey some of the most recent forecasts regarding future LTC needs. We next turn to the paramount role played by the family. Finally, we examine the factors explaining the paltry role played up to now by both private and social LTC insurance, and discuss the reforms that would allow them to meet future needs.

2. The risk of dependency and its insurability[4]

Loss of autonomy or dependency reflects an inability to perform some of the most basic everyday activities (e.g., getting up, dressing, washing, eating, walking and so on) and the need for assistance in order to carry out such activities. The loss of autonomy is most often associated with old age and should be clearly distinguished from illness, disability and handicap, although these four concepts are not totally independent of each other. Well-accepted grids are used to provide an objective way of measuring the loss of autonomy. In other words, there is a consensus on what is actually included in the LTC needs that should be covered by insurers, public or private. The factors leading to dependency are themselves standard: dementia (25–50% of cases), cancer (15–30%), cardiovascular disease (15–30%), other neuropsychiatric diseases (10–20%), rheumatology (2–10%), accidents (5–10%), and ophthalmic diseases (1–3%). Naturally those different types of dependence call for different types of care.

The demand for social or private insurance depends on individual and social factors, such as

- the demographic trend towards a larger fraction of old age people;
- the probability of loss of autonomy among the elderly population;
- the probability of survival when having lost autonomy;
- the probability (effective as well as perceived) of family support.

The demand for private insurance further depends on the existence of public schemes and conversely the demand for social insurance depends on the availability of private LTC insurance. For an insurer, either private or public, LTC carries three major difficulties.

The first one is the risk of escalating costs. According to some experts, an extension of life span goes hand in hand with an extension of the amount of life spent in a situation of total or partial loss of autonomy.[5] LTC is an emerging risk whose total cost will increase more rapidly than national wealth. This naturally raises the problem of pricing, in so far as the underlying trend is still not properly understood while policyholders themselves are inclined to underestimate this trend. The risk, therefore, is that supply and demand curves for LTC products only meet at a point where the services on offer are very restricted or even inexistent.

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(4) This section is partly based on Kessler (2009).

(5) See, for instance Lafortune and Balestat (2007).

The second problem for the insurer is the phenomenon of adverse selection, which may imply that only people with a high probability of losing their autonomy subscribe to LTC policies. It has been observed that people buying LTC insurance contracts have a higher probability of becoming disabled than those who do not buy such contracts, and that people who discontinue their contracts have a much lower probability of becoming disabled than those who do not.[6] This is a classic health insurance risk.

The third difficulty for the insurer is the possibility of moral hazard. In LTC, moral hazard has less to do with the behavior of the policyholder than with his social environment. The perception of LTC risk is a very recent phenomenon. It does not come from the increasing wealth of society as much as from the rural exodus and the desire for autonomy of both parents and children. Consequently, elderly parents are less and less likely to live under the same roof as their children. This development highlights the extent to which the idea of loss of autonomy is determined by the social perception that we have of such a loss. This social perception has no reason to stabilize over the next few years, and the assessment of needs is susceptible to widely varying interpretations depending on the social climate – in the future, we may consider that having trouble taking a bath constitutes a loss of autonomy in bathing, etc. The major escalation in handicap allowances, which are still experiencing double-digit growth in developed countries, independently of the actual state of health of the populations involved, is a good illustration of what could happen in the future with LTC. If this risk has not yet tended to materialize for LTC, it is because the stakes until now have been low. Once LTC becomes a challenge for society and has its own dedicated rights and laws, the risk of *ex post* escalation (especially through court decisions) of the content of LTC insurance contracts signed years before will clearly become a reality.

To sum up, there is today a wide agreement on how to assess the severity of dependence on the basis of standardized medical tests. Yet, at the same time, there is much less agreement as to the nature of the care that is called for. To put it otherwise, testing the degree of dependence is deemed rather objective; defining the needs corresponding to a given level of dependence is judged highly subjective.

3. Forecast of needs

Forecasting future needs is a daring but necessary undertaking.[7] It requires two steps. First, one wants to know the relative number of dependent elderly in the future. Second, one has to allocate those individuals among the various types of LTC: formal vs. informal, private vs. public. For the first step, we have good forecasts of the future population structure. According to the population

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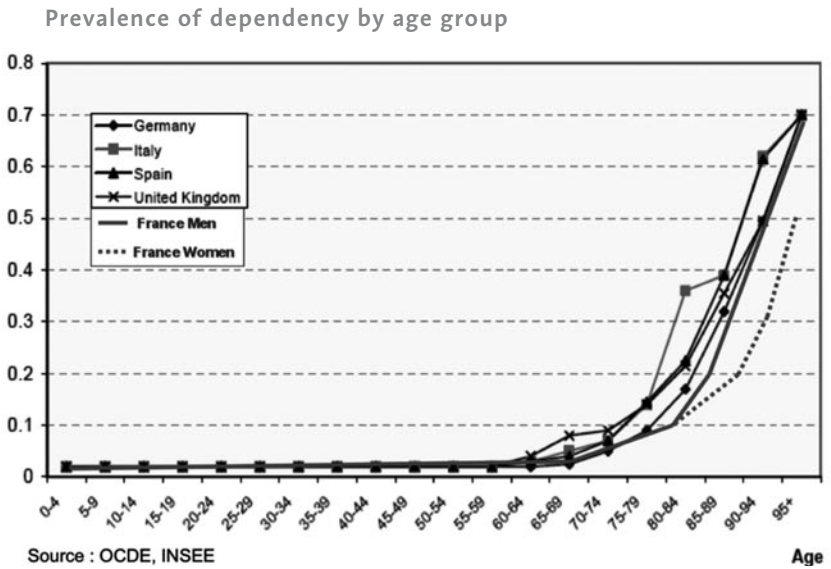
(6) See Section 5 for a longer discussion of both adverse selection and moral hazard problems for LTC insurance.

(7) The main source for this section is EC 2009 Ageing Report (EC 2009). See also Duée and Rebillard (2004, 2006) for long-term forecasts of LTC needs in France.

projection by main age groups for EU27, the old-age dependency ratio, calculated as the ratio of people aged 65+ relative to the working-age population, will go from 25.4% to 53.3% over the period 2008-2060. The dependency ratio of the oldest (people aged 80+ over the working-age population) will increase from 6.5% to 22% over the same period.

EC(2009) then makes a projection of the dependent population (those who need some form of LTC service) by taking the baseline population projection (by age and gender), and by applying age and gender-specific dependency rates (i.e., fraction of people in need of LTC services) in the base year (estimated using existing indicators of disability from comparable sources: SHARE survey, Survey of Income and Living Conditions). Figure 1 shows that dependency rates increase with age, especially for those above 75-year old. In its basic scenario, EC(2009) assumes that the rates of dependency observed in 2007 (for any given age and gender) remain constant over time. This implies that there is no improvement in the dependency status of the elderly population as its longevity increases. In other words, the rate of dependency of a 80-year old in the future is assumed to be the same as that of an 80-year old today. However, there will be more people living up to their 80th birthday in the future than today. Arguably, it is a pessimistic scenario since it assumes that the average lifetime consumption of long-term care services will increase over time. The outcome of this scenario is frightening: in EU27, the number of dependent elderly will increase by 115% over the period 2007-2060; it will increase by 128% for EU10, the "Old Europe". In other words, the number of dependent persons will more than double.

Figure 1 : Dependency rates per age



As we have already mentioned, LTC is provided in different settings: formally and informally. Formal care can be provided at home or in various types of institutions, including nursing homes and long-stay hospitals. Assuming a pure demographic scenario under which the probability, for any age and gender, of receiving formal care at home and formal care in an institution remains constant at the 2007 level, EC (2009) obtains a rather dramatic increase in the demand for all types of care. Specifically, the number of dependent people receiving care in an institution would increase by 185% in EU27 (155% for EU10) over the period 2007-2060; the number of people receiving formal care at home would increase by 151% in EU27 (171% for EU10) over the same period. Finally, the number of dependents relying only on informal care would increase by 84% in EU27 (119% for EU10).

We now turn to the projected public expenditure on LTC presented by EC (2009). Public expenditure is forecasted to increase by 115% on average for the EU27 over the period 2007-2060. The projected increase ranges from 65% in France and the UK to 175% and above in the Czech Republic, Spain, Malta, Poland, Romania and Slovakia. Moreover, extrapolating on the basis of existing policies and expenditures does not capture the full scale of the policy challenge. Other crucial policy questions relate to the evolution in the number of people receiving informal or no care, and whether they will receive the care services they need. Countries with low levels of formal care provision today (and thus low levels of public expenditure) will also witness a very large increase in the projected number of persons in need of care. Pressure is likely to emerge in the future for policy changes to increase formal care provision, especially as the future availability of informal care is likely to diminish. The gap between the need for care and the supply of informal care will increase due to the growing numbers of elderly persons and to a likely reduction in the supply of informal care within households (although the scale of this effect will depend on the employment rates of women, among other factors).

4. The role of family solidarity

Most seniors with LTC needs reside in their or their relatives' home, and rely largely on volunteer care from family members. These include seniors with severe impairments (unable to perform at least four activities of daily living). In addition, many people who do pay for care in their home also rely on some free services. The economic value of volunteer care is significant, although estimates of it are highly uncertain. Whether this solidarity is sustainable at its current level is an important question. Sources of concerns are numerous. Changes in family values, the increasing number of childless households, the mobility of children and the increasing labor participation of women are factors explaining why the number of dependent elderly people who cannot count on family solidarity is increasing. Several empirical studies have shown that the last generation children are less likely to care for an elderly parent than previous generations of children. Furthermore, elderly parents are now more likely to live alone longer and are also more likely to live in an institution such as a nursing home than in the past.[8]

[8] See, for example, Borsh-Supan et al. (1996). See also Bonsang (2008).

An important feature that is often neglected is the real motivation for family solidarity. For long, we have adopted the *fairy tale* view of children or spouses helping their dependent parents with joy and dedication, what we call pure altruism. We now increasingly realize that family solidarity is often based on forced altruism (social norm) or on strategic considerations (reciprocal altruism). In this section, we review some recent work on these issues.

Understanding the determinants of altruism is very important to assess how family assistance reacts to the emergence of private or public LTC insurance schemes. For example, the introduction of LTC social insurance is expected to crowd out family solidarity based on pure altruism but not necessarily that based on forced altruism. In families where solidarity is based on strategic exchanges (bequest or *inter vivos* gifts in exchange for assistance), the incidence of the introduction of a social LTC scheme will be a decline in intergenerational transfers. As we will show below, the issue of crowding out is pervasive. It concerns both the substitutability between family solidarity and formal schemes, and also that between social and private LTC.

What does the economic literature say about LTC and family relations? The classical article on strategic bequests by Bernheim *et al*. (1985) views bequests as a compensation for filial attention. It shows that parents can extract from their children the maximum amount of attention and/or assistance by playing them against each other, using the prospect of inheritance. In this type of model, parents have a hold on the game (and manage to extract the full surplus generated by the bequest in the form of filial attention). At the other extreme, there is the contribution by Konrad *et al*. (2002) who show that some children choose their location in such a way that they will be unable to directly assist their parents in case of dependence. There is a location game with one child ending up living close to his parents while the others are locating far away. Whereas this model seems to fit German data, it does not apply to Japan, according to Kureishi and Wakabayashi (2007).

Hoerger *et al*. (1996) examine the effects of public subsidies on the living arrangements of the disabled elderly who choose between living independently, living in an intergenerational household, and entering a nursing home. Direct subsidies for nursing home care and State policies which limit nursing home beds or reimbursement significantly affect the choice of living arrangements. State policies which subsidize community living (*i.e.*, living outside of nursing homes) have little effect on nursing home entry. However, they increase the probability of living independently. Sloan et al. (1997) show that U.S. *Medicaid* subsidies have not "crowded out" informal care provided by relatives and friends of the dependent elderly, and that they have not reduced wealth accumulation by the elderly either. They find little empirical support for the hypothesis that care giving by children is motivated by the prospect of receiving bequests from their parents.

Pezzin *et al*. (2008) are concerned by whether the presence of adult children affects the care elderly parents provide to each other. They develop two models in which the anticipated behavior of adult children provides incentives for elderly parents to increase care for their disabled spouses. These models rely on two effects: demonstration and punishment. The "demonstration effect" postulates that adult children learn from a parent's example that family care giving constitutes an appropriate behavior. The "punishment effect" assumes that adult children may punish parents

who fail to provide spousal care (by denying them future care). Consequently, joint children act as a commitment mechanism, increasing the probability that elderly spouses will provide care for each other. Stepchildren with weak attachments to their parents provide weaker incentives for spousal care than joint children. Using data from the U.S. Health Retirement Survey, Pezzin *et al*. (2008) find evidence that spouses provide more care when they have children with strong parental attachment.

Pezzin *et al*. (2006) use a two-stage bargaining model to analyze the living arrangement of a disabled elderly parent and the assistance provided by her adult children. The first stage determines the living arrangement. The parent can live in a nursing home, live alone in the community, or live with any child who has invited coresidence. The second stage determines the assistance provided by each child in the family. A key assumption of their model is that family members cannot or will not make binding agreements at the first stage regarding transfers at the second stage. Because coresidence is likely to reduce the bargaining power of the coresident children relative to their siblings, coresidence may fail to emerge as the equilibrium living arrangement, even when it is Pareto efficient. That is, the outcome of the two-stage game need not be Pareto efficient.

Hiedemann and Stern (1999) describe a strategic bargaining process within the family, which determines how care is provided for an elderly parent. They estimate the parameters of the model using data from the U.S. National Long-Term Care Survey and they find that their model is consistent with the data.Stern and Engers (2002) present two structural models of how families decide who should care for elderly parents. The first one is collective in the sense that the entire family participates in the decision, while the second one is voluntary in that family members can refrain from participation. They also use data from the National Long-Term Care Survey to estimate and test the parameters of both models. The results provide some support for each model specification and slightly favor the voluntary model over the collective one.

This rapid overview shows that family solidarity is important but that it is not always based on pure altruism but rather on various strategic considerations. Consequently, conclusions drawn from models which assume pure altruism have to be considered with great care.

5. The LTC insurance market puzzle

For years, researchers have been puzzled by the fact that so few people purchase lifetime annuities for their retirement portfolios. Rational theories have been proposed, but none can fully explain the small size of the actual market. This phenomenon has been called the annuity puzzle. In the same vein, one can be surprised by the very low demand for LTC insurance, which cannot be explained by traditional lifecycle theories. The market is relatively thin in most countries. There are two exceptions: the US with 6 millions insurees and an experience of 25 years and France with 3 millions insurees. As for the annuity puzzle, we need to consider a whole array of reasons, including psychological and behavioral ones, in order to solve the LTC puzzle. We now discuss a number of such factors, empirical as well as theoretical.

• Underestimation of dependence risk

Most people underestimate the private cost of dependency and overestimate the amount of benefits (see Cutler, 1993). There is also a tendency to underestimate the probability of becoming dependent, even though this probability may effectively be large. For instance, in the U.S., a person aged 65 has a probability of 43% to end up in a nursing home (see Kemper and Murtaugh, 1997). Moreover, the duration of these stays when they occur is typically longer than expected (see Murtaugh et al., 1997).

• Crowding out by social assistance

There is the widespread argument according to which social assistance (Medicaid in the case of the U.S.) would crowd out private insurance (Norton, 2000). Sloan and Norton (1997), on the basis of two surveys (*Asset and Health Dynamics* and *Health and Retirement Survey*) observe a negative correlation between Medicaid availability and the purchase of private LTC insurance. According to Brown and Finkelstein (2004b), the existence of a last resort payer like *Medicaid* reduces (even an actuarially fair) private insurance market by two thirds. They show that for men (women) with median assets, 60% (75%) of contributions to private insurance are redundant with *Medicaid*. On the other hand, Brown et al. (2006) show that, if the *Medicaid* resource test ceiling were raised by $10,000 per year, private insurance coverage would only increase by 1.1%.

• Adverse selection

Elderly people appear to have better information than the (public or private) insurance provider as to the occurrence of dependency (see Norton, 2000). It has been observed that people buying LTC insurance contracts have a higher probability of becoming disabled than those who do not buy such contracts (Finkelstein and McGarry, 2003). Similarly, people who discontinue their contracts have a much lower probability of becoming disabled than those who do not (see Finkelstein et al., 2005). This is a classic health insurance adverse selection problem. Sloan and Norton (1997) find a positive correlation between the subjective probability of entering a nursing home and the probability of purchasing LTC insurance.

• Moral hazard

Ex ante moral hazard does not appear to be observed within the context of LTC insurance (see on this Grabowski and Gruber, 2007). However, *ex post* moral hazard seems to be frequent. This is because the assessment of needs and not the determination of the severity of dependence is open to controversy. As Kessler (2009) argues, one can easily verify how severe the loss of autonomy is considered to be. What is less observable is the level of assistance deemed to be normal in relation to a certain loss of autonomy. This has lead the French insurers to offer a lump-sum reimbursement, as opposed to the American policy of reimbursing real expenses (see also Eckhoudt *et al.*, 2003).

• Altruism

LTC insurance reduces the cost of institutionalization and thus will not be bought by parents who want to be aided by their children in case of dependency (see Pauly, 1990). Whether the parent is altruistic or not matters a lot. If he is altruistic, he will buy LTC insurance to avoid burdening his

spouse or children in case of dependency (see Pauly, 1996). If he is not altruistic, he will use his estate to obtain assistance from his children and thus will not purchase LTC insurance (see Norton, 2000). Courbage and Roudaut (2008) using the French SHARE data show that being married and having children make it likelier to purchase private LTC insurance.

• Cost of LTC insurance

Total costs for severe loss of autonomy in France are estimated around € 35000 per year per patient (see de Castries, 2009) and can be even significantly higher in the case of Alzheimer's disease. AHIP (2008) estimates that the average US nursing home costs $ 75000, while Prudential (2008) shows that average costs for LTC services have increased over the past two years (by up to 13 % for assisted living facilities) and are expected to continue to rise (see also Taleyson, 2003). According to Cutler (1993), 91 % of non insured people find LTC insurance too costly. One factor contributing to making the insurance expensive is that elderly people tend to postpone as late as possible their purchase, so as to get better information on the appropriate policy and on its cost (see Meyer, 1999). Brown and Finkelstein (2004a) show that a typical LTC insurance policy purchased at age 65 has a 0.18 *load factor* (defined as one minus the ratio of the expected present value of the benefits over the premium). They also observe that load factors differ considerably across individuals or groups of individuals. For instance, they find load factors of 0.44 for men and 0.04 for women with about the same rate of participation.

6. Social LTC insurance: The "fifth pillar"

There are very few countries with explicit LTC social insurance programs. Among these happy few we find France, Germany and Belgium (Flemish region). Furthermore, these three programs are not very generous: they only cover a small fraction of LTC cost (typically 500 € per month in Flanders) and yet their sustainability is uncertain. The most developed of these schemes, the German one, was introduced in 1995 and has been coined the "5th pillar" to the social security system[9]. This LTC insurance covers the risk of becoming dependent on nursing care and is provided by the same entity as health insurance. If the individual is covered by State health insurance, he automatically has long-term care insurance. If he has private health insurance and is entitled to general hospital care, he also has private long-term care insurance. As for health insurance, State long-term care insurance is financed through contributions of 1.7 % of gross salary (which is directly withheld by employers).

To be fair, besides these three countries, in most others, health care systems cover the medical aspects of dependence and the assistance side of social protection provides means-tested LTC nursing services. The best known example of that is the American *Medicaid*.

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[9] The first four are : health, family, unemployment and retirement.

Medicaid, like other public programs, is alleged to discourage the development of an efficient market for LTC insurance. As we have seen above, there is some work on this issue, mostly empirical. There is little theoretical work on the issue of social LTC insurance and specifically its appropriate design. To approach this issue, one has to consider a social planner with some objective function comprising equity and efficiency aspects. This planner takes the supply and demand responses of individuals and the behavior of families and private insurers into account. If by any chance market forces and family solidarity yield a desirable outcome, then our central planner does not intervene. If not, some form of regulation or the provision of social LTC insurance may be appropriate.

A few studies have addressed this issue. Jousten *et al*. (2005) focus on families with different levels of altruism. Given the cost of public funds, the central planner tries to induce the more altruistic families to assist their dependent parents and to restrict aid to the dependent elderly whose children are less altruistic. This may imply a suboptimal quality of public LTC, compared to the first-best level. Pestieau and Sato (2007, 2008) study the problem of evenly altruistic children who differ in their earning capacities (wages) and thus in the opportunity cost of the time spent assisting their dependent parents. In case of parent's dependency, the more productive children tend to provide financial help whereas the less productive children offer their time. Parents who have sufficiently large pensions or other resources and who do not expect enough assistance from their children purchase some private insurance. The social welfare maximizing government can subsidize family assistance and/or private insurance. It can also directly provide nursing services. The appropriate policy is shown to depend on the loading cost of private insurance, the cost of public funds and the wealth of the parents. Finally, Pestieau and Sato (2009) consider a society segmented into altruistic and non altruistic families and also into poor and rich families. Private insurance is available. In a world of perfect information, a redistributive government helps the low income families. In altruistic families, the dependent parents are taken care of by their children. In non altruistic families, if needed, parents are given the means to purchase private LTC insurance. Pestieau and Sato then introduce asymmetric information while making two assumptions. First, in case of dependency, insurance companies provide a lump-sum reimbursement that is not equal to actual costs incurred but to an average value of these costs and, second, social insurance is restricted to a (possibly nonlinear) subsidy of the private insurance premium. They study the shape of this nonlinear subsidy in a setting where neither incomes nor altruism are observable by the social planner. The main result is that asymmetric information implies less redistribution towards the two target populations: the poor elderly with non altruistic children and the poor altruistic families.

Let us conclude this section by addressing a more practical issue, namely the mode of financing of this fifth pillar. Two questions can be raised in that respect. Should benefits be earnings-related or independent of earnings? Should the scheme be funded or unfunded?
Given that the main motivation of government intervention is redistribution, it seems that benefits should depend on the severity of dependence but not on the level of contributions. The type of financing one could think of is a flat tax on all types of income. As to the question of funding, one should avoid the type of implicit indebtment of unfunded pension plans. If the bulk of the LTC social insurance is to be paid by earnings, that is by the active generation, funding is clearly the

right option. If instead most of the revenue comes from the population of retirees, then funding can be avoided given that the contributors and the benefiters of the LTC scheme belong to the same cohort.

7. Policy Recommendations

Right now, the provision of LTC is not adequate and the future appears to be gloomy. The source of the problem is threefold: demographic, societal and financial. First, we witness a rapid increase in the number of people aged at least 80. The issue of dependency arises precisely in that age bracket. Second, with drastic changes in family values, the increasing number of childless households, the mobility of children and the increasing rate of activity of women, particularly those aged 50-65, the number of dependent elderly people who cannot count on the assistance of anyone is likely to increase. Third, the financial costs involved by the provision of (formal) LTC services are important and increasing. Significant individual wealth is needed to cope with the financial requirements of LTC. Those three parallel evolutions explain why there is mounting demand on the government and on the market to provide alternatives to the family. But it is not clear that the reasons that explain why the role of the State and the market has been so small up to now will suddenly disappear.

We have discussed the nature of these causes and the extent to which we can expect them to fade away. The solution to LTC financing and provision relies on the joint intervention of the market, the State and the family. It requires bold public authorities, willing to adopt policies that welcome and even foster the intervention of both the market and the family. Solutions exist, but they will not bring us to the first best optimum. The fact that individuals act opportunistically and that they will then hide both characteristics and actions that can be used by private insurers and the government cannot be avoided.

We believe that governments should take the leadership towards a comprehensive approach of the problems of dependency. Given the current levels of public debt, governments should try to rely as much as possible on the two other actors, namely the family and the market. Public financial involvement should be restricted to providing LTC to low income dependent and to those who are deprived from family solidarity. It could have a proactive regulatory policy in various directions: (i) to increase the efficiency of the private market, (ii) to make insurance compulsory for the middle and the upper middle class, thus avoiding problems of adverse selection and myopia; (iii) to allow working and willing men and most often women aged 50+ to take part time retirement to help ailing parents; (iv) to ease reverse mortgages to finance LTC; (v) to ensure a better vertical coordination between the central level traditionally in charge of social insurance (health care and public pensions) and the regional levels responsible for social assistance (vi) to avoid through tough resource testing at the family (and not just individual) level any crowding out of private insurance and family assistance by social assistance.

We conclude this list of recommendations by discussing two points: the subsidization of private LTC with the objective of thickening that market, and the subsidization of family members in order to foster their assistance to dependent parents.

Like for the annuity market, much can be done to "thicken" the LTC insurance market. One way to proceed may be to extend tax breaks to private LTC schemes. Tax breaks are costly; this is why they are called tax expenditures, and in times of financial strains their granting should be strictly based on efficiency or equity grounds. One has in mind the system of private pensions that benefit from tax exemptions in almost all countries. These exemptions are often questioned given that pension benefits are skewed toward more affluent households, who would be more likely to be saving adequately for retirement even without them. Moreover, empirical research indicates that those tax advantages have little incentive effect on the purchase of private pensions. The same reasoning applies to LTC insurance. There is no good argument to grant tax breaks on the purchase of LTC insurance by the (upper) middle class and even less by the well-to-do.

There might be a good theoretical argument to subsidize the purchase of LTC by low-income households in a progressive way, namely in such a way that the subsidy decreases as the income of the insuree increases. Such subsidies would be justified under two conditions. First, their costs should not exceed the costs of direct public provision of LTC services. Second, such subsidies would depend on the resources of the individuals concerned; this in turn implies effective testing of the household's income. It is well known that income testing schemes are often accompanied by understatement of resources and strategic impoverishment. Without serious and reliable monitoring of income, the scheme can be very costly and implies unbearable situations of horizontal inequities.

Regarding family solidarity, there are measures (part time, tax deduction) that can be taken to facilitate combining work and assistance. It is important to remember that family solidarity is crucial but should rest as little as possible on forced altruism. Finally, the government can intervene not only indirectly by fostering private insurance and family assistance, but also directly by providing all sorts of services. One above all needs a real political will. Even though we are all threatened by dependency, LTC remains an unattractive political issue, if for no other reason that no one likes thinking about his potential future dependency. We hope that this will soon change.

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Providing sustainable long term care: A looming challenge

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Long-term care (LTC hereafter) concerns people who depend on help to carry out daily activities. It is mainly delivered informally by families and to a lesser extent formally by professional care assistants and nursing homes. Most EU governments are also involved in some way in the provision or financing of LTC services. Right now, the future of LTC provision appears to be gloomy, for demographic, societal and financial reasons. This TSE Note studies the strengths and weaknesses of three institutions providing LTC services - namely the family, the State and the private insurance market - and provides policy recommendations based on the view that governments should take the leadership towards a comprehensive approach of the dependency problem, while relying as much as possible on the family and the market.

(*) Versions longues du résumé en français et en anglais disponibles dans le document

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