

Läufer, Ines

Working Paper

Another perspective on the high uninsured-rate in the USA: Crowding out of long term health insurance by the institutional setting of the U.S. health insurance system

Otto-Wolff-Discussion Paper, No. 02/2014

Provided in Cooperation with:

Otto-Wolff-Institut für Wirtschaftsordnung (owiwo), Köln

Suggested Citation: Läufer, Ines (2014) : Another perspective on the high uninsured-rate in the USA: Crowding out of long term health insurance by the institutional setting of the U.S. health insurance system, Otto-Wolff-Discussion Paper, No. 02/2014, Otto-Wolff-Institut für Wirtschaftsordnung (owiwo), Köln

This Version is available at:

<https://hdl.handle.net/10419/107932>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



Otto-Wolff-Institute for Economic Politics

Director: Prof. Achim Wambach, Ph. D.
Managing Director: Dr. Steffen J. Roth

Another perspective on the high uninsured-rate in the USA: Crowding out of long term health insurance by the institutional setting of the U.S. health insurance system*

Ines Läufer

**Otto-Wolff-Discussion Paper 02/2014
(September 2014)**

*An Abstract of this paper was admitted for the „78 th International Atlantic Economic Conference” in Savannah, GA (12th to 15th of October 2014)

Abstract

In the USA, previous to the implementation of the Affordable Care Act, about 50 million people under 65 years didn't have any (private or public) health insurance. A lot of them have been temporally insured via an employer sponsored group insurance. Because of the linkage to the job, group insurance does only provide an incomplete protection against long term health costs. Alternatively, an individual guaranteed renewable contract allows for long term protection. This paper considers the possible options of a young, still good risk person. A person who is a high risk today could have been a healthy and low-risk person in the past. *This article analyses essential factors explaining the attractiveness of group insurance compared to an individual long term contract. If the group insurance goes along with the abandonment of long term contracts, it can contribute to a high level of temporarily non-insured persons.* As the price gap between employer-sponsored group insurance and individual guaranteed renewable contracts is partly state-induced, non-insurance can also be the result of a state-induced crowding-out of long term protection.

JEL-Classification

110 Analysis of Health Care Markets

130 Health Insurance, Public and Private

180 Health: Government Policy; Regulation; Public Health

Contact:

Ines Läufer

Institute for Economic Policy at the University of Cologne

Pohligstr. 1

D-50969 Cologne

Germany

E-Mail: laeufer@wiso.uni-koeln.de

Table of Contents

1.	INTRODUCTION	1
2.	PREVIOUS LITERATURE	2
3.	THE INDIVIDUAL RISK OF HEALTH CARE COSTS: REDUCED BY COLLECTIVE INSURANCE FRAMES	10
4.	THE PRIVATE INSURANCE OPTIONS DIFFER IN TERMS OF INSURANCE OF PREMIUM RISK: EMPLOYER-SPONSORED GROUP INSURANCE VERSUS INDIVIDUAL LONG-TERM INSURANCE	11
5.	TAKE UP OF EMPLOYER-GROUP INSURANCE AS RESULT OF LOW MARGINAL COSTS	13
6.	COMPARISON OF FULL COSTS OF EMPLOYER-GROUP INSURANCE AND LONG-TERM INDIVIDUAL CONTRACT: PARTLY STATE-INDUCED COST-ADVANTAGE OF EMPLOYER-GROUP INSURANCE	14
6.1.	Group averaged premiums in employer-sponsored insurance do not necessarily induce adverse selection	15
6.2.	Economies of group purchasing	16
6.3.	Employer-group insurance: saving the costs of individual risk underwriting	17
6.4.	Individual insurance does not have a relative disadvantage due to „lock-in“	18
6.5.	Exclusive tax sponsoring of employer-group insurance	19
6.6.	Reduction of individual planning horizon in the U.S. health insurance system: long-term health insurance contract gets less attractive and expensive	20
7.	PURCHASE OF AN OPTION ON HEALTH INSURANCE COULD ALLOW TO CLOSE THE GAP, BUT REQUIRES ADAPTING PREMIUMS TO THE “IN- AND OUT” WITHIN EMPLOYER-GROUP INSURANCE	23
8.	CONCLUSION AND POLITICAL IMPLICATIONS	25
	REFERENCES	28

1. Introduction ¹

In the U.S., prior to the introduction of the 'Affordable Care Act' by president Obama, 50 million people under the age of 65 were neither covered by private health insurance nor by the social health care system 'Medicaid'. Whether this number of uninsured people poses an issue and if so why, is a heated ongoing controversy in the U.S. Key focus of President Obama's reform is the reduction of the number of uninsured people. Main elements of the reform are a health insurance mandate and the strict regulation of private insurance premiums. Right from the beginning, this initiative was accompanied by strong protests and led to controversial discussions in the public and politic arena.

The debate about the reform seems to shift the attention away from the fundamental question regarding the reasons that have led to the current level of uninsured people lying in the health insurance system before the Affordable Care Act. Two observations are striking: First, the income level of many of those uninsured people is well above the poverty threshold of the U.S.

Obviously it is not just the poor or the people with a minor income who have no health care coverage (Kunreuther/Pauly/McMorrow 2013, pp. 246-250.): Even in households with income above 300 percent of the poverty line, 11.6 million people have been uninsured, corresponding to twenty-six percent of the total uninsured (Pauly 2010 p. 11). It is worth noting however, that health insurance premiums can be unaffordable even for people with a higher income in case of pre-existing conditions. If individual health insurance premiums are risk-dependent, those pre-existing conditions go along with high premiums.

Second, not all of today's uninsured persons have been without health insurance all the time.² Many of them have had health insurance at some point through the group insurance of their employer, which they lost either as a result of a job change or a job loss. The "*Commonwealth Fund Health Insurance Tracking Survey of U.S. Adults, 2011*" concluded that "losing or changing jobs was the primary reason people experienced a gap" (Collins et al. 2012).

¹ I thank Rob Lieberthal, Achim Wambach, Steffen J. Roth, Christine Arentz and Leonard Münstermann for worthwhile comments and discussions.

² The Commonwealth Fund 2014, <http://www.commonwealthfund.org/Publications/Issue-Briefs/2012/Feb/Income-Divide.aspx>

Employer sponsored health insurance fails to provide a sustainable protection against the financial risk of health issues, because the coverage is dependent on the workplace. Losing the job goes along with loosing insurance. In this case, a medical condition which was developed during the period of insurance via the employer would be considered as a pre-existing condition in case of an afterwards closed individual insurance contract. It would then lead to higher individual insurance premiums, which can be prohibitively high, or to a lower scope of benefits.

As this is a substantial (income and health) risk, one would expect that risk-averse people protected themselves early enough against those negative long run consequences. Compared to the European situation, the fact that a long term protection is not effective in the U.S. is stunning. Long term insurance contracts are prevalent for most individuals in Europe and have been in place e.g. in Germany already long before health insurance was mandated.

2. Previous literature

Literature on high-non-insurance rate in the U.S. analyzes separately the determinants of the (non-)insurance rate on different markets (Employer-sponsored group or individual) and different target groups (low risk people, high risk people, low income people).

High-Risk People

One part of the non-insurance rate is shaped by the high risk persons and this constitutes the focal point of the policy reform debate (Swartz 2006; Blumberg/Nichols 2004). As the employer-sponsored insurance is broadly seen as better insurance in terms of pooling lower and higher risk people in favor of the higher risks (Gruber 2011; Swartz 2006; Pauly 2010), the “performance” of the individual health insurance market is key issue. Insurers’ risk rated premiums and the exclusion of pre-existing conditions are considered as barrier for the high risks, which explains the non-insurance of the high-risks (Swartz 2006; Buntin/Marquis/Yegian 2004, p. 81 f.). This is caused by the insurers’ risk rating, which excludes people with the high risks, who have the “greatest demand for insurance” (Buntin/Marquis/Yegian 2004, p. 81). The need for premium risk rating to avoid adverse selection in a narrow market is considered a result of a low de-

mand of low risk people in a voluntary market – at the expense of the high-risk persons, who have to pay high, therefore often unaffordable premiums (Swartz 2006, p. 8; Blumberg/Nichols 2004, p. 49 f.). In consequence, policy debate and policy proposals focus on the question of how to integrate high risk people into the insurance market.

The effect of premium-regulation to market contribution of low risks was a key issue in policy debates (Pauly/Nichols 2002, w325). Community rating is often regarded as an instrument to permit access to insurance for high risks, but is debated controversially due to negative side-effects (Pauly 2010). Research on effects of state's regulation (aiming at pooling risks with restrictions on premium differentiation) and concludes that they do not allow for overall increase of insurance rate (Blumberg/Nichols 2004; Pauly 2010). However, following empirical studies, the insurance rate of the high-risk people could be increased (Pauly 2010, p. 25; Chollet 2004).

Individual Market, low risk people

Besides the political focus on the non-insurance of the high risks, empirical research analyses if adverse selection arises in the individual health insurance market. Adverse selection could lead to a low demand or withdrawal of low-risk persons from the health insurance market. Empirical studies conclude that a market wide adverse selection does not occur as the insured population is healthier than the average population (Chollet 2004; Pauly/Nichols 2002).

Additionally, in (the few) states where there is a ban on individual risk underwriting, a withdrawal of lower-risk persons could be identified (Pauly 2010, p. 25). Other studies conclude that insurance rate is not affected at all (Chollet 2004).

Research on demand of individual insurance contracts mostly takes an empirical approach, aiming at estimating the price elasticity of the demand. This requires measuring the relevant premium and dealing with the problem of endogeneity as personal characteristics reflected in the premium at the same time influence demand (Blumberg/Nichols 2004, p. 84).

Employer-Group-Insurance

Bundorf/Herring/Pauly (2010) focus on the employer group insurance. First, they point out the lack of a theoretically clear conclusion about the relation between health risk and the insurance status: On the one hand, one expects people with a higher risk to be

willing to pay more for the same insurance level than people with a lower risk. On the other hand, due to income constraints, the purchase of insurance by a higher-risk person could be limited due to non-affordability. Based on their conclusion of a literature review that “neither theory nor empirical evidence provides a clear picture of the relationship between health status and insurance coverage in the employer sponsored health care system” (p. 3), they analyze possible correlations of health status and insurance in the employer-group insurance. The correlation between risk and coverage via employer is relevant as group-insurance goes along with group-averaged premiums and therefore with a different insurance price relative to individual health risks. They offer several models of insurance purchasing which imply that if there is any correlation between health risk and coverage via employer, it is low risks rather than high risks which remain uninsured. The effect depends on the opt-out options for low risk employees and the costs of switching the workplace.

However, Bundorf/Herring/Pauly (2010) argue that the low-risk person’s rejection of group insurance could go along with a corresponding compensating purchase of individual health insurance. They model the employee’s insurance purchasing decision by considering the incentives to search for a job with or without group insurance, depending on the risk type – without taking into account the options available in individual health insurance market. They argue that the low risks employee could prefer forgoing group insurance and instead purchase individual insurance. However, the effect of group-averaged premiums on the low-risks insurance rate also depends on their alternative in the individual market. As premiums are not actuarial fair and contain a loading, the individual market purchasing decision can only be understood if one compares their actual alternatives, taking into account differences in costs and benefits. This article will do so and points out in which way the institutional setting of the U.S. health insurance systems impacts the costs and benefits of individual long-term contracts.

Other authors focus on the development of the group insurance system. The motivation behind it is primarily the appreciation of group insurance as having positive effect on the insurance rate (Swartz 2006; Gruber 2011). In consequence, the trend of reduced access to group insurance, either in form of decreasing offering rates or higher employee contributions is regarded as a problem and initiated research on the reasons behind it. Considering the development of the employment structure on a macro level, the ongoing trend of a decline of manufacturing jobs and a rise of the share of employees in smaller

firms (Swartz 2006, p. 3 f., p. 58 f.; Gould 2012; Blumberg/Nichols 2004) is considered as a factor reducing the coverage rate in employer-group insurance. But shifts in employment alone do not already allow conclusions on the actual causality: What determines offering rates of smaller and larger firms? What is the effect of the change of health care costs and premiums? Studies of the determinants of employers' offering group insurance often focus on the price-elasticity: To estimate the effect of premiums on offering and take-up and therefore to explain the relevance of increases of premiums for explaining decreasing coverage by employers, empirical studies analyse the employers' offering elasticity (an overview in: Gruber/Lettau 2004, Finkelstein 2002 and Cutler 2002) and the effect of the employee contribution on employee's take-up decision (for an overview see Gruber/Washington 2005; Cutler 2002).

In his article, Gruber (2008, p. 590) summarizes, that empirically, take up does generally not respond to prices charged to employees for insurance. He refers to studies of Chernew et. al (1997) and Blumberg et al (2001) (which might have some methodological problems) and he refers to a study of Gruber / Washington (2005), surmounting these problems – but nevertheless, estimating low take up elasticities. Cutler (2003) estimates a larger elasticity, still not large, but explaining some of the observed decline in the take up of employers sponsored insurance.

However, the design of those studies cannot allow estimating the relevance of insurance premiums to employees: First, studies of employees' price elasticity consider employees, who have already chosen the working place. Of course, for those employees the relevant price to consider is only the employee share. But beside an employee premium, for an employee, the employer-sponsored insurance remains a highly subsidized product if the employer shifts the costs to all employees via an overall reduction of wages independent of their take-up decision. Therefore, if the employee takes up insurance, he only has to pay the comparatively small amount (compared to the whole costs of insurance) and therefore the opportunity costs of forgoing employer-insurance are high. The low price elasticity certainly is a function of the binary decision: The employee cannot gradually adjust insurance coverage, but only take it or forego it.

Therefore, if employers offer health insurance to attract workforce in a competitive labour market, to analyse the "real" price elasticity of employees, one should do empirical research on the question, to what extent employees accept lower wages as a price for

health insurance benefits offered by the employer when they are choosing their employer.

Additionally estimation of employer- and employee price-elasticity raises several methodological issues (Gruber 2011; Gruber/Lettau 2004; Blumberg/Nichols 2004): Measuring the relevant price of insurance is difficult as the premiums of firms not offering insurance are often unknown (see Blumberg/Nichols 2004, p. 64 and Chernew/Hirth 2004 for an overview on the issues). In consequence, the premiums are imputed/constructed to firms that do not offer insurance. Mostly, tax rates are taken in various studies as the proxy of premiums. However, the identification of the relevant tax price for the employer remains difficult, as he has to decide for a heterogeneous group of workers and it is not obvious what the relevant employee characteristics are. Additionally, the after-tax price as a proxy of insurance price contains the problems of endogeneity of the dependent variable: The factors determining the tax rate (such as income; family status) can also impact demand of insurance and bias the results.

Gruber/Lettau 2004 address these issues with a “simulation” of the tax price and a comprehensive data source including information on the distribution of characteristics of workers in each firm. They estimate that especially smaller firms are responsive to the tax price of insurance in their decision about offering insurance to their employees.

Blumberg/Nichols (2004) provide a broad overview over the research on non-insurance in the U.S. They work out the institutional realities of different insurance markets and the options of different groups (self-employed; workers offered employer-sponsored insurance; workers without an offer of employer-insurance). They analyze the premium differences between the health insurance options, the factors determining the offer of insurance by employers and they summarize the empirical studies on price elasticity in every market. But pointing out factors of demand and offering health insurance does still not allow concluding the reason(s) of non-insurance. They point out conceptual gaps such as: “Is the absence of health insurance coverage a market failure or not?”, “How do worker preferences affect firms’ decisions?”, “What are the intangible elements of some potential enrollees’ preferences for private versus public insurance?” (p. 85).

To sum up, the analyses mentioned start from the fact that there are different health risks without insurance and try to explain demand of those groups in diverse markets under different circumstances.

This article takes a different perspective from the approaches mentioned above: It focuses on the emergence of the non-insurance, assuming that most of today's non-insured high risk persons have not always been high risk. Health risk can change over time. Instead of analyzing the barriers of access to insurance markets of high-risks, it focuses on the question why obviously an earlier purchase of an insurance contract preventing such a situation did not take place?

Literature is pointing out the fact that long-term health insurance contracts exists in theory (Cochrane 1995; Pauly et al. 1995; Arentz/Kochskämper 2012) and in practice (Pauly/Lieberthal 2008; Pauly 2010; Pauly/Herring 2007; Cochrane 2009). It is clear that a long-term contract could prevent later lifetime costs of an illness.³ Cochrane (2009) points out that "The lack of secure, long-term, portable health insurance is the greatest single problem with our current health care system". Pauly/Herring (2007) study the individual insurance market empirically and find a high level of risk pooling in the market, which they consider the result of the guaranteed renewability provision. They conclude that the early purchase of this provision could prevent higher premiums caused by becoming a higher risk later. They attribute the greatest problem of the market to the high administrative costs and the lack of tax sponsoring "The individual market's failing is not how it treats high risks but how it treats all risks" (p. 778).

There seem to be no doubt that young people could have an interest to be insured against the long-term consequences of a severe illness (Brown/Connelly 2005; Cutler/Zeckhauser 1998) and that insurance contracts providing for this do exist (Pauly/Herring 2007; Pauly 2010)

However, young people are less likely to buy health insurance than older persons (Brown/Connelly 2005, p. 281; Pauly/Herring 2007) ascribe this fact to the high loading and lack of tax sponsoring. Controlling for income, age and sex, they find no evidence of a lower likelihood of coverage in the individual market for higher risks.

³ Brown/Connelly (2005) draw another conclusion from the observed premium path: They observe that the lower risk older people face a probability 6- to 7-fold higher than lower risk young people. However, premiums for older people in the individual market are only around 3,7 times higher than the lowest low risk premium. They conclude that there is a partial community rating in the market even when it is not required which could explain the low purchasing rate of young people as adverse selection problem.

However, it is important to notice that Brown/Connelly (2005) assume that the current contracts cover only within-period risks. Of course, in this case, the observed premiums for younger and older low risk persons could allow the conclusion of a certain age-based community rating. But in case of long-term contracts, this interpretation would not hold, as the guaranteed premium sequence declines as well because (even if probability of becoming high risk increase with age) the financial consequences of getting high risk are higher earlier in life because of the higher expected time living with higher and costly risk (Brown/Connelly 2005).

This paper considers the possible options of a young, still good risk person. Modelling the insurance process requires taking into account the different insurance alternatives, namely individual and group insurance. A person who is a high risk today could have been a healthy and low-risk person in the past. The question arises, what options the persons might have had. *This article analyzes the premium-benefit ratio of both insurance options, focusing on the reasons of risk-averse low risk persons to forego the purchase of an individual long term health insurance contract. It provides a more comprehensive analysis and considers the institutional setting of the market which can have an effect on the costs and the benefits of an individual insurance and explain the rational forgoing of those contracts.*

Basically, the demand of insurance of individual long term contracts depends on the price of the insurance contract and of the possible alternatives. As it is the benefit-price relation which is relevant for a purchasing decision, lower benefits of an alternative could be preferred if its price is so much lower.⁴

Modelling the individual's insurance purchase requires taking into account both options with a different level of premium risk insurance and most importantly the interplay between both and the character of the individual insurance market as "in-and-out market". The individual market is often said to be a residual and "last resort" market that has the task of picking up those who do not obtain employer-group coverage (Pauly/Herring 2007), but in the following it is argued that it is especially this residual role which increases the relative costs of individual insurance. The co-existence of individual and employer insurance has some implications for the benefits of the individual insurance as the value of a long-term contract can be reduced in the employer-group dominated systems. The dominance of employer insurance can reduce the benefits from a long term insurance contract.

Benefits

The insurance benefits in terms of level of protection from future health costs risks of both options differ: An individual insurance contract could provide for insurance of the premium risk: Afterwards developed conditions of high risk (such as chronicle diseases)

⁴ That is why the availability of free care can crowd out individual health insurance even extending beyond the level of free benefits (Finkelstein argues that Medicaid can crowd out long-term care insurance; Cutler 2003 and Herring 2005 consider the negative effect of free health care on health insurance purchase). The price-benefit relation of the insurance allowing higher level of insurance is reduced due to the forgoing of alternative of lower, but so much cheaper (even costless) care in this case.

do not lead to higher premiums if a contract with guaranteed renewability at average risk premium is closed.

In contrast, while offering “implicit guaranteed renewability” (Pauly et al. 1995) because employee premiums are not risk-rated, employer (large) group insurance does not allow for a complete protection: losing the contract goes along with losing insurance and the so far developed conditions can lead to high premiums afterwards. Risk averse individuals shall therefore consider this difference and modelling their decision requires taking into account this difference.

Costs /Total Premium and loading

Various studies focus on the price elasticity of offering or taking up group insurance, whereas only a few consider the price elasticity of individual insurance. Even if the estimates of price-elasticity were correct (see Blumberg/Nichols 2004; Chernew/Hirth 2004 for the methodological issues raises): while price elasticity allows estimating the effect of subsidies (or the other way round, the effect of reducing or eliminating the subsidies) on demand, it does not allow explaining why a certain price is obviously too high for a certain group of persons. Understanding the reasons behind demand requires understanding the elements of insurance premiums and the alternatives which are available.⁵ But aside these cost reflected in insurance premiums, it is necessary to consider the costs of insurance which arise only at the side of the insurant. Those costs are not reflected in premiums.

Of course, foregoing of long-term health insurance could just be classified as reckless or irrational and driven by the underestimation of potential risks (Kunreuther et al. 2013, p. 246 f.). But as far as long term *care* insurance is concerned, the analysis of possible reasons for risk-averse people’s rationally foregoing insurance is more common: Analy-

⁵ Basically, two alternative prices of insurance can be distinguished: First, costs of insurance are built by the insurance process itself, such as administration, underwriting, marketing, risk-bearing (Cutler 2003; Santerre 2008, p. 91). The individual willingness to pay for these costs reflects the individual’s risk aversion (Gruber 2008, p. 576). Second, one part of the premiums reflects the expected medical expenses of the insurance persons, in other words, the benefits. A rising price of insurance as a consequence of rising health costs reflects the expected medical expenses and at first, it should not affect demand as the insurance process itself is not more expensive but only reflects the higher medical prices and therefore the higher financial risk resulting from an illness (Cutler 2003). Of course, this only holds if rising medical costs are not caused by moral hazard (Cutler 2003, p. 38). However, first rising premiums can affect demand due to budget constraints. Second, if rising medical costs do not affect the other alternative in the same way it can increase the price gap between both and make the alternative more attractive, in spite of lower benefits. This holds for the available free emergency care. The more the insurance price rises the more attractive it gets (Herring 2005; Cutler 2003). Likewise, the higher the price difference between individual and employer insurance, the more attractive the cheaper alternative becomes, even if it is less secure.

sis focuses for example on the crowding out of private long term care insurance by Medicaid's "implicit tax" (Brown/Finkelstein, 2008) or on the rational reliance on family members as a substitute for insurance (Pauly 1990). Following this approach, this paper focuses on the reasons which explain the rational foregoing of insurance. Pauly/Lieberthal (2008) conclude that individual insurance provides a better protection against long term health risk changes than small group insurance, but lower risk people (who could still insure the risk of becoming a high risk) purchase it less often. This paper aims at providing a deeper analysis of the question which is also raised by Pauly/Lieberthal (2008) empirical results: What does the decision made of (still) low risk individuals look like in the complex health insurance system in the U.S. and how can the lower purchase of long term health insurance contracts be explained?

3. The individual risk of health care costs: reduced by collective insurance frames

The risk of illness contains two risks, the risk of unaffordable medical care and the variation of income level (Nymann 1999). First, necessary medication may become unaffordable due to the lack of sufficient income. Second, the private income can be significantly impacted by the financial burden of medical services and medication. As a consequence, health risks go along with risk of enormous income variations.

Of one analyzes the health insurance purchasing decision, it has to be considered that the individual lifelong health costs risk which could be insured in early life is reduced via collective insurance frames:

First, Medicare, the federal health insurance for the elderly, provides predominantly inpatient care. This insurance is financed by compulsory contributions from employees, employers and by taxes. In consequence, the individual health risk is reduced, as costs resulting from illnesses treated via inpatient care for people over the age of 65 are insured. Additionally, expected costs of formerly (before age of 65) developed illnesses can be reduced if Medicare will take over the costs after the age of 65. Finally, it could be attractive to postpone optional treatments, if they are included in the Medicare health benefits catalogue and if postponing does not lead to any severe consequence (e.g. knee or hip joint operation).

Second, every person is guaranteed emergency care in hospitals, independent of income and insurance status. Having received the necessary care, only those with enough income have to pay for the costs of medical treatments. In case of insufficient income, the hospital has to bear these costs (Gaynor 2006; Kunreuther et al. 2013, p. 248).⁶ Therefore, the guarantee of emergency care can eliminate the access value motive of health insurance of those live-savings treatments. Indeed, a health cost risk for higher-income persons still remains. Low-income people without health insurance are collectively supported.⁷ For a person who has sufficient disposal income to pay for the insurance premiums for emergency care but insufficient to pay for the total costs of emergency care, it could only be rational to forego insurance and to rely on the hospital's help. However, for the persons with an income at a higher level which excludes possible reliance on hospital's free care, private insurance remains the only possibility of preventing high illness costs. Therefore, the comparison of both options and the individual purchasing decision/trade-off is regarded in the following.

4. The private insurance options differ in terms of insurance of premium risk: employer-sponsored group insurance versus individual long-term insurance

Having considered the briefly described collectively provided insurance options, a risk-averse person seeking insurance of the remaining health cost risk has two options: On the one hand, employer-sponsored health insurance, and on the other hand, long term individual health insurance. These alternatives differ in terms of insurance of the premium risk or the "re-classification" risk: An illness can induce a long term condition, such as cancer or heart disease, which leads to an increase in current and future health costs. If health insurance was short term and a person wanted to acquire a new insurance contract after the former insurance contract expires, one would have to accept a permanently higher insurance premium to insure the same health benefit catalogue.

⁶ This basic protection for low income non-insured people creates on the hospital's side the problem of uncompensated care. In case of rising prices to compensate for, the insured patients are paying for the free health care.

⁷ Previous to the introduction of the Affordable Care Act, low income people did not get systematically collectively financed medical care beside emergency care: In most states, low income is not the only eligibility criteria for enrolment in the social health insurance "Medicaid". Above all, low income parents, disabled persons and pregnant people are eligible.

As employer-sponsored insurance is job-dependent, the job-loss goes along with losing health insurance.⁸ Having lost group health insurance and falling back on the individual insurance market, those pre-existing conditions imply a (prohibitively) high individual insurance premium. Therefore, employer-group insurance can only provide an incomplete protection as the premium risk is only insured as far as one keeps the insurance-providing job.

In contrast to that, a long term protection which includes premium risk insurance can allow for a risk-independent premium over time (Pauly et al. 1995; Cochrane 1995; Jankowski 2006). In this case, health conditions developed in the meantime do not go along with rising premiums. In theory, the premium could be constant over the whole contract duration (Arentz et al. 2012) or just increase with age, but it would be independent of changes of individual health risks which occur after the insurance contract has been signed (Pauly et al. 1995; Cochrane 1995).

Effective protection via long term insurance contracts depends on the method of financing insurance. Under the assumption that a buyer's risk level is known at the beginning of the contract, premiums reflect this expected risk level. In consequence, individuals with ex-post lower than expected health risks have an incentive to cancel the long term insurance contract in order to buy a new insurance contract at a lower premium (Jankowski 2006, p. 127; Pauly et al. 2011). This would lead to a deterioration of the risk pool and therefore to higher premiums. To prevent these negative consequences in case of an ex-post selection of lower-than-average health risks, a special premium time path can be installed (Pauly et al. 1995). The so called "premium-frontloading" includes pre-payments for covering future excess losses of high risks to guarantee that the exit of low risk persons has no impact on the insurance financing of future expenditure (Pauly et al. 1995). Cochrane (1995) showed that alternatively, separate premium risk insurance could provide protection against the re-classification risk.

In the U.S., most life insurance contracts are financed via front-loaded premiums (Hendel/Lizzeri 2000). Since the introduction of the Federal „Health Insurance Portability and Accountability Act“(HIPAA) in 1996, individual health insurance contracts must be „guaranteed renewable at class average“ in most states (Patel/Pauly 2002). Pauly/Herring (1999) conclude that even without state regulation, already in the

⁸ The 1985 enacted COBRA (Consolidated Omnibus Budget Reconciliation Act) allows employees having lost employer insurance to keep their insurance policy for up to 18 months, paying 102 percent of the employer's premium. Therefore no individual risk equivalent premiums may be required during this period (Madrian 1994, p. 29).

1980s around 75 percent of individual insurance contracts contained the guaranteed renewability provision. They studied individual insurance markets in the late 1980s and observed a high level of “risk pooling”, namely that people with different expected losses paid similar premiums which they ascribe to the guaranteed renewability provision. Premiums only varied with sex, age and location. The front-loading of insurance premiums leads to a premium path with premiums rising much less than proportionately with age (Pauly/Herring 2007).

In consequence, the overall extent to which premiums vary with risk is a “mix of risk rating at first issue and no risk rating upon renewal” (Pauly/Herring 2007). However, there is only low diffusion of individual health insurance contracts. Most people under the age of 65 get their insurance via their employer (Pauly 2010).

5. Take up of employer-group insurance as result of low marginal costs

Amongst large employers, offering health insurance to employees is a widespread part of employee remuneration. Under the assumption that the costs of health insurance can be shifted to employees⁹, the health insurance expenditures will be reflected in a corresponding reduction of wages. In consequence, the employee bears the health insurance costs – and understanding the dominant role of the employer sponsored group insurance presupposes understanding the rational decision of the employee.

Indeed, employees taking up the offered health insurance is not necessarily a result of rational balancing of pros and cons of the employer group insurance versus individual long term insurance: Rather, the employee’s scope for decision making is restricted as there is no individual worker incidence of health insurance (Gruber 2011): The employer shifts the health insurance costs to all employees, independently of their take-up decision. In this case, an employee will rationally take up the group insurance instead of seeking individual health insurance, because not taking the group insurance does not lead to a higher wage. From an employee’s perspective, the marginal costs of employer group insurance are zero, while the marginal costs of individual health insurance are the full premium.¹⁰

⁹ See Pauly (1997) for a deep analysis of this issue.

¹⁰ This argument holds in case of employee contribution as well: The marginal costs of take up of group insurance are still low compared to the full costs of insurance. For an employee at a certain employer with group insurance, this

In consequence, being insured via the employer could not be considered as a result of individual preference of employer insurance over an individual long term insurance contract, but rather as a side effect of a working place choice. In fact, the matching between employer and employee is determined by different factors, employee's preferences for or against health insurance being only one. An employee could prefer to work for an employer who has some advantages regarding distance from home, working hours and so on. Even with a preference for higher wages instead of group health insurance, an employee could rationally decide to apply for a job with this employer with group health insurance,

6. Comparison of full costs of employer-group insurance and long-term individual contract: partly state-induced cost-advantage of employer-group insurance

In a competitive labor market one expects employers to adapt wage-fringe benefits package to preferences of workers. In this case, it is not sufficient to explain the worker's decision to take group insurance as lack of options.

An employee could consider health insurance options during the job search and purposely seek an employer offering health insurance, preferring him over other employers. Under this assumption, seeking insurance via employer could be modeled as an individual decision to be insured via the employer instead of purchasing individual insurance. Monheit/Vistnes (1999) conclude in their empirical analysis of workers' job choice that the sorting of workers to different employers offering or non-offering health insurance reflects their preferences for health insurance. They argue that low-wage people with access to public coverage have no interest in health insurance and might prefer jobs without insurance coverage and therefore higher wages.

Under the assumption of risk aversion, the choice of employer health insurance can be taken deliberate. The rational balancing of advantages of group insurance over the long term individual health insurance is analyzed to work out why it could be rational even for a risk averse person to forego long term protection. Several factors can be identified which lead to a price gap between the two private insurance options.

product is a highly subsidized product as the costs of take up are low. This explains the low price elasticity assessed in empirical studies (see Gruber/Washington 2005 for an overview)

6.1. Group averaged premiums in employer-sponsored insurance do not necessarily induce adverse selection

Premiums of employer group insurance are not individually risk rated but community rated. Employers are not allowed to consider employee's risk factors (including age), neither in the premium setting nor in wage setting.¹¹ Assume that employers shift the health insurance costs to their employees via an equivalent reduction of wages. In this case, employees with a lower-than-average health risk pay a premium above their expected health costs whilst employees with a higher-than-average health risk pay a premium lower than their expected health costs. In the context of an analysis of advantageous factors of group insurance, this premium setting is relevant, as individual health insurance contracts mostly goes along with an individual risk-rated premium (Merlis 2005). Personal risk factors such as pre-existing conditions are reflected in higher premiums. Under the assumption that there were no further differences between individual and group insurance, persons with lower-than-average health risk would rationally prefer higher wages and purchasing of an individual insurance contract over group insurance – in contrast to that, for persons with a higher health risk, group insurance would be advantageous.

Modeling insurance choice in a world of perfectly mobile and homogenous workers only differing in health cost risk, adverse selection could arise (Goldstein/Pauly 1976): Lower health risks would avoid group insurance with higher health risks. An employer offering health insurance could attract employees with a higher health risk, while an employer offering no health insurance and higher wages instead, attracted lower health risks. As a result, different employers insured different, homogeneous groups of employees (Goldstein/Pauly 1976). This result corresponds to a Rothschild-Stiglitz-Equilibrium, where different health risks self-selected to different coverage options (Bundorf/Herring/Pauly 2010).

In the following, several factors which can create a large price gap between individual and group insurance even for persons with low risks are analyzed to explain the domi-

¹¹ The empirical question, if and to what extent wages are age dependent to compensate for age dependent health care costs remains unclear (Bundorf/Herring/Pauly 2010, footnote 7). Empirical studies of Sheiner (1999) and Pauly/Herring (1999) conclude that health insurance wage deductions vary with age. But even if this result was representative and reflecting different health costs risks: A further premium differentiation would contravene with the "Americans with Disabilities Act" (1990) and the 1996 introduced Federal „Health Insurance Portability and Accountability Act“ (HIPAA). Therefore, the assumption of group average health insurance premiums seems consistent and is also common in the U.S. literature (Pauly/Herring 1999, p.72-73; Bundorf/Herring/Pauly 2010, footnote 7; Cochrane 1995, p. 458; Carrol/Swagel 2009, p. 565; Gruber 2011, p. 518).

nant role of employer group insurance as a result of rational risk-averse people's insurance choice.¹²

6.2. Economies of group purchasing

Employer group insurance generates several cost advantages, resulting from forming an insurance group for purposes other than purchasing insurance and from sufficiently large groups to generate economies of scale. Employees can benefit from those cost advantages, either in case of employer's self-insurance or in case of an employer who purchases group insurance and gets some premium advantages. Employers competing for qualified workforce will be forced to pass those cost advantages to their employees.

First, if a large employer offers insurance to its employees and does attract lower and higher risks (in other words, if adverse selection does not arise), this insurance pool could be large enough to reduce risk variation. Therefore, the insurer's risk of deviation of expenditures from expected value of expenditures for this group is reduced. This reduced the financial risk for an insurer (Zweifel/Eisen 2003, p. 240). Therefore it requires less risk management in terms of building financial reserves and risk pooling than insuring a small group or an individual (Blumberg/Nichols 2004, p. 47; Jankowski 2006; p. 65). However, at first those economies of scale create an incentive for commercial insurers to generate large insurance pools – they could bring forward large insurance companies, which could also benefit from large insurance pools resulting from individual contracting (Jankowski 2006). But the relevant cost advantages result from building an insurance group for purposes other than insurance. No additional administration/transaction costs go along with this group building, if the employees are more or less automatically enrolled in an employers' insurance pool.

Secondly, group insurance via the employer saves the transaction costs resulting from searching for and contracting with an insurer: Only one person, namely the employer, acts on behalf of his employees and spends time for searching and contracting with the insurer (Blumberg/Nichols 2004, p. 47). And as the employer is acting on behalf of a (large) group, the insurer generates high volume of sale one contract. In contrast to that,

¹² However, the group's insurance cost advantage compared to individual insurance contracts does not exclude a certain risk selection within the employer's group: If the low-risk employee prefer reduced coverage to prevent being pooled with high-risk employees, it could be worthwhile for an employer to offer different health benefit catalogues. Low- and high risk people could prefer a group insurance over individual insurance, but low risk people could prefer a separating equilibrium over pooling equilibrium (Bundorf et al. 2010; Arentz 2012). Therefore, adverse selection arised within the group insurance, if low risk people preferred a reduced benefit catalogue to forego pooling with higher risk and they stayed "underinsured" compared to an optimal insurance contract at an actuarial fair premium.

generating the same turnover from individual contracts will certainly require more advertisement.

6.3. Employer-group insurance: saving the costs of individual risk underwriting

Furthermore, insuring groups instead of individuals can allow foregoing individual risk assessment. In case of individual contracting, insurers need to underwrite to adjust premiums to individual expected health costs – lower-than-average risks would otherwise reduce or forego insurance. Risk underwriting is a necessary mechanism to prevent adverse selection, but it comes at a price, because the risk assessment takes time and requires administration (Jankowski 2006, p. 69). The marginal costs of risk assessment have to be lower than marginal benefits to make it an efficient insurance tool.

In case of (at least large) group insurance, the marginal effect of an individual employee's risk is low. Therefore a risk outlier would not significantly change the group's expected health costs. This effect correlates with group size. The fact that the group is already built and demands insurance as a group, reduces the effect of the individual on the expected costs of the insurance purchaser. An insurer can only consider general group characteristics (such as industry) to calculate the expected costs of the group. In consequence especially large firms can benefit from saving the costs of individual risk underwriting.

And of course, the more the group is created for other reasons than insurance (namely for employment, not for insurance purchase), the lower the tendency of adverse selection if for some low-risk persons not willing to buy insurance, there is no other employer without insurance available.

Due to those economies of group insurance (resulting from group size and the fact that the group is formed not only for purchasing insurance), premiums of group insurance can be lower than individual insurance premiums, even for lower-than-average risks. Administration costs can be 25-30 percent lower than for an individual insurance contract (Blumberg/Nichols 2004, p. 47).

6.4. Individual insurance does not have a relative disadvantage due to „lock-in“

As explained in chapter 4, long term insurance contracts go along with building provisions for future claims. But if individual provisions are not portable, the insured persons are „locked-in“ after a short time (Jankowski 2006; Pauly/Percy/Herring 1999): The reclassification risk is only insured at the specific insurer where the first contract was signed. If a person who developed a severe illness and therefore a pre-existing condition wanted to purchase insurance from another insurer, the latter would consequently calculate a higher premium to compensate for the higher expected costs. Therefore, changing insurer would go along with a higher premium, making the original provision of guaranteed renewability useless.¹³

This “lock-in” could pose a problem if the health insurer exploited the lower exit options by holding-up health benefits or raising premiums. In theory, the assured would accept such a deviance from the original contract up to the point where it induces higher costs than those of switching the insurer (the difference between the new risk equivalent premium and the original premium plus transaction costs).

However, an insurer would only exploit this situation if he was short-sighted as such a behavior could lead to a bad reputation, preventing potential new clients from signing a contract. Indeed, if customers are aware of the lock-in problem, they could be more sensitive and more carefully checking the insurer’s reputation (Pauly/Percy/Herring 1999, p. 37). Therefore, the risk of losing new clients can discipline insurers and compensate for the missing exit-options of already insured clients (Pauly/Percy/Herring 1999, p. 37; Patel/Pauly 2002, p. 283).

A comparison between individual long term and employer group insurance must however take into account that this effect does also exist in employer insurance: indeed, insurance protection is linked to the employer. Therefore, switching the insurer requires changing the employer, going along with high transactions costs and the opportunity costs of foregoing other employer benefits. Consequently, an employer acting as an insurer would dispose over the same options of exploiting the „lock-in“, if one neglects reputation effects. Therefore, lock-in effects of individual long term contracts can not be considered as a disadvantage compared to employer group insurance.

¹³ The lock-in Effect could be avoided if individual risk provisions were portable (Arentz et al. 2012). Cochrane (1995) proposed a risk premium insurance, separated from health insurance and therefore maintaining protection from reclassification risk in case of changing health insurer.

6.5. Exclusive tax sponsoring of employer-group insurance

Beside the cost advantages of employer-sponsored group insurance due to the coupling of workplace and insurance plus the economies of scale, a large price advantage results from the exclusive tax advantage for employer-group insurance. This advantage got established in 1954 in the Internal Revenue Code and can be regarded as the state's reaction to employers' increasing payment of fringe benefits: During World War II, wages got fixed to prevent inflationary dynamics of an increasing demand of workforce. To compensate for the lacking wage incentives, employers used the alternative of fringe benefits (Helms 2008; Thomasson 2003).

Premiums paid by an employer for his employees are exempted from all employees' taxes, federal and state income tax and social security contributions (Monahan /Schwarcz 2010, p. 14-15). Additionally the employer can save payroll-taxes. Under the assumption that employers pass employment related taxes and contribution to their employees, it is the employee who benefits from this tax deduction (Finkelstein 2002; Cutler 2002). Additionally, in most cases, employee premiums for an employer group insurance can be exempted from taxes (Monahan/Schwarcz 2010, p. 14-15; Cutler 2002; Blumberg/Nichols 2004). In consequence, the "after tax price" of group insurance in terms of opportunity costs of foregone wages is reduced: One dollar of employer group insurance costs less than one dollar of wage reduction due to taxes on wages (Finkelstein 2002, p. 310; Cutler 2002; Blumberg/Nichols 2004). Therefore, the higher the tax rate, the lower is the price for group insurance as there is less net wage to give up for health insurance.

As this tax advantage only applies to employer group insurance, individual health insurance contracts are getting comparatively more expensive.¹⁴ As the average tax rate can amount to 34 percent, tax sponsoring of health insurance alone can already reduce the price of group insurance by 34 percent compared to an individual insurance (Cutler 2002, p. 44; Gruber 2011, p. 516).

The exclusive tax sponsoring of employer-sponsored health insurance creates a large price gap between individual health insurance contracts and group contracts. In consequence, the dominance of employer-sponsored health insurance over individual insurance can also be a result of the tax sponsoring.

¹⁴ Self-employed persons can benefit from limited tax deductions (Monahan /Schwarcz 2010, p. 14- 15; Blumberg/Nichols 2004, p. 49; Bumann/Gruber 2005).

6.6. Reduction of individual planning horizon in the U.S. health insurance system: long-term health insurance contract gets less attractive and expensive

Fix costs for the insurer - Medicare matters for the loading

Those costs of insurance which are not related to health cost expenditure, but to the insurance process itself (including e.g. administration, underwriting, see 6.2 and 6.3) constitute the fix costs for an insurer, because they are independent of the level of insurance coverage he provides.

In the U.S. health insurance system insurance contracts are not life-long as people over the age of 65 are insured in Medicare¹⁵. Individual insurance of those risks covered by Medicare after the age of 65 ends with the age of 65. Therefore, the coverage is reduced compared to a life-long contract. There is no need to care for those possibly high healthcare costs. As the individual risk is considerably reduced compared to a life-long contract, the costs of insurance resulting from health care costs are reduced and so are the premiums. But: if the insurer allocates the fix costs evenly so that loading in premiums is constant in every period for every insurant, the loading costs are relatively higher due to the shorter duration of the insurance contract. If the contract was life-long, administration costs could be distributed over a longer period of time and therefore its relative would be lower.

Shorter planning horizon in the System of employer group insurance – Reduction of individual health cost risk, therefore lower benefits of individual insurance

Second, the dominance of the employer-sponsored insurance system can reduce the benefits from a long-term individual insurance contract: From the point of view of a young person seeking long term health insurance, there is a reduced planning reliability during the time period under the age of 65. Assume that a young employee had the free choice between an employer offering group insurance and an employer offering higher wages instead of health insurance. Besides the costs advantages mentioned above, he has to take into account a further cost factor, namely the fact that later on he could be employed by another employer offering insurance without an opt-out option. In fact, the individual health insurance market is characterized by a frequent enter and exit at vari-

¹⁵ Medicare only covers stationary care and therefore is only a partially comprehensive insurance. Therefore, a life-long insurance could be attractive for the uncovered health cost risk. However, this article focuses on the time period before the age of 65, as the phenomena of high uninsurance rate in the U.S. mostly refers to “non-elderly” people under 65.

ous periods (Brown/Connelly 2005, p. 28; Chollett 2004). Foreseeing this situation increases insecurity about the actual time period which must be insured. This reduces the planning horizon and therefore the benefits from a long-term insurance contract (Pauly/Kunreuther/Hirth 1995, p. 150). In other words: the possibility of being insured via the employer in the future reduces the expectation value of an individual long-term healthcare contract.

The insecurity about the future insurance track and the possibility of being insured with the employer reduce the healthcare cost risk. But: if the insurer considers the health cost risk of person by referring to statistics over age- and risk type related costs and calculates the premiums without considering this reduction of healthcare cost risk, the person assuming to be insured by the employer one day expects lower future healthcare costs than the insurer. Under this condition, purchasing a guaranteed renewable contract which ends at the age of 65 is costly.

It is worth noting that this situation differs from the above described problem of ex-post adverse selection. Ex-post adverse selection arises because some of those persons (with lower-than-expected health risks) for whom insuring was attractive, have an incentive to cancel because they got the relevant risk information after signing insurance. In contrast to that, the anticipation of future employments can affect the willingness to pay already before signing an insurance contract.

Premium frontloading and insecurity over needed duration of insurance

Canceling the individual contract would be an option to reduce the insurance level. But note that canceling the contract does not allow saving the complete costs of insuring the originally planned time period: It lies in the character of the long-term insurance that the insurance of the premium risk is already paid for in a fix lump-sum, the premium front-loading, in the first premium (see chapter 4).

This is the side-effect from the premium front-loading of guaranteed renewable contracts. As argued in chapter 4, that premium front-loading is necessary to avoid that lower risks will leave the pool eventually and close a new contract at a low-risk premium. This premium path allows avoiding ex-post adverse selection as every insurant is committed, paying already in advance for the future insurance of the premium risk. Allowing for a long term risk pooling requires that also those insurants who turn out to be a low-risk after the contract was closed remain within the risk pool.

Premium front-loading includes pre-payments for insuring the premium risk in the long run. But the more insecure the duration of the insurance contract, the less attractive is the pre-payment of premium risk insurance for future periods.¹⁶ Of course, if the expected value of health costs was calculated considering the average insurance track of individuals taking into account the possible insurance periods with an employer, the amount of premium front-loading would be reduced and therefore not reduce the incentives to purchase individual long-term insurance.

Additionally, with imperfect capital markets and individuals seeking to avoid the reduction of consumption opportunities due to the lifetime lump sum (because of the front-loading) and borrowing, front-loading can cause additional costs, beside transaction, namely the costs of funding the payments (Pauly et al. 2011; Frick 1998). If individuals prefer higher consumption opportunities today (which means preferring paying the premium risk periodically rather than as a lump-sum) over higher consumption opportunities later, the costs of guaranteed renewability might be too high (Frick 1998).

In contrast to that, such a premium path with front-loading is not necessary to keep the pool together in the employer-group insurance: leaving the insurance pool is costly as it is linked to changing the workplace. In other words, employer-insurance also allows assuring the premium risk because of the linkage of job and insurance (Cochrane 1995). However, it is exactly this link which does not allow for a complete insurance of the premium risk as the loss of the job goes along with higher premiums for those persons having developed high risks in the meantime.

In consequence individual long term insurance up to age of 65 gets more expensive for an individual at the beginning of (working) life. These high relative costs of long-term contracts are the result of low individual benefits from such a contract in a system in which employees frequently have coverage over the employer.

The searching and transaction costs on the side of the insurant are independent of health risk to be insured and make the insurance of smaller risks less attractive

Fix costs for the persons seeking a long-term insurance long-term contract arise at the insurer and are therefore reflected in the premiums, but also on the side of the insurant:

¹⁶ In the light of the costs resulting from premium-frontloading, Pauly et al. (2011) modify the assumption of fully informed insurers could reduce the need of premium frontloading. But an outsider insurer could still attract the lower than expected health risks via differentiation of benefit catalogue which would then lead to a deterioration of the remaining risk pool. They conclude that in case of asymmetric information guaranteed renewability premium schedule remains necessary to prevent ex post adverse selection.

He has to search for insurance and has to communicate with the insurer. These transactions costs can be independent of the health costs risk which has to be insured. Therefore, the existence of Medicare, which covers health care costs for people over 65, and the fact that people with individual health insurance contracts frequently cancel their contracts due to the fact that they have taken a new job which comes with an employer group insurance leads to a lower financial risk for insurers, but not to lower fix costs.

To sum up, the insecurity about the due to the dominance of employer-sponsored insurance raises the costs of insurance relative to the coverage/benefits, as the health costs risk is reduced. But if the “in-and out” is not reflected in insurance premiums, they are too high for an individual and additionally, transaction costs remain. This can also explain a low insurance rate among young persons: A young person who is expecting to be insured via their employer in the future can forego insurance until being employed via an employer offering health insurance¹⁷, because bridging the time with individual insurance is too costly: The uncertainty about the time period to bridge could lead to an unfavorable price/benefit ratio (one “risks” to purchase insurance with rather high fix costs for a possible short time period). This effect could be an explanation of the high uninsurance rate amongst younger persons and differs from the argument that it is due to “adverse selection”. The latter could arise if premiums were not reflecting individual health risks but averaged (due to regulation or to information asymmetry).

7. Purchase of an option on health insurance could allow to close the gap, but requires adapting premiums to the “in-and out” within employer-group insurance

So far, it was argued that employer group insurance could crowd out long term individual insurance, due to its large cost advantage and due to the fact that employer insurance could be an unavoidable form of work compensation, at least perspectively, and therefore reduce the willingness to pay for an individual insurance: Employer sponsored insurance constitutes the first insurance option.

However, the remaining premium risk could be insured with the early purchase of an option on health insurance later in life. This option could to prevent that later on the person might be without insurance:

¹⁷ Cochrane (2013) point out: “Anyone who might get a job in the future will not buy long-term insurance.”

Presumably the risk-averse person insured via the employer and considering the risk of losing the job could be willing to insure only the remaining premium risk. This product could be purchased early in life and additionally to employer group insurance. If employer group insurance constitutes the preferred alternative of insurance, such an individual option on future insurance should only function as a substitutive subordinate alternative. In 2008, a product to ensure the risk of losing the job and being dependent on the individual market was introduced to the U.S. market. According to Richard A. Collins, president of UnitedHealth's individual insurance unit, it is aimed at insuring the "insurability for the future" (New York Times 2/12/2008). It was a guarantee of getting a health insurance in the future, without considering health risk conditions developed in the meantime (Cochrane 2009). This product targeted persons who were temporarily insured via their employer, but could not be sure to keep this insurance constantly.

Briefly, one buys an option on a future health insurance allowing for covering exactly the risk of being dependent on the individual market after having lost group insurance and having already developed pre-existing conditions.

Consequently, the premium risk which has to be insured could be defined by two components: The risk of losing the employer sponsored insurance and the financial risk to be dependent on the individual insurance market while having developed a pre-existing condition. Accordingly, the premium calculation of such an option on future insurance should not only consider health risk, but also the probability of being permanently insured via the employer. The second determinant is important: Assume that the individual insurance should only function as a substitutive subordinate, due to its large cost advantage. Therefore, if employer insurance was constantly available to an employee, he would never rely on the individual market and make use of the right to buy an individual health policy.

In consequence, the willingness-to-pay for a future option on individual insurance could depend not only on a persons' individual health risk, but also on the individual expected probability of losing a job with group insurance and not finding a new job with group insurance. But if the price of the options on future health insurance does not correspond to the individual estimation of the premium risk, this asymmetry could lead to a withdrawal of those persons who expect to be predominantly insured via the employer.

Finally, even if insurance premium considered the different in- and out probability of the employees seeking insure their current health status, the resulting costs from risk-assessment plus the other administration costs could result in a high loading as the benefits of the insurance option are comparatively low. Additionally, here again, the transaction costs on the side of the insurant arise independently of the risk wants to insure. He has to get information, communicate and decide. This takes time and it costly. Notice, that this entitlement insurance covers not the full premium risk (in contrast to Cochrane's concept of premium insurance), but only a part of the premium risk which remains after having considered the probability of being constantly insured via the employer. Therefore, covering the remaining small healthcare cost risk could be not worth the costly effort. Additionally, the time horizon of entitlement insurance is short as it ends with the age of 65. Therefore, benefits could be relatively low, increasing the share of administration costs on premiums.¹⁸

To sum up, the dominance of the employer-sponsored health insurance could not only crowd out a full individual insurance, but also the remaining risk of insurance gap after having lost employer-group insurance as it is too costly compared to the expected benefits.

8. Conclusion and political implications

This article focused on the fundamental question regarding the reasons that have led to the current level of uninsured people in the health insurance system before the Affordable Care Act. This question seems to have been crowded out by the debate about the reform. Several factors in the U.S. health insurance system can make it more expensive to insure the premium risk with the purchase of a long-term health insurance contract. This price advantage of group insurance can reduce demand for individual long term health insurance contracts.

The decision to forego long term protection can have consequences if one loses the employer group insurance and depends on the individual insurance market afterwards. In this case, health risks developed during the duration of the group insurance would be

¹⁸ In contrast to the U.S., entitlements for private health insurance are quite common in Germany to insure a future possible transition from the statutory insurance system to the private system. But note that in Germany, the premium risk is higher as the private health insurance is a lifelong insurance and entering the system e.g. at the age of 50 with a high risk and a high premium implies paying the high premium for insurance until death.

reflected in possibly prohibitively higher premiums in the individual insurance. Therefore, the high uninsurance rate in the U.S. could partly be considered a result of the dominant system of employer-group insurance, which (not least state-aided) crowded out the prevalence of protection against individual long-term health risk.¹⁹

This cost advantage of employer-insurance is partly state-induced: First, being insured in the Medicare system after the age of 65 considerably reduces the health costs risk which can make it less worthwhile to make the effort to search for and to purchase an individual insurance. Second and most importantly, the exclusive tax-sponsoring of employer group insurance creates a large price gap between the two private insurance options.

If the price gap leads to foregoing of long-term insurance in favor of employer-insurance, it can induce non-insurance later on due to a job-loss and pre-existing conditions developed in the meanwhile (Cochrane 2013). For a high-risk person the premium of individual health insurance could not be affordable while at an earlier point in time, being low risk, insurance could have been affordable.

It is worth noting that this analysis implies that an elimination of the tax sponsoring could increase the health insurance coverage rate in the long run: If the guaranteed-renewable provision becomes comparatively more attractive, demand of individual long term contracts could increase, going along with a reduction of the number of people being uninsured in case of job loss. If a reduction of non-insurance rate is aimed at, tax-sponsoring of group-insurance should be eliminated to inhibit a state-induced insurance gap.

However, elimination of the tax sponsoring could simultaneously contain a counter-effect, namely decreasing the insurance rate due to the income effect. This effect can be especially high as the employer-sponsored insurance contains a leverage effect due to the automatic enrollment of employees (or their “biased” take-up decision with employee premiums). Therefore, it is quite possible that not all those employees would alternatively choose individual insurance. In fact, several studies modeling the effect of tax exclusion on the insurance rate conclude that repealing or capping the tax exclusion would lead to a significant decrease in the insurance rate (Gruber 2011). However, what has to be taken into account beside the possible substitution of employer-sponsored

¹⁹ Cochrane 2013, p.19 speaks of a “killed” individual insurance market.

insurance by individual insurance is their different level of premium risk insurance. The studies do not consider the insurance status in the long run. This can underestimate the non-insurance rate amongst the people formerly insured via their employer as being insured via the employer includes the risk of being uninsured thereafter. In the long run, coverage rate amongst those with individual insurance could be higher than amongst those being insured via their employer. These long-term effects are not considered in cross-section studies focusing on price effects in each market coverage rate.

Most importantly, the tax sponsoring is not only expensive (Gruber 2011), but is not the most effective instrument to increase the insurance rate. A comprehensive insurance rate could be achieved by an individual mandate (complemented by subsidies for low-income people). This mandate could be fulfilled by an individual long-term contract as well as by an employer-sponsored insurance in combination with purchase of an option on future health insurance contract, (a guarantee to purchase individual health insurance at a later point in time without considering new risk factors developed in the meantime). Both alternatives could allow insuring the risk of high illness costs.

Certainly, for some persons, health insurance is always unaffordable and low-income low risks (as well persons with high-risk from the start) might have difficulties paying for health insurance. Those persons could be provided with individual subsidies to purchase health insurance. If a health care mandate exists, limiting subsidies to people who can otherwise not afford health insurance is surely a superior policy option to achieve a higher insurance rate compared to subsidizing all individuals with health insurance or all individuals with group insurance, as most people with the necessary financial resources would buy health insurance irrespective of the subsidy.

References

- Arentz, C./Eekhoff, J./Kochskämper, S. (2012): Private health insurance: a role model for European health systems. *European Journal of Health Economics*; 13 (5), 615-621.
- Blumberg, L./Nichols, L. M./Banthin (2001): Worker decisions to purchase health insurance. *International Journal of Health Care Finance and Economics*, 1 (3-4), 305-325.
- Blumberg, L./Nichols, L. M.(2004): Why Are So Many Americans Uninsured? In: McLaughlin, C. G. (Ed.): *Health Policy and the Uninsured*. Washington, DC: Urban Institute Press.
- Brown, Jeffry R./Finkelstein, Amy (2008): The interaction of public and private insurance: Medicaid and the Long-Term Care Insurance market. *American Economic Review*, 98 (3), 1083-1102.
- Brown, H.S./Connelly L.B. (2005): Market failure in long-term private health insurance markets: a proposed solution. *Applied Economics Letters* 12, 281-284.
- Bumann, L. E. / Gruber, J. (2005): Tax credits for health insurance. Discussion Paper 19. Washington D.C.: The Urban Institute.
- Bundorf, K. M./Herring, B./Pauly, M. V. (2010): Health risk, income, and employment-based health insurance. *Forum for Health Economics & Policy* 13 (2), Article 13.
- Buntin M. B/Marquis M.S./Yegian J.M. (2004): The Role of the Individual Health Insurance Market and Prospects for Change. *Health Affairs*, 23 (6), 79-90.
- Caroll, R./Swagel, P. (2009): The intersection of tax and health care policy. *National Tax Journal* LXII (3), 563-571.
- Chernew, M./Frick, K./McLaughlin, C. (1997): The demand for health insurance coverage by low-income workers: can reduced premiums achieve full coverage? *Health Services Research*, 32 (4), 453-70.
- Chernew, M./Hirth, R. (2004): Challenges in Modeling Health Insurance Coverage. Gaps in the literature, in: McLaughlin, C. G. (Ed.): *Health policy and the uninsured*. Washington, DC: Urban Institute Press.
- Chollet, Deborah (2004): What have we learned from research on individual market reform?, in: Monheit, Alan C./Cantor, Joel C. (Eds.): *State health insurance market reform*, 46-63.
- Cochrane, J. H. (1995): Time-Consistent Health Insurance. *Journal of Political Economy*, 103 (3), 445-473.
- Cochrane, J.H. (2009): Health-Status Insurance: How markets can provide health security. Cato Institute, Policy Analysis No. 633.

Cochrane, J.H. (2013), After the ACA: Freeing the market for health care (February 6, 2013), <http://ssrn.com/abstract=2213027>. Accessed on 18/10/2013

Collins, Sara R./Robertson, Ruth/Garber, Tracy/Doty, Michelle M. (2012): Gaps in Health Insurance: Why So Many Americans Experience Breaks in Coverage and How the Affordable Care Act Will Help. <http://www.commonwealthfund.org/publications/issue-briefs/2012/apr/gaps-in-health-insurance.aspx>. Accessed on 24/09/2014.

The Commonwealth Fund (2014): The income divide in health care: How the Affordable Care Act will help restore fairness to the U.S. Health System. <http://www.commonwealthfund.org/Publications/Issue-Briefs/2012/Feb/Income-Divide.aspx>. Accessed on 24/09/2014.

Cutler, D. M. (2002): Health care and the public sector, National Bureau of Economic Research. Working Paper 8802.

Cutler, D.M. (2003): Employee Costs and the Decline in Health Insurance Coverage, in: Cutler, D.M./Gaber, A. M. (Eds): *Frontiers in Health Policy Research*, Volume 6, Article 3.

Cutler, David M/Zeckhauser, R. (2004): Extending the Theory to Meet the Practice of Insurance, in: Litan R./ Herring, R.(Eds.), *Brookings-Wharton Papers on Financial Services*, Washington DC: Brookings Institution.

Finkelstein, A. (2002): The effect of tax subsidies to employer-provided supplementary health insurance: evidence from Canada. *Journal of Public Economics* 84 (3), 305–339.

Frick, Kevin D. (1998): Consumer capital market constraints and guaranteed renewable insurance. *Journal of Risk and Uncertainty* 16, 271-278.

Gaynor, M. (2006): Why don't courts treat hospitals like tanks for liquefied gases? Some reflections on health care antitrust enforcement. *Journal of Health Politics, Policy and Law*, 13 (3), 497-510.

Gold, Elise (2012): A decade of declines in employer-sponsored health insurance coverage. Economic Policy Institute, Briefing Paper no. 337.

Goldstein G. S./Pauly, M. V. (1976): Group health insurance as a local public good. In: Rosett, R. N. (Ed.): *The role of health insurance in the health services sector*. New York: National Bureau of Economic Research; pp. 73-114.

Gruber, J. (2008): Covering the Uninsured in the United States. *Journal of Economic*, 46 (3), pp. 571-606.

Gruber, J. (2011): The tax exclusion for employer-sponsored health insurance. *National Tax Journal*, 64 (2, Part 2), 511-530.

Gruber, J./Lettau, M. (2004): How elastic is the firm's demand for health insurance? *Journal of Public Economics* 88, 1273-1293.

Gruber, J./Washington, E. (2005): Subsidies to employee health insurance premiums and the health insurance market. *Journal of Health Economics* 24, 253-276.

Helms, R. B. (2008): Tax Policy and the history of the health insurance industry. Washington D.C.: American Enterprise Institute
http://www.american taxpolicyinstitute.org/pdf/health_conference/Helms.pdf. Accessed on 1/05/2014.

Hendel, I./Lizzeri, A. (2000): The role of commitment in dynamic contracts: Evidence from life insurance. Cambridge, MA: National Bureau of Economic Research. Working Paper 7470.

Bradley Herring (2005): The effect of the availability of charity care to the uninsured on the demand for private health insurance. *Journal of Health Economics* 24 (2) 225-252.

Jankowski, M. (2006): *Wettbewerb, Versicherungspflicht und Risikoanpassung. Zur Begründung und Gestaltung einer obligatorischen Krankenversicherung in der Wettbewerbsordnung*. Köln: Institut für Wirtschaftspolitik. Untersuchungen zur Wirtschaftspolitik 130.

Kunreuther, H. C./Pauly, M. V./Mc Morrow, S. (2013): *Insurance and behavioral economics. Improving decisions in the most misunderstood industry*. Cambridge: University Press.

Madrian, B. C. (1994): Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job-Lock? *The Quarterly Journal of Economics*, MIT Press, 109(1), 27- 54.

Merlis, M. (2005): Fundamentals of underwriting in the nongroup health insurance market: Access to coverage and options for reform. National Health Policy Forum Background Paper, April 13, 2005.

Monahan, A./Schwarcz, D. (2010): Will employers undermine health care reform by dumping sick employees? *Virginia Law Review*, 97, 125-197, Minnesota Legal Studies Research Paper No. 10-37.

Monheit, A./ Vistnes, J. (1999): Health insurance availability at the workplace: How important are worker preferences? *The Journal of Human Resources*, 34 (4) 770-785.

Nymann, J. A. (1999): The value of health insurance: the access motive. *Journal of Health Economics* 18, 141-152.

New York Times (2008): UnitedHealth to Insure the Right to Insurance, by Reed Abelson, http://www.nytimes.com/2008/12/03/business/03insure.html?_r=0. Accessed on 24/09/2014.

Patel, V./Pauly, M.V. (2002): Guaranteed renewability and the problem of risk variation in individual health insurance markets. *Health Affairs*, suppl. Web Exclusives 2002: W280-W289.

- Pauly, M.V. (1990): The rational nonpurchase of long-term-care insurance. *Journal of Political Economy*, 98 (1), 153-168.
- Pauly, Mark V. (1997): *Health Benefits at Work*, University of Michigan Press.
- Pauly, Mark (2010): *Health reform without side effects. Making markets work for individual health insurance*. Stanford: Hoover Institution Press Publication.
- Pauly, M. V./Herring, B. (1999): *Pooling health insurance risks*. Washington D.C.: The AEI Press.
- Pauly, M. V./Herring, B. (2007): Risk pooling and regulation: Policy and reality in today's individual health insurance market. *Health Affairs*, 26 (3), 770-779.
- Pauly, M. V./Kunreuther, H./Hirth, R. (1995): Guaranteed renewability in insurance. *Journal of Risk and Uncertainty* 10, 143-156.
- Pauly, M. V./Lieberthal, R. D. (2008): How risky is individual health insurance? *Health Affairs* 27 (3), W242-W249.
- Pauly, M. V./Menzel, K./Kunreuther, H./Hirth, R. A. (2011): Guaranteed renewability uniquely prevents adverse selection in individual health insurance. *Journal of Risk and Uncertainty* 43, 127-139.
- Pauly, M.V./Nichols, Len M. (2002): The nongroup insurance market: Short on facts, long on opinions and policy disputes. *Health Affairs*, doi: 10.1377/hlthaff.w2.325
- Pauly, M./Percy, A./Herring, B. (1999): Individual versus job-based health insurance: Weighing the pros and cons. *Health Affairs* 18 (6), 28-44.
- Santerre, R. E. (2008): Which price is right: load or premium? *The Geneva Risk and Insurance Review* 33, 90-105.
- Swartz, Katherine (2006): *Reinsuring Health. Why more middle-class people are uninsured and what government can do*. New York: Russell Sage Foundation.
- Sheiner, L. (1999): Health care costs, wages, and aging. Federal Reserve Board - Division of Research and Statistics Discussion Paper 99 (19).
- Thomasson, M. A. (2003): The importance of group coverage: How tax policy shaped U.S. health insurance. *The American Economic Review*, 93 (4), 1373-1383.
- Zweifel, P./Eisen R. (2003): *Versicherungsökonomie*. Berlin: Springer.