Introduction

1.1. GENERAL INTRODUCTION

In this thesis, we will discuss private expenditure on health and voluntary private health insurance (PHI). The two themes are linked since private expenditure represents the market for PHI. Knowing and understanding private expenditure on health is a prerequisite for PHI to respond to consumer needs and to improve welfare.

The following issues will be addressed in this thesis: (i) the reliability of OECD Health Statistics; (ii) supplementary physicians' fees; (iii) access to new health technologies; (iv) the regulation of PHI markets and (v) the optimal design of PHI products.

We will focus on Belgium and neighbouring countries. As regards the regulation of PHI, we will also discuss Slovenia. All these countries are characterised by Bismarckian health care systems and complementary PHI markets. Key figures for these countries are represented in Table 1. The figures for Belgium are quite close to the EU average.

Table 1. Key figures for selected EU countries (2014)

	EU	Belgium	France	Germany	Netherlands	Slovenia
Public expenditure on health[a]	78.74%	77.6%	78.6%	84.6%[b]	80.6%	71.0%
Out-of-pocket expenditure on health[a]	15.34%	17.8%	7.0%	13.0%	12.3%	13.0%
Voluntary private health insurance[a]	4.85%	4.4%	13.7%	1.5%	5.9%	14.8%
Other financing schemes[a]	1.07%	0.2%	0.7%	0.9%	1.2%	1.2%
Percentage of total population covered by complementary PHI	n.a.	82.2%	95.5%	22.9%[c]	84.5%	72.8%

[a]: as a share of total expenditure on health
[b]: including primary (substitutive) private health insurance
[c]: In Germany, another 10.9% of the population holds primary (substitutive) private health insurance.
Figures adapted from OECD, Health at a Glance: Europe 2016

Within the context of this thesis, we will focus on complementary health insurance. Complementary insurance covers services that are excluded from the statutory benefits package or it may reimburse the costs of statutory user charges and supplementary fees charged by health care providers (Thomson and Mossialos, 2009).[1]

1 Supplementary insurance is not within the scope of this thesis. Supplementary insurance offers access to health services that are already covered by mandatory basic health insurance but gives subscribers a greater choice of provider and enables them to bypass waiting lists for publicly-financed treatments (Thomson and Mossialos, 2009). Substitutive insurance is also out of scope. Substitutive insurance provides cover for people not eligible for statutory health coverage or for those who are not required to be statutorily covered and can opt into or out of the statutory scheme (Thomson and Mossialos, 2009). Substitutive insurance plays a significant role in Germany, where about 9 million people have subscribed

In the European Union (EU), private expenditure represents -on average- 21 per cent of total expenditure on health (see Table 1).[2] Three-quarters of private expenditure or 15 per cent of total expenditure is financed out-of-pocket.[3] Voluntary private health insurance (PHI) finances only 5 per cent of total health spending in the EU (OECD, 2016).[4]

Out-of-pocket expenditure on health can negatively affect access to health care. People on low incomes and in poor health are particularly at risk. Households that face difficulties paying medical bills may postpone or even forgo the health care they need.

In the most recent Belgian Health Interview Survey (2013), 26 per cent of households stated that out-of-pocket expenditure on health is (very) hard to bear (in the lowest and highest income quintile the figures are 50 per cent and 5 per cent respectively). In 2013, 8 per cent of Belgian households had to postpone health care for financial reasons (Demarest, 2015). Chronic diseases have a particularly negative impact on the accessibility of health goods and services. 54 per cent of Belgian households with chronically ill members face financial hardship and 46 per cent need to postpone health care for financial reasons (66 per cent postpone dental care, 46 per cent medical specialist care, 44 per cent glasses and 31 per cent medication) (Samana, 2016). Research by a Belgian cancer foundation shows that private health expenses for cancer patients amount to 1,838 EUR (median) during the first year after the initial treatment. 25 per cent pays 2,844 EUR per year or more (Rommel, 2015). Recently, the term 'cancer poverty' has come into vogue (Lewis, 2017).

Out-of-pocket expenditure on health comprises both user charges on the statutory benefits package and expenditure on health goods and services that are not covered by mandatory basic health insurance.

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to substitutive health insurance. The OECD differentiates between complementary, supplementary and duplicate PHI. According to the OECD definitions, complementary insurance covers any cost sharing left after basic coverage. Supplementary insurance adds additional services and duplicate insurance provides faster access or wider choice to providers. Thomson's and Mossialos' definition of complementary insurance is broader than the definition of complementary insurance used by the OECD. In fact, the definition of complementary insurance by Thomson and Mossialos encompasses both complementary and supplementary insurance as defined by the OECD. In this thesis, we use the definitions of Thomson and Mossialos.

2 Total expenditure on health is composed of public and private expenditure. Private expenditure on health includes both out-of-pocket expenditure and expenditure covered by voluntary private health insurance (PHI).

3 Surprisingly, out-of-pocket expenditure in the EU is higher than in the United States, where out-of-pocket expenditure represents 12 per cent of total expenditure on health (OECD, 2017; figure for 2014).

4 Figures for 2014.

User charges (deductibles, co-insurance [a percentage] and co-payments [a fixed sum]) play a role in preventing the overuse of health care provision. However, these mechanisms can also allow the public sector to shift costs onto households. For instance, Thomas, Thomson and Mossialos (2015) find that this has been the case in Slovenia.

In contrast to publicly-funded care, out-of-pocket payments depend on the patient's ability to pay. Therefore, many countries have policies in place to protect categories of the population from excessive out-of-pocket payments. These comprise partial or total exemptions for social aid beneficiaries, senior citizens, or people with chronic diseases or disabilities by capping user charges, either in absolute terms or as a share of income (Paris et al., 2016). However, these policies generally provide protection against the costs of statutory user charges only. Health services and goods that are excluded from the statutory benefits package need to be paid for out-of-pocket by everybody. This is particularly true for certain pharmaceutical drugs, dental treatment and therapeutic appliances such as eyeglasses and hearing aids. Across the EU, pharmaceutical drugs account for 40 per cent of total out-of-pocket expenditure, dental care for 18 per cent and therapeutic appliances for 12 per cent. The remaining 30 per cent is constituted by curative care (OECD, Health at a Glance, 2016).

OECD Health Statistics are a widely used source for detailed information on health expenditure. OECD Health Statistics are used to analyse health policy issues over time and in comparison with other countries (Oderkirk, 2013). When analysing private expenditure on health, it is important that these statistics be reliable. Therefore, we will examine **the reliability of OECD Health Statistics as far as private expenditure on health is concerned**.

All European countries endorse equity of access to health care for all people as an important policy objective. Private expenditure on health has an important bearing on the following policy issues: (i) free choice of health care provider; (ii) access to better quality of care and (iii) waiting time. The last issue, bypassing waiting lists for publicly-financed treatment, is out of scope. This thesis focuses on Bismarckian health care systems where waiting lists tend to be less of a problem than in Beveridgean national health systems.

We will focus on the two first issues: (i) **supplementary physicians' fees** buying free choice of physician and (ii) out-of-pocket payments buying **access to new health technologies**. New health technologies -health goods and services- which are not (yet) reimbursed by basic health insurance are accessible only for patients able and willing to pay out-of-pocket. In Belgium and France, access to certain physicians is similarly only possible for patients able and willing to pay supplementary fees.

When out-of-pocket expenditure represents a significant share of total expenditure on health, welfare can be increased by PHI. However, PHI covers only a relatively small proportion of private spending on health, less than 25 per cent in most EU Member States, except for France (65 per cent), Ireland (41 per cent), Luxembourg (33 per cent), the Netherlands (30 per cent) and Slovenia (51 per cent) (OECD Health Statistics 2017, figures for 2015). It appears that private insurers in Europe are not very successful in converting out-of-pocket expenditure into PHI.

National governments concerned about the accessibility and affordability of PHI tend to impose restrictive regulation on the operation of private health insurance markets. The question is: **in how far is restrictive regulation of PHI markets in accordance with EU free market principles?**

PHI can lead to welfare gains if the advantages of health insurance outweigh the disadvantages. Advantages of health insurance are: (i) the reduction of financial risk for the insured and (ii) access to health care that would otherwise be unaffordable. Disadvantages are: (i) loading costs and (ii) moral hazard. Unfortunately, many PHI products currently are suboptimal. The question is: **how can the design of PHI products be optimised?**

In the following sections, we will expand on each of the five above-mentioned issues that will be addressed in this thesis.

1.2. RELIABILITY OF OECD HEALTH STATISTICS

Since 2005, OECD, Eurostat and WHO have been jointly collecting expenditure and financing information from OECD and EU countries.

OECD Health Statistics on private and out-of-pocket expenditure on health provide important information for the different stakeholders in the health care system. For policymakers, it is important to know how much and what kind of care is being financed privately, and for determining whether there might be a problem with the accessibility of health care. Data on private and out-of-pocket expenditure are indispensable for health insurers. Basic health insurers need to be able to measure the effect of their reimbursement policy, while insurers offering PHI need as detailed information as possible about their potential market, which is made up of privately financed care. Finally, practitioners and patients need comprehensive clarification of the costs to be borne by the patient, since treatment decisions may well be influenced by cost issues.

The OECD states that it provides 'accurate, reliable and timely data on health spending that is comparable across OECD countries and over time' (OECD, 2015). Doubts about the reliability of the OECD data for private expenditure on general hospitals in Belgium have led us to critically examine Belgian official data on private health expenses.

Research questions:

1. *In how far are OECD Health Statistics on private expenditure on health for Belgium reliable?*
2. *What are the major obstacles to a correct estimation of private expenditure on health?*

1.3. SUPPLEMENTARY PHYSICIANS' FEES

A supplementary fee is an extra fee charged by health care providers on top of the tariff agreed upon by the health insurance system.[5]

Both in Belgium and in France, supplementary physicians' fees are a 'hot' issue. Physicians can charge supplementary fees in case of special demands made by the patient (e.g., a late-night consultation). In Belgium, any physician can charge supplementary fees for households whose taxable income exceeds 67,636 EUR per year (figure for 2017). Physicians who choose not to be bound by social security tariffs - 'sector 2' and 'non-conventioned' physicians in France and Belgium respectively- can charge supplementary fees to all patients in all circumstances. In Belgian hospitals, supplementary fees can be applied by any physician if the patient is staying in a private room.

Patients who are not willing or not able to pay supplementary fees may not be treated by the physician of their choice.

Table 2 shows that there is a huge span in private expenditure between a private room and a double or common hospital room in Belgium. The span can be explained through supplementary fees and -to a lesser extent- room charges, neither of which may be charged in a double or common room. In 2015, supplementary fees represented 61 per cent of private expenditure for a classic hospital stay in a private room (Mutualité Chrétienne, 2016).

5 In Belgium, the terms '*ereloonsupplement*' (Dutch) and '*supplément d'honoraires*' (French) are used for a fee charged on top of the official tariff set by the social security system. In France, the term '*dépassement d'honoraires*' is applied. In North America, the terms 'extra billing' and 'balance billing' are used.

Table 2. Average private expenditure for an admission in a Belgian hospital (EUR, 2015) (Source: Mutualité Chrétienne, 2016)

	Private room	Double or common room
Classic hospital stay (min. 1 night)	1463	278
Surgical one-day clinic	735	122
Non-surgical one-day clinic	437	25

For certain categories of self-employed medical specialists, supplementary fees constitute a substantial part of their income (see Table 3). Supplementary fees represent -on average- respectively 35 per cent and 32 per cent of the gross income of Belgian and French surgeons in hospitals.[6]

Table 3. Supplementary fees as a percentage of gross income of sector 2 physicians (France)/self-employed physicians (Belgium) providing inpatient care in 2010 (DREES, 2012; Swartenbroekx, 2012).

	France	**Belgium**
Specialism	**% of gross income**	**% of gross income**
Stomatology	45.6%	15.9%
Surgery	31.9%	34.7%
Gynaecology	29.5%	34.9%
Ophthalmology	25.3%	10.1%
Oto-rhino-laryngology	20.8%	12.3%
Anaesthesia	16.7%	31.5%
Paediatrics	16.7%	21.1%
Psychiatry	16.6%	4.2%
Gastro-enterology	11.6%	11.5%
Radiology	4.0%	13.4%
Cardiology	4.0%	15.0%
Pneumology	4.0%	5.8%

Both in Belgium and France, hospitals also benefit from supplementary fees. In most hospitals, physicians have to cede a certain percentage of their supplementary fees to the hospital to help finance overhead costs.

Expenditure on supplementary fees is increasing at a pace far exceeding the growth rate of total expenditure on health. So far, measures taken in Belgium and France to curb cost inflation of supplementary fees have not yet resulted in a stabilisation or a reduction of supplementary fees.

6 Only the income earned in hospitals has been taken into account. Supplementary fees charged outside of the hospitals are not included.

In this thesis, we calculate estimates for expenditure on supplementary fees in Belgium. We discuss figures on the cost (evolution) of supplementary physicians' fees in Belgium and France. Measures taken to contain costs are then evaluated. The added value of the supplementary fee system for physicians and patients is also investigated. Finally, the future of supplementary fees in Belgium and France is discussed.

Research questions:

3. *What is the cost (evolution) of supplementary physicians' fees in Belgium and France?*
4. *How can cost inflation of supplementary physicians' fees be contained?*
5. *What is the added value of supplementary physicians' fees?*
6. *Is a system of supplementary physicians' fees charged on top of social security tariffs sustainable?*

1.4. ACCESS TO NEW HEALTH TECHNOLOGIES

New health technologies come on the market at a rapid pace and -sometimes- at a huge cost. Providing access to new health technologies is a serious challenge for many countries with mandatory basic health insurance.

While mandatory basic health insurance generally covers a broad range of health technologies, new technologies may not be -readily- covered because of budgetary reasons or because there is (as yet) no unanimity about their evidence-based character or their medical necessity. National health authorities can decide not to cover a new health technology, even if the technology has been acknowledged by health technology assessment (HTA) centres and/or is covered by health insurers in other countries.

Today, the HTA Core Model is widely used for the assessment of new health technologies. The model enables effective international production and sharing of HTA results in a structured format (Lampe et al., 2009). The model emphasises the multidisciplinary nature of assessments, employing the following nine domains: (1) health problem and current use of technology, (2) description and technical characteristics of technology, (3) safety, (4) clinical effectiveness, (5) costs and economic evaluation, (6) ethical analysis, (7) organisational aspects, (8) patients and social aspects and (9) legal aspects.[7]

The fifth domain, 'costs and economic evaluation', is particularly important for the reimbursement of new health technologies by health insurance. Economic evaluation

7 The HTA Core Model is available at: https://www.eunethta.eu/hta-core-model/.

has been defined as a comparative analysis of alternative courses of action in terms of both their costs and consequences (Drummond et al., 2015). The aim of the costs and economic evaluation domain is to inform value-for-money judgements about health technologies with information about costs, health-related outcomes and economic efficiency (Canadian Coordinating Office for Health Technology Assessment, 1994). Five main types of economic evaluation can contribute to HTA: cost-effectiveness analysis, cost-utility analysis, cost-consequences analysis, cost-benefit analysis, and cost-minimisation analysis. Cost-effectiveness analysis (CEA) compares the costs and effects of at least two alternative technologies. The results of such analysis are generally expressed in the form of an incremental cost-effectiveness ratio (ICER). An ICER represents the estimated difference in costs between the comparators divided by the estimated difference in effect between the comparators. In an example where the effects of the comparators are measured in life years, the estimated ICER could be reported as the cost per life-year gained. The ICER approach is currently the most widely used outcome of economic evaluations. Whether a technology can be referred to as 'cost-effective' depends on its relation to any extant 'decision-makers' willingness-to-pay' or 'societal willingness-to-pay' for an additional unit of health outcome (so-called 'ICER threshold'). If one main aim of a health system is to maximise health-related outcomes given the resources available, a technology can be considered as being 'cost-effective', i.e. improving economic efficiency in health care, if its ICER estimate is lower than a threshold value (or threshold range). If the estimated ICER is higher than the threshold, the technology is not considered to be cost-effective and hence allocation of resources to this technology would be unlikely to increase economic efficiency in health care (Cleemput et al., 2009).

The issue of access to new health technologies can best be illustrated by some examples. The first example concerns several countries whereas the other examples relate to the situation in Belgium.

About one per cent of the population in Western countries is infected with the hepatitis C virus. Hepatitis C can lead to liver cirrhosis and liver cancer. Recently, new medication has come on the market which can eradicate the hepatitis C virus. However, since this medication costs 30000 to 50000 EUR per patient and about one per cent of the population is affected, reimbursement by mandatory health insurance in many countries is limited to patients already suffering from liver cirrhosis. People infected with the hepatitis C virus who want to avoid developing liver cirrhosis need to pay for the new medication out-of-pocket.

In Belgian hospitals, there are lists with out-of-pocket payments for well-defined health technologies that are available for the patient. Whereas standard treatment A is

covered by mandatory basic health insurance, for treatment B, applying a new health technology, one must pay the listed additional out-of-pocket payments. An example of a treatment which -between 2011 and 2014- needed to be paid for out-of-pocket is the trabecular metal hip (2500 EUR), which is used to replace failed hip implants. The use of trabecular metal increases implant stability and enables biologic in-growth, which can help lead to long-term fixation. An orthopaedic surgeon explained how he made the choice between a classic hip implant, paid for by mandatory basic health insurance, and a trabecular metal hip implant, to be paid for out-of-pocket: 'The trabecular metal hip implant option is discussed only with financially well-off patients. It is very awkward to discuss a treatment option with patients who cannot afford it.'

In case of an amputation of the leg above the knee, patients in Belgium can choose between (electro)mechanical and microprocessor-controlled prosthetic legs. The microprocessor-controlled prosthetic leg is the closest technology has come to natural walking. In Belgium, mandatory basic health insurance only reimburses electro-mechanical prosthetic legs. Patients who want a microprocessor-controlled prosthetic leg have to pay about 30000 EUR out-of-pocket. After 5 to 7 years, the prosthetic leg needs to be replaced.

Carotid artery stenting is a procedure that can be used to open a narrowed carotid artery. It involves placing a small, expandable tube called a stent in the narrowed artery. There are two carotid arteries-one on each side of the neck- that supply blood to the brain. These arteries can be narrowed and damaged by fatty deposits called plaque. If this plaque breaks open, it may form a blood clot, which could move to the brain and cause a stroke. Carotid artery stenting may improve blood flow to the brain and lower the risk of stroke. Carotid stents are not reimbursed by mandatory basic health insurance in Belgium. Carotid stents -which cost between 1000 and 1500 EUR- must be financed out-of-pocket by patients.

The last example concerns the latest developments in cancer treatments, where the ability to pay out-of-pocket can make an important difference. The MammaPrint test is a genomic test that analyses the activity of certain genes in early-stage breast cancer. The MammaPrint test can be used to help make treatment decisions based on the cancer's risk of recurrence within 10 years after diagnosis. Knowing if a woman has a high or low risk of early-stage breast cancer recurring might help women and their doctors decide if chemotherapy or other treatments to reduce risk after surgery are needed. The MammaPrint test is reimbursed by health insurers in the United States (e.g., Aetna) and in the Netherlands, but not by mandatory basic health insurance in Belgium. In Belgium,

patients need to pay 3000 EUR out-of-pocket for this test.[8] A Belgian patient reports being told by her physician that physicians are not allowed to discuss tumour genomic tests, which need to be paid for out-of-pocket, to avoid patients' having to refuse tests which they cannot afford.[9]

The Christian Mutuality is the largest 'sickness fund' in Belgium, providing mandatory basic health insurance but also offering PHI. In November 2017, the Christian Mutuality stated that PHI is a must in case of a hospitalisation, even when the patient does not choose a private room: 'Supplementary physicians' fees cannot be charged in a double room. However, the patient bill can still be high. Certain costs are not reimbursed by mandatory basic health insurance. For instance, certain hip implants, intraocular lenses and materials for fracture fixation. Costs can be high in a double room. These costs have to be paid for out-of-pocket.'[10] (Christian Mutuality, 2017)

Using Belgium and the Netherlands -two neighbouring countries- as case studies, we will discuss and analyse different options for policymakers to deal with new health technologies.

Research questions:

7. *Are new health technologies equally accessible for patients in Belgium and the Netherlands?*
8. *What can be the role of voluntary private health insurance in providing access to new health technologies?*

1.5. REGULATION OF PHI MARKETS

In the European Union (EU), PHI is, in principle, subject to free market rules and competition. As an exception, governments may impose rules restricting free competition when

8 Cf. Belgian newspaper article (2017) 'Ik moest tegen de volgende dag 3000 euro vinden, anders geen kankeronderzoek' (translation: I had to find 3000 EUR by the next day, or else: no cancer test), *Het Nieuwsblad*, 30 March 2017. Available at http://www.nieuwsblad.be/cnt/dmf20170330_02808104.

9 Cf. Belgian news magazine article (2014) 'Genen sturen de strijd tegen kanker: […] Ik kreeg te horen dat artsen [genoomtesten] zelfs niet mogen voorstellen, omdat men wil vermijden dat mensen een behandeling moeten weigeren omdat ze er geen geld voor hebben. […]', *Knack*, 21 May 2014.

10 'In een kamer voor twee of meer personen mogen inderdaad geen ereloon- en kamersupplementen aangerekend worden. Toch kan de factuur ook dan hoog oplopen. Want er kunnen wel bedragen worden aangerekend die niet worden terugbetaald door de ziekteverzekering en dus niet worden meegeteld voor de maximumfactuur. Dat zijn bijvoorbeeld niet-vergoedbare implantaten zoals bepaalde heupprothesen, sommige lenzen bij cataractoperaties of fixatiemateriaal bij botfracturen. [..] Deze kosten moet je dan volledig uit eigen zak betalen.'

PHI serves as a partial or complete alternative to health cover provided by the statutory social security system ('substitutive health insurance'). However, notwithstanding the EU's non-life insurance Directives' application to PHI, in some Member States governments have restricted the application of free market rules in the PHI market. In order to curb the -often high- premium rate increases under PHI contracts, a 'medical index' has been created by law in Belgium. Premium rates can only be increased in line with the consumer price index or the medical index.[11] Only when a PHI product is (expected to be) loss-making may the supervisory authority, the National Bank of Belgium, grant permission to increase premiums.[12] However, the question arises whether such regulation, restricting the free market, is in the best interest of consumers. For instance, the medical index cannot be negative, even if the cost evolution in health care were to be. Another issue is that a medical index of this sort could act as a disincentive for insurance companies to reduce costs, because they know that in the end cost increases will be covered by the medical index. In this way, the application of medical indices could even have an inflationary effect.

In Belgium, PHI mainly covers hospital care. About half of the money reimbursed by PHI relates to the cost of a stay in a private hospital room. Since the quality of care in a private room is no better than in a double or common room, it might be difficult to uphold the view that special protection from government is needed to secure access to private hospital rooms.

In France, a tax exemption is granted to PHI products which do not apply selective underwriting. It is not sure whether this is an ideal situation since selective underwriting is needed to counteract adverse selection to protect existing clients against free riders who abuse the insurance system.

Recent European Court of Justice (ECJ) case law has created uncertainty about the application of the free market principles outlined in the EU non-life insurance Directives. The ECJ has taken different views in two cases (Commission v. Slovenia (2012)[13] and DKV Belgium SA v. Association belge des consommateurs Test-Achats ASBL (2013)[14]) on the

11 A law introduced on 17 June 2009 restricted increases in premium rates for existing contracts to increases in the consumer price index or the medical index if and in so far as the evolution of the medical index exceeds that of the consumer price index (Article 204 Insurance Law). The medical index reflects the evolution of the patient bill. Because the medical index did not include a provision to revalorise ageing reserves, the medical index was annulled by the administrative court on 29 December 2011. By royal decree of 16 March 2016, a new medical index has been created, including -on top of the claims evolution- a provision of maximum 2 per cent to cover the revalorisation of ageing reserves.

12 Art. 204, §4 Insurance Law ('Loi du 4 avril 2014 relative aux assurances', *Moniteur belge*, 30 April 2014).

13 Case C-185/11, *Commission* v. *Slovenia* ecli:eu:c:2012:43.

14 Case C-577/11, *DKV Belgium SA* v. *Association belge des consommateurs Test-Achats ASBL* ecli:eu:c:2013:146.

question whether government intervention in setting the prices of PHI contracts is consistent with EU regulation. On the one hand, in its ruling of 26 January 2012 in Commission v. Slovenia, the Court concluded that Slovenia's rules on complementary health insurance did not comply with the EU non-life insurance Directives. The Court found that a number of provisions in the Slovenian Health Care and Health Insurance Act ('*Zakon o zdravstvenem varstvu in zdravstvenem zavarovanju*' ('zzvzz')) did not comply with some of the basic freedoms outlined in the EU's non-life insurance Directives. By contrast, by its ruling of 7 March 2013 in DKV Belgium SA, the Court upheld the system of restrictive price regulation of existing PHI contracts in Belgium. The Court accepted a requirement of prior notification and approval of proposed increases in premium rates in the Belgian context but not in the Slovenian context.

We will analyse the impact of the two differing ECJ rulings on the application of free-market principles on PHI markets in the EU. We will discuss the arguments made in favour and against restrictive regulation. Starting from the Belgian and Slovenian ECJ cases on price regulation in the PHI market, we will broaden the discussion to the question of the extent to which free market rules effectively apply to PHI.

Research questions:

9. *To what extent do free market rules effectively apply to voluntary private health insurance?*
10. *What is the future role of voluntary private health insurance within the framework of social health insurance systems in the European Union?*

1.6. OPTIMAL DESIGN OF PHI PRODUCTS

Since private expenditure on dental care is quite substantial in most EU countries, we have chosen to focus on complementary dental insurance to discuss the issue of optimal design of PHI products.

Health insurance is meant to protect against financial risk and to render access to health care that would otherwise be unaffordable. In the Netherlands, private dental insurance can be bought, which provides a cover limit of 250 EUR per year only. Such products are unlikely to provide financial security. In Belgium, France and the Netherlands, reimbursement of prosthetic dental treatment (e.g., implants, bridges and crowns) by most private dental insurance products is limited to 1000 EUR per year or less. These products do not really improve access to costly dental treatment such as implants. The cost of an implant is -on average- 2500 EUR. It is not exceptional that 4 implants are needed.

The risk of being confronted with a total cost of 10000 EUR, of which only 1000 EUR will be reimbursed, is unlikely to give the insured 'peace of mind'. PHI products offering (very) limited coverage do not protect against financial risk nor do they provide access to health care that would otherwise be unaffordable.

We develop a framework for optimal health insurance design. The current situation of complementary dental insurance in four European countries, Belgium, France, Germany and the Netherlands, is examined. We then look for potential explanations for the gap between the current offering of dental insurance products and an optimal design of dental insurance. We conclude with a discussion on how to improve dental insurance design.

Research questions:

11. *How can the gap between the current offer of dental insurance products and an optimal design of complementary dental insurance be explained?*
12. *How can current complementary dental insurance design be improved?*

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Note: Apart from the work of Sarah Thomson and Elias Mossialos and some other authors, there is little international literature on private expenditure on health and voluntary private health insurance. We have tried to use all available international literature. We have also extensively made use of policy documents.

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