

# Differences in price elasticities of demand for health insurance: a systematic review

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**Abstract** Many health insurance systems apply managed competition principles to control costs and quality of health care. Besides other factors, managed competition relies on a sufficient price-elastic demand. This paper presents a systematic review of empirical studies on price elasticity of demand for health insurance. The objective was to identify the differing international ranges of price elasticity and to find socio-economic as well as setting-oriented factors that influence price elasticity. Relevant literature for the topic was identified through a two-step identification process including a systematic search in appropriate databases and further searches within the references of the results. A total of 45 studies from countries such as the USA, Germany, the Netherlands, and Switzerland were found. Clear differences in price elasticity by countries were identified. While empirical studies showed a range between  $-0.2$  and  $-1.0$  for optional primary health insurance in the US, higher price elasticities between  $-0.6$  and  $-4.2$  for Germany and around  $-2$  for Switzerland were calculated for mandatory primary health insurance. Dutch studies found price elasticities below  $-0.5$ . In consideration of all relevant studies, age and poorer health status were identified to decrease price elasticity. Other socio-economic factors had an unclear impact or too limited evidence. Premium level, range of premiums, homogeneity of benefits/coverage and degree of forced decision were found to have a major influence on price elasticity in their settings. Further influence was found from supplementary insurance and premium-dependent employer contribution.

**Keywords** Health insurance · Price elasticity · Systematic review · Managed competition

**JEL Classification** I13 · G22 · D12

## Introduction

An increasing number of health systems apply Enthoven's managed competition concept in order to control value and costs. These systems use "rules for competition, derived from microeconomic principles, to reward with more subscribers and revenue those health plans that do the best job of improving quality, cutting cost, and satisfying patients", as defined by Enthoven [1]. One major aspect of these microeconomic principles is a well-established price competition based on a sufficient price-elastic demand. In the US, the rules of managed competition have already been applied for an extensive period and numerous publications on price elasticity are therefore available (see [2] and [3] for basic reviews). In Europe on the other hand, managed competition did not exist until major health care reforms in some countries in the 1990s introduced choice and competition to their social health insurance systems. With the advent of these reforms, price elasticity was also subject to research in these countries. However, until now this comprehensive body of literature has not been systematically reviewed, nor were any systematic comparisons and conclusions drawn.

The objective of this systematic literature review is to summarize the current knowledge on price elasticity of demand for health insurance in managed competition settings and to answer the following research questions:

1. What ranges of price elasticities can be found in different settings internationally?

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2. Can conclusions be drawn in regard to the significance of certain socio-economic parameters such as age, gender or income on price elasticity of individuals?
3. Can any conclusion be drawn on the significance of setting parameters, such as price level or homogeneity of benefits, as well as on facilitating or hindering price competition?

To the best of my knowledge this is the first review that gives a comprehensive and systematic overview of research relating to the price elasticity of health insurance both in the US and on an international level. The remainder of this article is organized as follows: Section “**Methods**” will describe the methodology used in the systematic literature search. Section “**Results**” will present the results found and answer the three research questions. Finally, conclusions of the results will be presented in Section “**Conclusion**”.

## Methods

### Search strategy

For this systematic review a two-step identification process was applied. The first step involved a systematic search for empirical studies on price elasticity of health insurance demand. In the second step the results from the systematic search were used to identify possible further research on the topic through a manual search of the references’ results.

### Systematic search

The databases *Academic on File*, all *EBSCO* host databases, *Embase*, *Medline*, all *ProQuest* databases, *Science Citation Index*, and *ScienceDirect* were searched to identify related work to the research questions. The terms (“price sensitivity” OR “price elasticity” OR “managed competition”) AND (“health insurance” OR “sick\* fund” OR “health plan”) AND Year = 1995–2013 were used to search in each of the mentioned databases. The research was limited to go no further back than 1995 so as to only identify studies conducted in the last 20 years. While there are several older studies, starting in the 1970s, health insurance settings have changed significantly since then, rendering the results of older studies not representative for today’s health insurance markets. In extensions to explaining this, Royalty and Solomon [4] also discuss distinct methodical limitation of prior work. Furthermore, a review of research on price elasticity before 1997 is provided by Scanlon et al. [2].

In addition, the German databases *GVK*, *ECONIS*, and *WISO* were specifically searched with the above search terms and their corresponding German translation.

The research was conducted in July 2013 and produced a total of 3,420 individual results. Figure 1 gives an overview of the results by source and of the further process of selection.

### Inclusion and exclusion criteria

Abstracts (and where necessary the full texts) were manually checked against the following inclusion and exclusion criteria, which are in line with the research questions:

#### Inclusion criteria:

- Empirical studies estimating price elasticities of individuals or households for their choice of health insurance

#### Exclusion criteria:

- Studies only estimating companies’ price elasticities to offer health insurance
- Studies only estimating price elasticities of individuals for take-up/drop-down of health insurance.<sup>1</sup> These studies were excluded because of the differences in nature of the decisions compared to plan choice decisions
- Studies only estimating income price elasticities (of individuals)
- Studies calculating semi-elasticities of demand for health insurance
- Studies estimating price elasticities based on other prices than a recurrent premium fee or rate
- Studies estimating price elasticities of demand for health services and products other than insurance (e.g. hospital treatment, drugs, medical appliances etc.)
- Theoretical and conceptual articles as well as reviews
- Articles not published in English or German

As a result, the number of relevant articles for this review was reduced to 41.

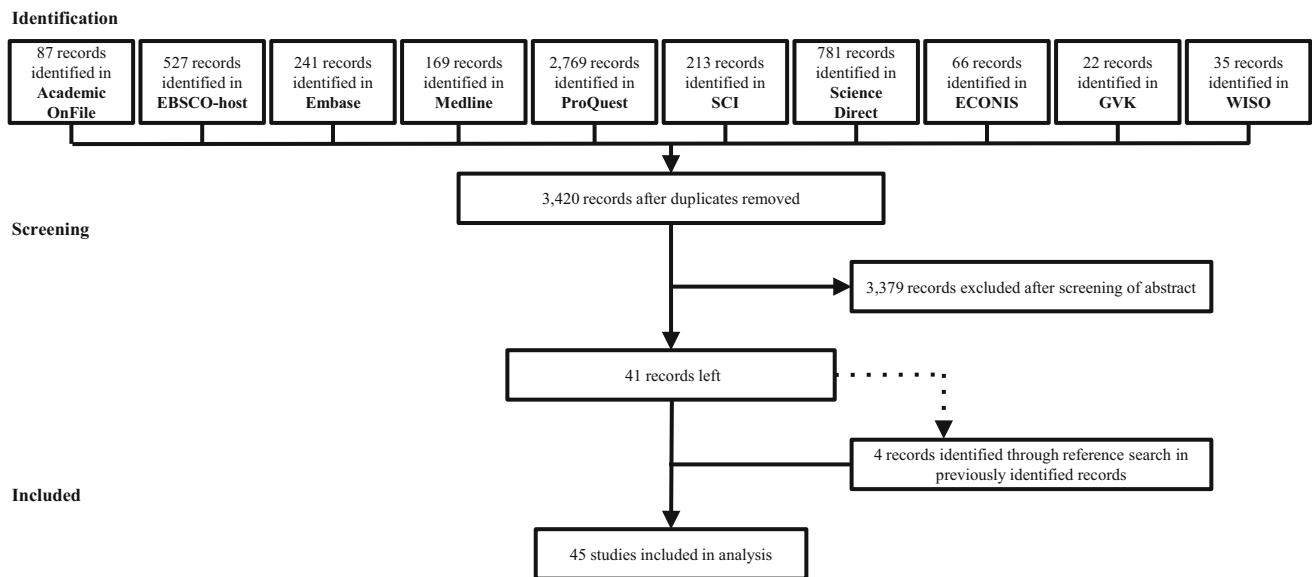
### Reference search

In the second step the reference lists of the results from step one were manually searched for further relevant studies. The above inclusion and exclusion criteria were used again to assess the eligibility of further sources for this literature review. The reference search produced four additional results.

### Definition of price elasticity measurement and data collection

The (own) price elasticity of demand can generally be defined as a measurement of the responsiveness of

<sup>1</sup> In some settings, drop of health insurance is an available option, which can therefore be an aspect of included studies but not the main research objective.



**Fig. 1** Flow chart of the literature search

demand to a change of the price. In this particular field of research, price elasticity expresses a change of enrollees of a health plan when the health plan's premium increases or decreases. In most settings premiums are subsidized by a sponsor, e.g. an employer or a governmental agency. Therefore, the premium can be measured as perceived by the enrollee or as perceived by the insurance company.

Thus, one has to distinguish between individual-perspective price elasticity and insurer-perspective price elasticity. The individual-perspective price elasticity, also called out-of-pocket, enrollee-perspective or employee-perspective price elasticity, will only use the premium share paid by the insured individual as the price. The insurer-perspective or total price elasticity will use the total premium as the price, including both contributions to the premium by the individual and by the sponsor. Both price elasticities differ when any change in premium is not split between enrollee and sponsor in the same manner as the previous premium was. This is especially encountered in US employer settings, where the employer pays a fixed dollar contribution (that does not change when the premium increases), resulting in much higher insurer-perspective price elasticity as compared to price elasticity from the employee perspective. For comparison of price elasticity values between studies only individual-perspective elasticities are used in this review. Therefore, if not stated otherwise all price elasticity figures are individual-perspective.

Since health plans can be regarded as substitutes, another way to examine demand changes as a reaction towards premium changes would be the estimation of cross-price elasticity. Cross-price elasticity of demand is a

measurement of the responsiveness of demand for one good to a change in price of another good. Here an increase in price of one health plan leads to an expectation of an increase of enrollees in other health plans (that is switching out of the first health plan). However, only two of the identified studies estimated cross-price elasticities [5, 6]. Furthermore, the modulus of one single health plan's own price elasticity should be equal to the sum of cross-price elasticities for all other health plans plus the outside good (dropping health insurance if feasible). Thus, cross-price elasticity gives more insight into which alternatives are chosen but no additional information on the level of price competition itself. For this reason cross-price elasticity of demand is not further investigated in this review.

## Results

### Studies on price elasticity

Through the two-step research process, a total of 45 relevant studies were found and included in the literature review on price elasticity. Table 1 gives an overview of these studies. The studies are divided into four different categories according to the insurance system in which they are put in place. First, there are studies in optional primary health insurance; second, studies in mandatory primary health insurance; third, studies for complementary health insurance (insurance that increases reimbursement levels), and finally studies for duplicate and/or supplementary health insurance which coexists with a National Health Service (NHS) or another single public institution, where a

**Table 1** Overview of price elasticity studies

Author	Country	Setting	Year of study	Data source (data points)	# of plan choices	Main findings
Optional primary health insurance						
Abraham et al. [8]	USA	Employer-sponsored health insurance	2001–2002	Random survey on employees of 16 smaller companies (total 651)	17	Insurer-perspective price elasticity $-1.60$
Abraham et al. [9]	USA	Employer-sponsored and non-group health insurance with multiple sources	1996	Medical Expenditure Panel Survey (total 1,713 households)	1 to more than 6	Price elasticity with single source between $-0.09$ and $-0.79$ . Price elasticity with two choice options between $-0.04$ and $-0.32$
Atherly et al. [10]	USA	State-sponsored health insurance (Medicare Part C)	1998	Medicare Current Beneficiary Survey	Depending on county (319 total)	Individual-perspective price elasticity of $-0.13$ . Insurer-perspective price elasticity of $-4.57$
Beaulieu [11]	USA	Employer-sponsored health insurance	1994–1997	Data of Harvard University employees	10	Insurer-perspective price elasticity between $-1.95$ for older and $-4.76$ for younger employees
Buchmueller [12]	USA	Employer-sponsored health insurance	1993–1996	Data of University of Stanford retirees	3 to 6	Price elasticity between $-0.09$ and $-0.22$ for FFS plans by region
Buchmueller [13]	USA	Employer-sponsored health insurance	1997–2002	Data of retirees of a single employer (total 724)	3	Mean individual-perspective price elasticity of $-0.27$ (ranging between $-0.14$ to $-0.37$ by plan). Mean insurer-perspective price elasticity of $-3.30$
Buchmueller et al. [14]	USA	Employer-sponsored health insurance	2002–2005	Data of University of Michigan retirees (total 3,182)	8	Mean individual-perspective price elasticity of $-0.03$ (ranging between $-0.02$ and $-0.07$ ). Mean insurer-perspective price elasticity of $-1.47$ (ranging from $-0.97$ to $-2.20$ )
Carlin and Town [5]	USA	Employer-sponsored health insurance	2002–2004	Data from a single, self-insured employer	6	Mean price elasticity of $-0.05$ in the preferred model
Chan and Gruber [15]	USA	State-sponsored health insurance (Massachusetts' Commonwealth Care program)	2007–2008	Data on new and existing enrollees in the state program	6	Mean price elasticity of $-0.65$ for existing enrollees and $-0.72$ for new enrollees
Cutler and Reber [16]	USA	Employer-sponsored health insurance	1996	Data of Harvard University employees	2	Mean individual-perspective price elasticity of $-0.30$ and $-0.60$ in the first and second year, respectively. Mean insurer-perspective price elasticity of $-2.00$
Dafny et al. [17]	USA	Employer-sponsored health insurance	1998–2006	Data from several large employers	1 to 3 and more, depending on county (365 total)	Mean price elasticity of $-0.28$ (ranging between $-0.08$ and $-0.45$ by industry of the employer)
Dowd and Feldmann [18]	USA	Employer-sponsored health insurance	1988–1993	Data from five large employers from two cities (Minneapolis and St. Paul)	7	Insurer-perspective price elasticity of $-7.90$
Dowd et al. [19]	USA	Employer-sponsored health insurance	1994	Survey data on one public employer (total 755)	Depending on county (755 total)	Price elasticity of $-0.81$ for singles and $-0.86$ for families <sup>a</sup>

Table 1 continued

Author	Country	Setting	Year of study	Data source (data points)	# of plan choices	Main findings
Dowd et al. [20]	USA	State-sponsored health insurance (Medicare Part C)	1999	Medicare Part C enrollment data	319	Price elasticity of $-0.65$
Goldman et al. [21]	USA	Employer-sponsored health insurance	1989–1991	Data of employees of a single large employer (total 14,221)	4	Price elasticity of $-0.70$ calculated by the author <sup>b</sup>
Kiinger [22]	USA	Employer self-insured health insurance	1987	National Medical Expenditure Survey	Not stated	Mean price elasticity of $-0.05$ (ranging between $-0.02$ and $-0.07$ )
Liu and Christianson [23]	USA	State-sponsored health insurance	1993	Data from the HealthcareGroup of Arizona and from a researcher's survey (total 653)	2	Price elasticity for individuals without prior insurance between $-0.12$ and $-0.14$ . Price elasticity for individuals with prior insurance between $-0.42$ and $-0.51$
Long and Marquis [24]	USA	State-sponsored health insurance	1997	Robert Wood Johnson Foundation Washington State Survey (total 1,846)	Not stated	Price elasticity between $-0.30$ and $-0.70$
Marquis and Long [25]	USA	Employer-sponsored and non-group health insurance	1987/1988	Current Population Survey (CPS) (total 1,131) and the Survey of Income and Program Participation (SIPP) (total 2,444)	Not stated	Price elasticity between $-0.27$ and $-0.40$
Parente et al. [26]	USA	Employer-sponsored health insurance	2002	Data of University of Minnesota employees	4	Price elasticity for singles was between $-0.39$ (healthy) and $-0.58$ (chronically ill). Price elasticity for families between $-0.16$ to $-0.79$ (healthy) and $-0.17$ to $-0.31$ (chronically ill)
Royalty and Solomon [4]	USA	Employer-sponsored health insurance	1993–1995	Data of University of Stanford employees	5	Mean individual-perspective price elasticity of between $-0.45$ and $-0.76$ . Corresponding insurer-perspective price elasticity between $-2.25$ and $-3.50$
Santerre [27]	USA	Employer-sponsored, state-sponsored, and non-group health insurance	1960–2004	Data from the Health Insurance Association of America and the US Census Bureau	Not stated	Price elasticity of $-0.19$
Scanlon et al. [28]	USA	Employer-sponsored health insurance	1996–1997	Data of general motors employees (total ~96,000)	2–6 depending on market (2.5 on average, 69 total)	Price elasticity of $-0.67$ with report cards
Strombom et al. [29]	USA	Employer-sponsored health insurance	1993–1997	Data of University of California employees (total 103,835)	7–11 (depending on year)	Insurer-perspective price elasticity $-2.47$
Wedig and Tai-Seale [30]	USA	Employer-sponsored health insurance	1995–1996	Data of federal employees (total 9,162)	Up to 5 (depending on county and year)	Price elasticity for existing employees without quality report cards of $-0.02$ and $-0.13$ with quality report cards. Price elasticity for new hires of $-0.14$ without and $-1.05$ with quality report cards

Table 1 continued

Author	Country	Setting	Year of study	Data source (data points)	# of plan choices	Main findings
Mandatory primary health insurance						
Schmitz and Ziehbarrh [34]	Germany	German statutory health insurance	2002–2010	Aggregated data on the sickness fund level of 5 of the largest sickness funds	169–355 (depending on year)	Price elasticity pre-reform of $-0.60$ . Price elasticity post-reform $-1.80$ for add-on premium and $-0.90$ for reimbursement
Schut et al. [35] <sup>c</sup>	Germany	German statutory health insurance	1996–2001	Aggregated data on the sickness fund type level	396–642 (depending on year)	Price elasticity between $-1.39$ (earlier years) and $-4.31$ (later years)
Schut et al. [35] <sup>c</sup>	Germany	German statutory health insurance	1996–2000	Aggregated data on the sickness fund level (including a total of 44 funds)	396–642 (depending on year)	Price elasticity of $-3.45$ for 1997 to 2000
Schwarze and Andersen [36]	Germany	German statutory health insurance	1999–2000	Data from statutory insured individuals collected through an annual socio-economic panel	420–642 (depending on year)	Price elasticity of $-4.20$ calculated by the authors <sup>d</sup>
Tamm et al. [37] <sup>b</sup>	Germany	German statutory health insurance	2001–2004	Aggregated data on the sickness fund level (including all funds)	280–396 (depending on year)	Short-term price elasticity of $-1.09$ . Long-term price elasticity of $-12.00$ to indefinite
Douven et al. [38]	Netherlands	Dutch mandatory insurance	1996–2007	Aggregated data on the sickness fund level (including all funds)	21–29 (depending on year)	Short-term price elasticity between $-0.04$ and $-0.25$ before 2006. Higher price elasticity of $-7.00$ (2006) and $-2.00$ (2007) in later years
Schut et al. [35] <sup>c</sup>	Netherlands	Dutch mandatory and supplementary insurance	1996–2000	Aggregated data on the sickness fund level (including all funds)	27	Price elasticity between $-0.14$ (overall) and $-0.41$ (later years). Supplementary insurance has a mixed price elasticity over the years between $-0.37$ (overall) and $+0.02$ (later years)
Schut and Hassink [39]	Netherlands	Dutch mandatory and supplementary insurance	1996–1999	Aggregated data on the sickness fund level (including all funds)	25	Price elasticity for mandatory insurance $-0.28$ . Price elasticity for supplementary insurance $-0.84$
van Dijk et al. [40]	Netherlands	Dutch mandatory and supplementary insurance	1993–2002	Individual-level data for sickness fund switchers <sup>e</sup>	20	Price elasticity between $-0.08$ and $-0.41$
Beck [41]	Switzerland	Swiss mandatory health insurance	2001	Data from enrollees of one single major Swiss health insurance company (total 100,000)	Not stated	Mean price elasticity of $-1.39$ (ranging between $-0.03$ and $-3.07$ depending on age and insured time)
Diserens [42]	Switzerland	Swiss mandatory health insurance	2000	Aggregated data on insurer level	Not stated	Price elasticity between $-0.30$ and $-1.10$ by region
Rütschi [43]	Switzerland	Swiss mandatory health insurance	2002	Swiss Health Survey 2002 (total 1,621)	Sample restricted to 12 choices	Mean price elasticity of $-2.23$ (ranging between $-1.90$ and $-2.60$ )
Complementary health insurance						
Aishanqee [31]	USA	Complementary state-regulated and partially sponsored health insurance (Medicare Part D)	2009	Data of Medicare Part D enrollees from the Center for Medicaid and Medicare Services	On average 50 (depending on county)	Price elasticity of $-2.25$



Table 1 continued

Author	Country	Setting	Year of study	Data source (data points)	# of plan choices	Main findings
Frakt and Pizer [32]	USA	Complementary state-sponsored health insurance (Medicare Part D)	1997	Data of prescription drug plan (PDP) enrollees	47–63 (depending on county)	Price elasticity of $-1.45$
Lucarelli et al. [6]	USA	Complementary state-sponsored health insurance (Medicare Part D)	2006	Aggregated data from the Centers for Medicare and Medicaid Service	Variable depending on county (1,415 total)	Insurer-perspective price elasticity between $-2.20$ and $-8.40$
Starc [33]	USA	Complementary state-regulated health insurance (Medigap)	2006–2008	Aggregated plan data from the National Association of Insurance Commissioners)	12	Price elasticity of $-1.17$
Duplicate and supplementary health insurance coexisting with NHS or other single public institution						
Costa and García [44]	Spain (Catalonia)	Duplicate non-group health insurance	1999	Data from a survey by the researchers (total 400)	Not stated	Price elasticity of $-0.43$
Ellis and Savage [45]	Australia	Supplementary partially state-sponsored health insurance	1997–2000	National Household Survey (total 13,358)	Not stated	Price elasticity for singles of $-0.60$ and for families of $-0.40$
Fernandez [46]	Chile	Duplicate non-group health insurance	2009	Database of Chilean private insurance enrollees (1.5 million)	877	Mean price elasticity of $-1.57$ (preferred model)
Finkelstein [47]	Canada	Supplementary employer-sponsored health insurance (outpatient drugs)	1991/1994	Canadian General Social Survey (total 5,377)	Not stated	Price elasticity of $-0.46$
Gerrits [48]	Australia	Supplementary partially state-sponsored health insurance	1990–2003	Data of enrollees from the Australian Private Health Insurance Administration Council	Not stated	Mean price elasticity of $-0.13$ (ranging between $-0.11$ and $-0.15$ )

<sup>a</sup> Calculation by the authors based on information and results given in the article

<sup>b</sup> Calculation is an arc price elasticity based on the Goldman et al. [21] finding that 10 % price increase will lead to a 7 % (additional) loss in enrollees

<sup>c</sup> Schut et al. [35] gave two different calculations for Germany (based on two different data sources) as well as one calculation for the Netherlands in their article

<sup>d</sup> Calculation is an arc price elasticity based on the Schwarze and Andersen [36] finding that 1 % price increase will lead to a 4.2 % loss in members

<sup>e</sup> Disregarding self-employed, unemployed and elderly (>65 years of age) population

private health insurance offers same (duplicate) or extended (supplementary) benefits compared with the public alternative.<sup>2</sup> Table 2 in the Appendix provides an overview of health insurance coverage by OECD countries. This table gives an understanding of which countries generally have a relevant market in the given categories.

In regards to settings with optional primary health insurance, a total of 25 studies were found exclusively for the United States. Eleven studies addressed mandatory primary health insurance. A further four studies were found for complementary health insurance, and seven studies covered duplicate/supplementary insurance.

### Price elasticity ranges

Estimations for price elasticity of health insurance differ widely in a range of 0 to  $-4$ . When examining the results with regards to the underlying settings, distinctive and narrower ranges can be identified. Figure 2 gives a graphical overview of mean values and ranges found in the identified literature. The graph is organized by the four different types of setting.

#### *Optional primary health insurance*

The majority of the studies were conducted on optional primary health insurance in the United States. This implies that health insurance is mainly provided through an employer. Thus, several studies estimated price elasticity using data from one or several employers that offered choice in health plans. In these settings individuals can choose one health plan out of a menu of different yet—when it comes to benefits—highly standardized plans.

Several studies used employee data from universities. Being major employers, having a wider set of choices with standardized benefits and providing easier access to data makes them a preferred setting for these studies. In their study of Stanford University employees, Royalty and Solomon [4] found<sup>3</sup> a price elasticity between  $-0.45$  and  $-0.76$  with a mean value of  $-0.55$ . In a similar situation at Harvard University Cutler and Reber [16] found an out-of-pocket elasticity of  $-0.3$  and  $-0.6$  in two consecutive years after a reform in health plan subsidies by the university. Estimating price elasticity of consumer-driven health plans at the University of Minnesota, Parente et al.

[26] found a price elasticity range between  $-0.16$  and  $-0.79$ .

A few studies analyzed data of other distinctive private or governmental employers. For federal employees, Wedig and Tai-Seale [30] reported price elasticities between  $-0.13$  and  $-1.05$ , depending on job tenure. Based on analysis of data from US city and county administrations by Dowd et al. [19] price elasticity between  $-0.81$  and  $-0.86$  can be calculated.<sup>4</sup> In a study with General Motors employees Scanlon et al. [28] found a mean price elasticity of  $-0.67$ . Carlin and Town [5] used data from a single self-insured employer and a rather uncommon multinomial probit approach to estimate a very low price elasticity of  $-0.05$ . Using the more widely used approach of multinomial nest logit, they found a, still low, mean price elasticity of  $-0.14$ . Goldman et al. [21] investigated data from a single, large employer and found an increase in switching and insurance drop-down rate that allows a calculation of a  $-0.7$  price elasticity.<sup>5</sup> Kicingier [22] used the National Medical Expenditure Survey also to estimate price elasticities of self-insured employer-based plans, finding a rather low mean elasticity of  $-0.05$ .

Other studies used survey data including data points from several employers and heterogeneous benefits. Abraham et al. [9] examined survey data from the Medical Expenditure Panel Survey and estimated price elasticity between  $-0.04$  and  $-0.79$  for families with one or two sources of insurance. Also using survey data, Long and Marquis [24] estimated price elasticity between  $-0.3$  and  $-0.7$  for low-income individuals. Similarly, Dafny et al. [17] used panel data including many employers from different industries to find price elasticity ranging between  $-0.08$  and  $-0.45$  by industry, with a mean of  $-0.28$ .

Buchmueller and Buchmueller et al. extensively researched the case of employer-sponsored health insurances for retirees and estimated low price elasticities of  $-0.09$  to  $-0.22$  [12],  $-0.27$  [13], and  $-0.034$  [14].

Individuals who are not eligible for employer-sponsored health insurance can gain health insurance coverage through individual, non-group coverage (or remain uninsured). In this setting, Marquis and Long [25] estimated a price elasticity range of  $-0.27$  and  $-0.40$ . Santerre [27] conducted a study using data from the US Census Bureau between 1960 and 2004 for all types of private health insurance, finding an overall price elasticity of  $-0.19$ .

Besides employer-sponsored health insurance, other state-sponsored and state-regulated programs offer choices

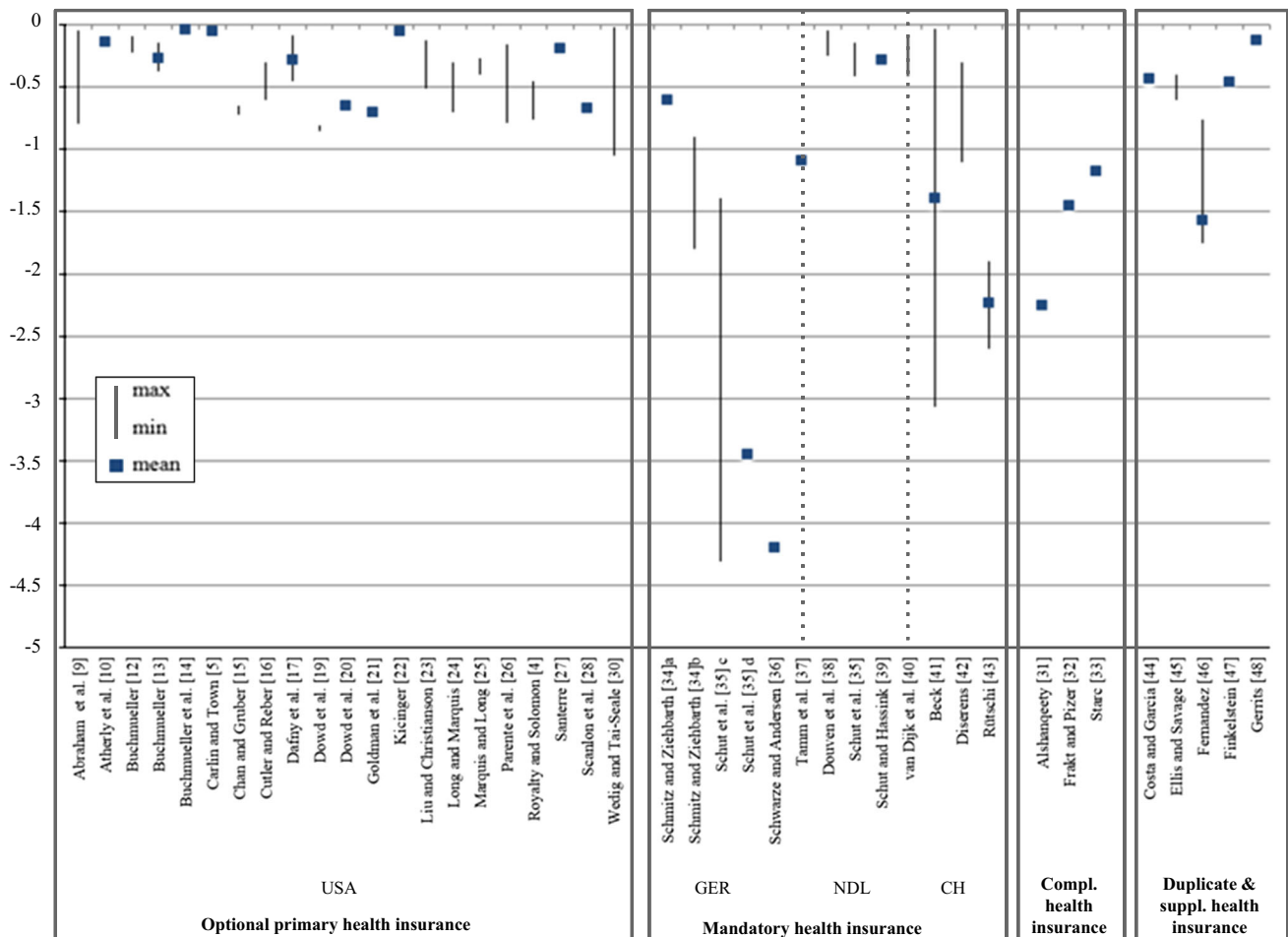
<sup>2</sup> A comprehensive overview of private health insurance coverage of selected OECD countries is provided by Colombo and Tapay [7].

<sup>3</sup> Using an estimation based on fixed effects they found higher price elasticities ranging between  $-0.97$  and  $-1.75$  [4]. While the authors technically preferred this model, the results are not representative for the entire Stanford University population, since the calculation only includes actual switchers.

<sup>4</sup> Even though Dowd et al. [19] do not explicitly state a price elasticity, given the data in their study an employee-perspective price elasticity can be calculated.

<sup>5</sup> The result is an arc price elasticity calculation by the authors based on the Goldman et al. [21] finding that a 10 % price increase will lead to a 7.0 % loss in enrollees.





- a Germany, pre-reform
- b Germany, post-reform introducing add-on premiums
- c Germany, using sickness fund type level data
- d Germany, using sickness fund level data
- e Netherlands

**Fig. 2** Overview of individual-perspective price elasticity ranges

in health insurance mainly for individuals who cannot afford regular private health insurance.

Two studies examined price elasticity in the Medicare Part C program (also known as Medicare Advantage or Medicare + Choice) that offers the possibility for those eligible for Medicare, mostly elderly, to obtain health insurance through private insurers. Atherly et al. [10] stated a mean price elasticity of  $-0.13$  while Dowd et al. [20] estimated a mean of  $-0.65$ . In order to widen health insurance coverage and reduce the uninsured population, several states are running their own health insurance programs. The Massachusetts' Commonwealth Care program (offering health plans for poorer individuals and families that are not eligible for other sources of health insurance) was analyzed by Chan and Gruber [15] in regard to price elasticity. They estimated an elasticity range of  $-0.65$  to  $-0.72$ . Similarly, the Healthcare Group of Arizona was

studied by Liu and Christianson [23] to find elasticity between  $-0.12$  and  $-0.51$ .

*Mandatory primary health insurance*

The European health insurance is dominated by NHS or mandatory public insurance based systems.<sup>6</sup> Historically they did not offer any choices for the wider population. However, in the 1990s some countries passed health insurance reforms to allow more choice and therefore promoted managed competition in the health insurance sector. This led to several studies on price elasticity in Germany, the Netherlands, and Switzerland.

<sup>6</sup> For an overview of the health systems of most countries discussed in this review as well as other OECD countries see [49].

In Germany, statutory health insurance and private health insurance for universal coverage exist side by side. However, only the statutory health insurance has been studied for price elasticity. The statutory health insurance is mandatory for most individuals and insures about 85 % of the population. More than 100 non-profit health insurance companies, called sickness funds, compete against each other, providing extensive coverage. Early studies in Germany found very high price elasticities in international comparisons. Schut et al. [35] used aggregated data on the sickness fund level to estimate price elasticity. They found steadily increasing price elasticities,<sup>7</sup> starting from  $-1.39$  to  $-4.31$  in their research period between 1997 and 2001. These results are in line with results from a study by Schwarze and Andersen [36] that demonstrated an estimated price elasticity of  $-4.2$  for the years 1999 and 2000.<sup>8</sup> With data from the later years 2001 to 2004, Tamm et al. [37] found a lower elasticity of  $-1.09$ . Another study using data from 2002 to 2010 gives an even lower estimate of  $-0.6$  [34], which comes close to the US estimates discussed before. In 2009, the way sickness funds charged for their coverage changed from a price expressed as percentage of an individual's wage (and deducted by payroll) to an absolute euro value paid monthly directly by the individual.<sup>9</sup> The previously mentioned study of Schmitz and Ziebarth [34] found a higher price elasticity of  $-1.8$  as of the time when the absolute value insurance premium was implemented.

Before 2006 the Netherlands also had a dual health insurance system that offered a somewhat limited choice since 1992. For the majority of the population a mandatory health insurance was offered by about 25 non-profit sickness funds. Since the primary insurance did not cover all costs, most individuals bought supplementary insurance offered by these sickness funds. In 2006, the mandatory health insurance was expanded to the entire population and the former private insurance companies were also allowed to offer the primary insurance on a non-profit basis.

An early study by Schut et al. [39] covering the time period 1996 to 1998 estimated a price elasticity of  $-0.3$  for primary and  $-0.8$  for supplementary insurance. With panel data from the same years, Schut et al. [35] identified price elasticities between  $-0.14$  and  $-0.41$ , increasing from year to year. Using just slightly more recent data, researchers found price elasticities of  $-0.08$  to  $-0.41$  [40] and  $-0.04$  to  $-0.25$  [38] for primary insurance. Since the important

reform in 2006 bringing more choice to the Dutch statutory health insurance, information on price elasticity has been scarce. Only Douven [38] estimated an extremely high price elasticity of  $-7$  for the reform year 2006 and a somewhat normalized price elasticity of  $-2$  for 2007.

Switzerland has mandatory primary health insurance for all individuals that is provided by private profit and non-profit insurance companies. Almost 100 compete against each other; however, not in every region. In total, three studies estimated price elasticity for the Swiss mandatory market using different data sources and methods of calculation. Their findings are comparable, namely a high price elasticity similar to the German level. Beck [41] used data from one major insurer to find price elasticities between  $-0.03$  and  $-3.07$  for several very fine-cut subgroups with respect to age and insured time. His mean elasticity estimation is  $-1.39$ . Based on aggregated data on the insurer level, Diserens [42] found somewhat lower price elasticities between  $-0.3$  and  $-1.1$  by region. In the most recent Swiss study Rüttschi [43] found a higher price elasticity of  $-2.23$  based on survey data.

#### *Complementary health insurance*

Studies on complementary health insurance were conducted on the Medicare Part D and Medigap programs in the United States.

For Medicare Part D, which is a complementary prescription drug plan for the elderly, two different studies estimated individual-perspective price elasticities. Frakt and Pizer [32] found a mean price elasticity of  $-1.45$  for prescription drug plans (PDP) while Alshanteety [31] estimated a higher mean value of  $-2.25$ . Starc [33] investigated Medigap plans, complementary plans for Medicare inpatient and outpatient coverage, finding a price elasticity of  $-1.17$ .

#### *Duplicate and supplementary health insurance*

Countries with National or Local Health Services often have duplicate or supplemental insurance markets. Studies on price elasticity were conducted for some of these markets.

In Australia, where supplemental health insurance alongside the NHS is even partially subsidized by the government, Ellis and Savarge [45] estimated an elasticity range of  $-0.4$  to  $-0.6$  based on survey data. In contrast, using Private Health Insurance Administration data for approximately the same years, Gerrits [48] found a lower range of  $-0.11$  to  $-0.15$ . In Spain the private health insurance sector exists in addition to the Local Health Services, providing health insurance with more coverage and better quality of care. Costa and García [44]

<sup>7</sup> In Germany a differentiation of insurer-perspective and individual-perspective is not necessary until 2005, since the premium and any price increase were equally split between employer and employee.

<sup>8</sup> The result is an arc price elasticity calculation by the authors based on the Schwarze and Andersen's [36] finding that a 1 % price increase will lead to a 4.2 % loss in members.

<sup>9</sup> For a general overview on the 2009 German health reform, see [50].

investigated this setting in Catalonia and estimated a mean price elasticity of  $-0.43$ .

For the supplementary insurance in Canada, Finkelstein [47] reported a mean price elasticity of  $-0.46$ . For duplicate health insurance in Chile, Fernandez [46] estimated a mean price elasticity of  $-1.57$  in his preferred model.

#### Influence of socio-economic factors on price elasticity

Several studies identified in the systematic literature search report information on variations in price elasticity by age, gender, income, health status, etc. This section addresses and discusses findings related to price elasticity linked to these socio-demographic attributes of health plan enrollees.

##### Age

Numerous studies found lower price elasticity for older individuals. Royalty and Solomon [4], for instance, found a price elasticity of  $-0.94$  for the age group of 30 years<sup>10</sup> and a much lower elasticity of  $-0.28$  for the 50-year age group in their study with Stanford University employees. Other research found comparable results in other US settings [11, 29].

A relatively low price elasticity was also estimated in several studies that only concentrated on the investigation of the elderly or retired population [12–14].

In other countries, despite all the differences in the systems, similar results have been reported. In Germany, Schut et al. [35] estimated an approximately 2–3 times lower price elasticity for retirees than for non-retirees. In the Netherlands, van Dijk et al. [40] found a continuously decreasing price elasticity with increasing age when comparing 10-year age cohorts. Likewise, Schut et al. [35] found a lower price elasticity for Dutch retirees compared to non-retirees. However, these results were not significant. In Switzerland, both Beck [41] and Rüttschi [43] found lower price elasticity for older enrollees.

In Spain, Costa and García [44] identified mixed results in the private health insurance market. While the price elasticity increased with age until 64 years, it decreased for retirees that were older than 64 years. Fernandez [46] found similar results in his investigation of the Chilean private health insurance. He estimated increasing price elasticity with age until the age of 55. Older age cohorts are not included in this study. Age-adjusted premiums in private health insurance might explain this difference. Increasing prices could lead to higher price elasticity in more senior-aged individuals with limited resources [44].

While this overview clearly shows lower price elasticity with increasing age in almost all settings, age might only

be a representation of other influential characteristics. Royalty and Solomon [4] found evidence that at least some of the age effect on elasticity might be a representation of wealth. Furthermore, age could represent differences in health or experience (with insurance and medical issues) leading to a difference in price elasticity. Buchmueller [13] pointed out that older individuals might interpret higher price as a signal for better quality, and therefore are less price sensitive.

##### Gender

Only a few studies investigated gender differences in price elasticity and found unclear results. Van Dijk et al. [40] found in their Dutch study that male individuals have higher price elasticity regarding primary as well as supplementary health insurance. On the other hand, Fernandez [46] found that female enrollees are clearly more price sensitive. While van Dijk et al. [40] researched the mandatory primary health insurance, Fernandez [46] studied duplicate health insurance. This could be an explanation for the difference. However, adequate evidence is lacking for more meaningful conclusions.

##### Family

Many studies analyzed differences in price elasticity between singles, married couples and family households. However, they found mixed results. While several studies found the price elasticity of singles to be higher than that of families, approximately the same numbers of studies led to converse results. Studies finding higher price elasticity for singles have been conducted in US employer-sponsored health insurance [11] and duplicate health insurance settings in Australia [45]. Comparable studies finding price elasticity higher for families were conducted in US employer-sponsored health insurance settings [19, 26]. In contrast, a study by Abraham et al. [9] found no significant difference. One possible explanation for these notable differences in price elasticities may be variations in the exact settings, e.g. whether family coverage is available, whether other sources of insurance are available, and whether family members are dependent or not. One would expect that greater choice due to more options of health insurance leads to a decrease in price elasticity for a family. Auerbach and Ohri [51], for example, pointed out that having a second source for health insurance might lead to lower price sensitivity when choosing a health plan.

##### Income

Some studies investigated price elasticity differences by income. Atherly et al. [10], Auerbach and Ohri [51], and

<sup>10</sup> Royalty and Solomon [4] give no further information on the exact range of the age group.

Marquis and Long [25] found higher price elasticity with poorer households, defined here as 200 % below the poverty line. Both studies used survey data from the US. Given that for an income-independent premium poorer individuals and households pay relatively more for their health insurance, this result appears to be quite rational.

### *Health status*

Several studies tried to assess the health status of individuals (either through self-assessment by the individual or by objective figures) with the aim of relating it to price elasticity. Strombom et al. [29] used hospitalization and cancer diagnosis data to identify high- and low-health-risk individuals in his sample. He found a significantly lower price elasticity for the high-risk individuals while controlling for age and job tenure. Taking advantage of self-reported health status in their survey data, Auerbach and Ohri [51] found a lower (but not significant) price elasticity of  $-0.497$  for individuals of fair and poor health in contrast to  $-0.592$  for the general population. In Switzerland, Rüttschi [43] found comparable results when using visits to doctors as a proxy for health status. Individuals with more than ten consultations a year had significantly lower price elasticity than the general population. In comparison, this effect had, however, less of an influence on price elasticity than the factor of age. Subsequent to the reform in Germany, Schmitz and Ziebarth [34] found that healthier individuals react more strongly and are more price sensitive towards the change in health insurance pricing than the less healthy ones. To identify health status, they used self-assessment and reported health conditions. In complete contrast, Parente et al. [26] found price elasticity to be about twice as high for employees with a chronic condition than without.

### *Education*

In their university-setting study, Royalty and Solomon [4] found lower price elasticity for individuals with higher education that could not be entirely explained by other factors such as income, wealth or faculty membership. The authors concluded that a higher income might lead to higher cost of time, thus increasing the transaction cost for switching health plans.

### *Other*

Other characteristics of individuals and their effect on price elasticity were investigated by singular studies. Investigating duplicate health insurance in the presence of a NHS in Spain, Costa and García [44] found price elasticity to be higher when the quality of NHS care is perceived to be higher, rendering private health insurance less valuable.

The authors also found lower price elasticity for individuals living in the capital of the investigated region (Catalonia). As a possible reason for these results they argued that access to private health care is greater in urban areas than in rural areas.

### *Influence of setting-oriented factors on price elasticity*

While price estimates in similar countries and settings do not differ by much, differences between distinct settings can be explained by differences in features of these settings. Several authors attempted to explain possible reasons for price elasticity differences. The following will summarize the arguments and draw conclusions from the entire body of health insurance price elasticity literature found in the systematic search.

Between the settings at hand, major differences exist in the need or obligation to be insured, price level and in benefits/coverage. Clear differences in all of these can be found between primary health insurance (insurance that covers most health expenses) and complementary insurance (insurance that covers additional expenses such as prescription drugs or better care service). For complementary insurance in the US, researchers found a range of between  $-1.17$  and  $-2.25$  for price elasticity, which is clearly higher than the price elasticity of US primary insurance that lies below the  $-1$  threshold. In their investigation of complementary prescription drug plans (Medicare Part D) Frakt and Pizer [32] gave three possible explanations for this. First, since these health plans were newly established, all new enrollees were obliged to choose a plan to obtain insurance. Thus, unlike in established insurance relationships, no status quo bias exists in the 1st year. Second, drug plans do not affect patient-provider relationships that are typical in primary health plans in the US. Therefore, transition costs should be regarded to be lower by the switcher. Third, entry to the market was easier for insurance companies, since no provider networks had to be built that would have involved upfront costs. This resulted in a more competitive market. In contrast, supplementary health insurance in countries with NHSs displays lower elasticities, similar to the US primary insurance estimation (see Fig. 2). These findings seem to confirm the previous argument, since duplicate insurance in Australia and Spain is not new and also brings the need for a preferred/own provider network, therefore sharing more similarities with US primary insurance than US complementary insurance.

### *Price level*

Monthly premiums differ widely between the identified studies. While enrollee-perspective premiums could be as

low as zero in some employer sponsored offerings, other studies found monthly premiums of much higher value e.g. \$200 in the US [28] or (on average) €167 (\$217<sup>11</sup>) in Germany [34]. Several researchers concluded that differences in base price levels in their studies could explain differences in price elasticity estimates. Both Buchmueller [52] and Scanlon et al. [28] argued that their mean premium, which is 6 to 10 times higher than in comparable studies, might be the reason for their findings of higher price elasticities. However, Schut et al. [35] found that the approximately 5-times-higher premiums in Germany compared to Dutch premiums cannot alone explain higher price elasticity in Germany. In their study they adjusted for different price levels and still found German price elasticity to be higher.

Other than higher monthly expenses, a higher level of premiums may also lead to higher (absolute) differences between premium rates and therefore higher possible savings by switching. Beck [41] saw the main reason for the higher price elasticity in Switzerland in comparison to the Netherlands in the higher premium difference in Switzerland. He argued that higher possible savings are more likely to outweigh search and transition costs, thus increase price elasticity. Schut et al. [35] used the same argument to explain the higher price elasticity in Germany compared to that found in the Netherlands, namely the higher price differences in Germany.

#### *Homogeneity of benefits and coverage*

Settings that have a high degree of homogeneity of coverage and benefits are more likely to show higher price elasticity. By standardizing the health insurance offering either through an employer program, state program or social security laws, health plans are created as closer substitutes, thus increasing price sensitivity. Some researchers explained their findings based on this argument. Abraham et al. [9] concluded that the lower price elasticity found in studies based on national surveys, such as theirs, compared to single employer studies, could be explained by higher variations in plan offerings in these multiple company settings. Buchmueller and Feldstein [53] also acknowledged higher emphasis on price differences in their setting because of highly standardized benefits by the employer. However, it has to be noted that more standardized health plans bring the benefit of easy comparison, better understanding of choices and higher price competition but limit the possibility of satisfying different needs in the market.

Besides the major setting attributes illustrated above, several other minor attributes, which may only be relevant for a few settings, might explain differences in price elasticity.

#### *Number of alternatives*

Another reason for higher price elasticity found in mandatory health insurance in Europe could be the larger set of choices in these settings as Schut et al. [35] as well as Schut and Hassink [39] argued for Germany and the Netherlands, respectively. While in the US choice is limited to a pre-selected choice set of usually not more than 10 health plans, more than 20 sickness funds compete against each other in the Netherlands and more than 100 in Germany.<sup>12</sup> Switzerland, with more than 200 health insurances would fall into the same category. The fact of more sickness funds being available is regarded by the researchers as an indicator of higher competition and therefore higher pressure on premium rates. Similarly, research on Medical Part D, another health insurance market with many available health plans, also found relatively high price elasticities [31, 32]. Then again, research in similar fields shows that too much choice might inhibit optimal decisions [54].

#### *Switching costs*

In the US, health plans are often connected with preferred provider networks to regulate expenses. Therefore, switching health plan may mean having to also switch providers. Established patient-provider relationships could therefore decrease willingness to switch in these settings [29], thus resulting in lower price elasticity as compared to settings where provider and insurance are not interlinked. Royalty and Solomon [4] found, indeed, that chronically ill individuals strongly value these relationships. In a setting such as Germany on the other hand, with coverage and benefits defined by law and free choice of provider, switching cost should be minimal [34].

#### *Status quo bias*

In addition to actual differences in switching costs, occurrence and intensity of status quo bias [56, 57] may vary by settings. In general the reluctance of individuals to switch health insurance when not necessary is a common argument as to why price elasticity is relatively low in almost all settings. The effect of status quo bias can be assessed when individuals are forced to choose a (new) health plan. Wedig and Tai-Seale [30] found price elasticity of new hires to be 7-

<sup>11</sup> The euro value is converted to US dollars with a 1:1.3 conversion rate and rounded to full dollars.

<sup>12</sup> During the research periods of the cited studies the number of sickness funds in Germany was even higher at 200 and above.



to 8-fold higher than for existing employees. Since new employees are often forced to choose a new insurance (or to drop insurance) because of their change of job, the forced decision resolves status quo bias and can explain the higher elasticity. Goldman et al. [21] also confirmed higher likelihood of switching for individuals with less tenure, and in Swiss mandatory health insurance, Beck [41] found that longer enrollment time leads to lower price elasticity. In the Netherlands, a large group of formerly privately insured self-employed individuals were forced to switch into mandatory primary insurance. For forced choices, both Schut et al. [35] and Douven et al. [38] estimated a much higher price elasticity than for other individuals who just switched the sickness fund voluntarily. In a US employer-sponsored health insurance setting, Strombom et al. [29] found similar results when comparing existing employees with new hires. New hires were more likely to be influenced by price and to choose cheaper health plans. This is consistent with Royalty and Solomon [4], who stated that new hires were significantly more likely to choose a newly established, cheaper plan. Bundorf et al. [58] also came to the conclusion that initial choice brings more price sensitivity than later choices with an existing enrollment. Therefore, one might conclude that forced decisions encourage a higher price elasticity, since the switching inhibitors discussed earlier tend to become obsolete. Settings where more forced insurance choices are the rule are more likely to have a greater tendency for higher price elasticity. This is the case, for example, in the US where a job change is likely to bring a health plan change, unlike e.g. in the Netherlands or in Germany.

#### *Time in market/customer experience*

A few researchers argued (somewhat against status quo bias) that more experience with health plans and switching would lead to higher price elasticity through a learning process by the individuals. For three settings with newly introduced insurance or choice in insurance coverage, timelines of good comparable price elasticities are available. Alshanteety [31] found increasing price elasticity in Medicare Part D plans in the years after its introduction, while Schut et al. [35] found increasing price elasticity after the reforms that brought choice to the German and Dutch mandatory health insurance. In contrast, however, Douven et al. [38] found price elasticity to dramatically increase to  $-7.0$  after a health insurance reform. Increased choice, awareness thereof, and high media exposure in this year might explain this.

#### *Supplementary insurance*

In the Netherlands and Switzerland a supplementary insurance exists, which covers medical services that are not

included in the mandatory primary insurance, such as dental care or medical appliances. This supplementary insurance is normally purchased from the same insurer as the primary insurance. While the mandatory insurance is highly regulated, individuals can be refused a supplementary insurance and be charged premiums based on age or medical conditions. Even though there is no legal need, individuals tend to buy both through the same insurer. Access to supplementary insurance therefore may inhibit switching of the primary insurance, and may explain to great extent the lower price elasticity found in primary health insurance, as argued by Douven et al. [38]. Likewise, Beck [41] in Switzerland showed a lower price elasticity for enrollees of primary insurance with a supplementary insurance contract. Research by Dormont et al. [55] supports this by highlighting a significant negative impact of supplementary insurance subscription on switching behavior for individuals with non-optimal self-assessed health status. The authors showed that the health status itself is not the reason for the negative relationship.

#### *Push to lower prices*

A specific feature of the German mandatory health insurance market that might explain part of the high price elasticity found there, is participation of employers in premium payments. Unlike in other settings such as the Netherlands (and to some extent the US in recent years) where employers pay a fixed dollar amount towards the premium regardless of which insurance is chosen, in Germany the employer used to pay a share of the sickness fund's individual rate until the reform of 2009. Thus, if the employee switched to a less expensive sickness fund, the employer also saved on expenses. Therefore, employers had an incentive to persuade their employees to switch, as Schut et al. [35] argued, which may explain more price-conscious decisions and higher price elasticity.

## **Conclusion**

This review summarizes systematically and comprehensively the current knowledge on price elasticity of health insurance for enrollees in managed competition. Studies were found to estimate price elasticities for the US primary and complementary health insurances, European mandatory health insurance (Germany, the Netherlands, and Switzerland) and duplicate or supplementary health insurance (Australia, Canada, Spain, Chile).

Despite major differences in statistical methodology and data sources used, clear-cut price elasticity ranges have been identified for the different settings. In the US



employer- or state-sponsored primary health insurance price elasticities were typically found to be between  $-0.2$  and  $-1.0$ . In comparison, higher price elasticities, between  $-0.6$  and  $-4.2$  for Germany, and around  $-2$  for Switzerland were calculated in the identified studies. The Netherlands, however, clearly seems to have lower price elasticities of below  $-0.5$ , as the studies before the 2006 reform suggest.

In the search for socio-economic factors influencing price elasticity, fairly strong evidence was found suggesting that age and poorer health status seem to decrease price elasticity. Effects of gender and family status have an unclear impact when comparing all studies. For job tenure, income and education, only limited evidence was available.

Furthermore, the identified articles were searched for evidence of setting-oriented parameters influencing price elasticity. Major factors that increase price elasticity were found to be premium level and premium range, homogeneity of benefits/coverage and degree of forced decision. Some factors that only apply for one specific setting were also identified as a possible explanation for the differences in price elasticities shown before. These factors include additional supplementary insurance in the Netherlands or premium-dependent employer contribution in Germany. For policy makers these findings provide a wide set of tools for balancing price competition in health insurance markets at a desired level.

This review and comparison is not without limitations. Two concerns are the differences in methodologies and data sources of the included studies. Unfortunately, no standardized and widely agreed method is used in price elasticity research. This has to be taken into consideration in all comparisons and conclusions. Furthermore, it has to be acknowledged that some US studies focus their research on other questions, such as adverse selection and price elasticity is only investigated as a “byproduct”. Additionally, evidence from Europe is partially dated. This is particularly the case for the Netherlands where almost no information could be found on price elasticities in the years following the 2006 reform. A similar lack of research also exists in Germany, with only one recent study which is based only on one out of five sickness fund types [34].

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## Appendix

See Table 2.

**Table 2** Tenets of OECD country health insurance systems

Country	Supplier of primary health insurance	Determination of health insurance affiliation
Australia	National health services	
Austria	Multiple insurers	No choice
Belgium	Common health insurance scheme	
Canada	Local health services	
Chile	Common health insurance scheme	
Czech Republic	Multiple insurers	Choice among several insurers
Denmark	Local health services	
Estonia	Common health insurance scheme	
Finland	Local health services	
France	Multiple insurers	No choice
Germany	Multiple insurers	Choice among several insurers
Greece	Multiple insurers	No choice
Hungary	National health services	
Iceland	National health services	
Ireland	National health services	
Israel	Multiple insurers	Choice among several insurers
Italy	National health services	
Japan	Multiple insurers	No choice
Korea	Common health insurance scheme	
Luxembourg	Common health insurance scheme	
Mexico	Multiple insurers	No choice
Netherlands	Multiple insurers	Choice among several insurers
New Zealand	National health services	
Norway	Local health services	
Poland	Common health insurance scheme	
Portugal	National health services	
Slovak Republic	Multiple insurers	Choice among several insurers
Slovenia	Common health insurance scheme	
Spain	Local health services	
Sweden	National health services	
Switzerland	Multiple insurers	Choice among several insurers
Turkey	Common health insurance scheme	
United Kingdom	National health services	

**Table 2** continued

Country	Supplier of primary health insurance	Determination of health insurance affiliation
United States	Multiple insurers and national/state health service	Choice among several insurers in most cases

*Sources:*

Colombo and Tapay [7]

Fernandez [46]

Health Systems and Policy Monitor [59]

Health Systems and Policy Monitor [60]

Laske-Aldershof et al. [61]

Paris et al. [49]

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