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Economic and Monetary Policy

Reflections on the development of relative prices in the healthcare sector*

FFA Note, June 2023

Preface

This brief note is part of preparatory work for the new edition of the Federal Finance Administration's long-term expenditure projections for the Swiss healthcare sector, which will be published in 2024. This note deals with the relevance of relative prices as a cost driver in the scenarios of the long-term healthcare expenditure projections.

After setting the scene in section 1, the development of relative prices in the Swiss healthcare sector is described in section 2. Section 3 discusses problems in measuring the prices of healthcare services. Section 4 discusses the Baumol variable as a proxy for relative price developments. Section 5 concludes.

1. Introductory remarks

Besides ageing, rising incomes and technological progress, the development of relative prices is argued to be a major structural cost driver of healthcare expenditures. Baumol's cost disease is considered to be a major reason for the relative price effect (see Baumol 1967). It is the central justification for the inclusion of relative prices in the scenario of previous expenditure projections for the Swiss healthcare sector (see Brändle and Colombier 2022). Baumol's cost disease affects the labour market. As per Baumol's hypothesis the healthcare sector is characterised by relatively low labour productivity growth, as it is very labour intensive. In order to keep wages in the healthcare sector competitive relative to those in the productive sectors in the long term, they must grow in line with productivity progress in these sectors. This results in permanent wage pressure, which leads to above-average inflation in the healthcare sector.

Wage pressure can also result from a shortage of skilled workers in the healthcare sector. For Switzerland, it is expected that in the next ten years there will be a considerable shortage of nursing staff and that it will be possible to meet the demand for doctors only if the number of doctors immigrating, especially from neighbouring countries, remains high (see Mercay et al. 2021; Burla et al. 2022). The latter condition is doubtful, given that the population in neighbouring countries is ageing too.

Further reasons for a relative price effect are inefficiencies in the provision of healthcare services and in price and tariff negotiations.[1] These latter inefficiencies can be explained, for example, by information asymmetries in favour of pharmaceutical manufacturers and service providers vis-à-vis government agencies and healthcare insurance funds.

[1] With regard to existing inefficiencies in the Swiss healthcare sector, a study by Brunner et al. (2019) of Zurich University of Applied Sciences Winterthur (ZHAW) and INFRAS was presented, which estimates the existing efficiency potential at between 16% and 19% of services under the Health Insurance Act (HIA). 40% of this efficiency potential can be attributed to price inefficiencies and 60% to quantity inefficiencies such as the patient demand that is generated by the service providers' knowledge advantages and is not medically induced.

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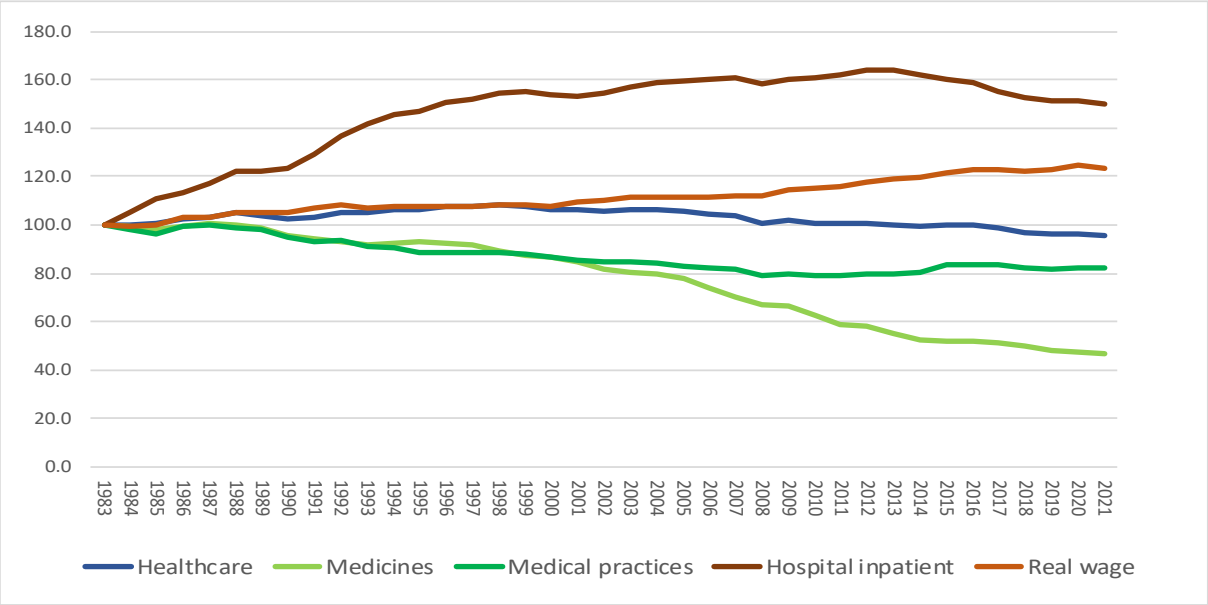
2. Development of relative prices in the Swiss healthcare sector

Contrary to the hypotheses outlined above, the development of the price indices reported by the Federal Statistical Office (FSO) does not suggest a disproportionate increase in prices in the healthcare sector relative to the price level for the economy as a whole. In order to illustrate the relative price effect, Figure 1 shows the price indices in relation to the national consumer price index (CPI). The healthcare price index, as a sub-index of the CPI, is the most comprehensive index available for the price development in the healthcare sector. The other price developments shown in Figure 1 are represented by selected sub-indices of the healthcare price index.

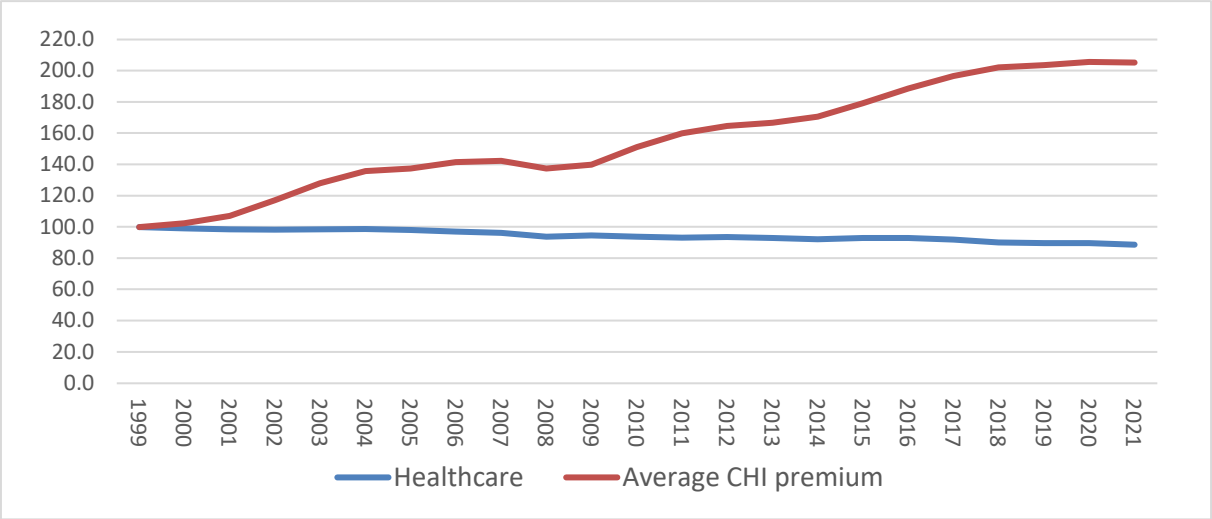
Figure 1: Development of relative prices in the healthcare sector in various areas from 1983 to 2021 (in relation to the CPI, index 1983=100)



Source: Federal Statistical Office (FSO)

Although healthcare prices increased somewhat more strongly than the CPI (blue line) until the turn of the millennium, they began to fall steadily thereafter. The main factors for the downward trend seem to be the prices of medicines (light green line) and the prices of outpatient services (medical practices, green line). In contrast, before the introduction of case-based flat rates (SwissDRG) in 2012, prices for inpatient hospital services (dark brown line) rose steadily.

Figure 2: Comparison of the price development in the healthcare sector with the average compulsory health care insurance (CHI) premium from 1999 to 2021 (in relation to the CPI, index 1999=100)



Source: Federal Statistical Office (FSO)
Notes: For the CHI, the average premium is shown

Compared to healthcare prices, the index for the average CHI premium for all insured persons and insurance types (KVPI/IPAM) rose sharply in relation to the CPI between 1999 and 2021 (red line) (see Figure 2). This suggests that the increase in the premium index is not due to the development of relative prices. Accordingly, the sharp increase in costs in the CHI seems to be caused mainly by an increase in volume.

3. Problems in measuring the prices of healthcare services

The price indices do not fully reflect the actual price development in the healthcare sector. For example, although the price index for healthcare covers large parts of the healthcare sector, it does not cover precisely the area covered by the CHI (or HIA) services. For instance, an essential element that is missing is the recording of prices for inpatient long-term care. In addition, the price indices for services provided by the Association for Assistance and Care at Home (Spitex) and outpatient hospital services have been part of the price index for healthcare only since 2016.

The prices for healthcare services are also distorted by the fact that progress in medical technology and changes in the quality of the services are difficult to record statistically.

Another measurement problem is that prices are heavily regulated under the Heath Insurance Act (HIA). As a rule, the service providers agree on tariffs with the health insurers, for example TARMED for outpatient medical services and SwissDRG for inpatient hospital services. Consequently, no individual service provider can individually set the price for the invoicing of basic insurance services. Whereas the scarcity of the services offered would be relevant in a free market, the negotiating position of the doctors' and health insurance associations, for example, is more relevant for pricing here. This leads to distortions in healthcare prices.

In addition, the overall price for a treatment is not determined by the tariff alone, but is shaped by how and what the service providers offer. This applies primarily to individual service tariffs such as TARMED. Therefore, the total price of a treatment by a registered doctor results from various TARMED tariff items. From an economic point of view, an individual service is a single component of a medical treatment. The various individual services represent the individual components (inputs) of the "product": the medical treatment. Accordingly, individual service tariffs can be regarded as input prices. Therefore, the price index for outpatient services should rather be seen as a measure for the inflation of input prices. Depending on how efficiently doctors provide treatment, the price development for outpatient medical treatment can differ significantly from the development of input prices. This theory is corroborated by the fact that

considerable price inefficiencies have been identified in the HIA sector (see Brunner et al. 2019).

Due to a standstill in the tariff negotiations, TARMED has not been adjusted to the current inflation trend and progress in medical technology for years, which ultimately implies a real tariff reduction compared to general inflation and therefore distorts healthcare prices. This fact is reflected in the decrease of the price index for registered doctors measured relative to the CPI (medical practices, green line) (see Figure 1). This results, for example, in price-related cost pressure for doctors due to rising rents for medical practices and wages for practice assistants. As a consequence, doctors are incentivised to expand (probably medically unnecessary) individual services within the framework of TARMED. However, this increase in volume is price-motivated and de facto causes a price increase for medical treatment, which in turn is not covered by TARMED.

The increase in prices for outpatient treatment can therefore not be observed directly on the basis of the tariff or the price indices alone. Therefore, further information is necessary to assess the extent to which the price index for outpatient services (medical practices) reflects the actual development of treatment prices. In contrast, the case-based flat rates for inpatient hospital services (SwissDRG) reflect relatively well the price of inpatient treatment, e.g. for an appendectomy. However, this has only been the case since their introduction in 2012.

4. The Baumol variable as a proxy for relative price developments

In order to avoid the disadvantages of the official price indices, the Baumol variable is usually used in health economics to estimate the relative price effect at an aggregate level (see Baumol 1967). This approach estimates the extent of Baumol's cost disease. Empirical studies for OECD countries and Switzerland show the relevance of a relative price effect for the healthcare sector (see Hartwig 2008; Colombier 2017; Colombier 2018). According to these studies, the relative price effect is a significant cost driver of total healthcare costs, which covers cost-driven compulsory health insurance premiums.

Another indication of the relevance of a relative price effect is the steady increase in inflation-adjusted wages in Switzerland between 1983 and 2021 (see Figure 1, brown line). Since the development of national wages can be assumed to have a close relationship with real wages of the healthcare personnel, wage development should exert a certain price pressure on the labour-intensive healthcare sector.[2] This consideration is in accordance with the empirical evidence on Baumol’s cost disease in healthcare (see Hartwig 2008; Colombier 2017; Colombier 2018).

As the Baumol variable is a proxy for price developments in the healthcare sector, it should reflect information from the official price indices to some extent.

[2] The FSO does not provide a wage index for the healthcare sector, which means that conclusions about wage development in the healthcare sector can only be drawn indirectly. The FSO presented the development of wages for the health and social services sector for the period between 1994 and 2010. During this period, a high correlation of 90% between the inflation-adjusted wages for the healthcare and social services sector and for the economy as a whole can be observed. This is also in line with findings in the economic literature, according to which there is a stable long-term correlation between wage development in the healthcare sector and the economy as a whole (see Hartwig 2008; Colombier 2017). Following this, the use of the real wage of the overall economy as a proxy for wage development in the healthcare sector can be justified.

Table 1: Correlation matrix between the Baumol variable and relative prices in the healthcare sector and the CHI premium between 1994 and 2021 (in %)*

Healthcare sector	Baumol variable**
Healthcare	77
Outpatient sector (medical practices)	64
Inpatient hospital services	34
Medicines	2
CHI premium (KVPI/IPAM)	49
Real wage index	80

* Only data from 2000 to 2021 is available for the CPI;** Baumol variable according to Hartwig (2008) and Colombier (2017)

Table 1 shows that there is a relatively high correlation between the Baumol variable and the relative price indices for healthcare and the outpatient sector (medical practices). A stronger positive correlation can also be observed for the development of CHI premiums. This is consistent with the assumption that the Baumol variable is a proxy for the relative price effect. Moreover, in contrast to the official healthcare price indices, the correlations suggest that CHI premiums are influenced by relative prices as well. It is also worth noting that no correlation can be seen with the price of medicines. This is to be expected, since the Baumol variable measures the relative price effect for labour-intensive services in the healthcare sector. Medicines, on the other hand, are produced industrially and therefore capital intensive. Moreover, as expected, there is a high correlation between the Baumol variable and the real wage index.

5. Concluding remarks

This brief background analysis suggests that the moderate development of the official price indices does not adequately reflect the actual inflation in the healthcare sector for several reasons. Firstly, there is likely to be some price pressure in the healthcare sector due to wage developments. Secondly, empirical studies point to a systematic cost effect of relative prices in the healthcare sector. Additionally, according to the Swiss Health Observatory, a shortage of skilled workers in the healthcare sector is to be expected over the next ten years, which will exert additional pressure on wages and prices.

The difficulties in measuring healthcare prices, the empirical evidence for a systematic cost effect of relative prices and the expected shortage of skilled workers, suggest that the relative price effect remains a relevant structural cost determinant in healthcare. Therefore, relative prices continue to be included in the FFA’s long-term expenditure projections. Furthermore, comparable assumptions are made in the corresponding health expenditure projections by the European Commission and the OECD (see European Commission 2023; AWG 2021; Lorenzoni et al. 2019).

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