

# VALUE ADDED AND EMPLOYMENT IN THE SWISS HEALTH SECTOR

The logo for INFRAS, featuring the word "INFRAS" in white lowercase letters on a black rectangular background, which is part of a larger graphic element with a yellow square to its right.

Study commissioned by the  
Association of Pharmaceutical Companies in Switzerland (vips)

Summary  
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## SUMMARY

### ISSUES AND OBJECTIVES

What is the significance of the Swiss health system in relation to the economy as a whole? This question can be approached from various perspectives. This study aims to illustrate the contribution made to the Swiss economy by the production of health-related goods and services, focusing on the following questions:

- › How much of GDP and total employment is directly or indirectly linked to the production of goods and services in the health system?
- › Which are the most important intermediate sectors for the health system?
- › Which areas of the health system are particularly employment-intensive?
- › Which areas of the health system are particularly important for the Swiss export economy?

The aim in answering these questions is to contribute to health policy debate in Switzerland and to highlight the counterpart to the frequently emphasized cost side of the health system, namely the value added and employment it generates.

### DEFINITIONS AND DATA

This analysis is based on a series of definitions, the most important of which are as follows:

#### Health sector and healthcare system

We distinguish between two perspectives in our observations of the health system: the production perspective and the expenditure perspective.

- › We define the value added and employment related to the **production** of health-related goods and services as the economic significance of the **health sector**. In the expenditure perspective, we focus on the production activities of the health players, incl. the medical intermediate service providers such as the pharmaceutical or the medtech industries. Therefore, in the results that belong to the health sector, the pharmaceutical and medtech industries appear as own health players with the total of their value added and employment.
- › We define the value added and employment related to **expenditure** on health-related goods and services in Switzerland as the economic significance of the **healthcare system**. In the expenditure perspective those health players play a major role that are in a direct

contact with the patients. The pharmaceutical and medtech industries are therefore solely considered as intermediate service providers e.g. of hospitals or pharmacies. Their value added and employment are thus part of an indirect effect of the Swiss Health System, equal to the non-medical intermediate service providers.

The main difference lies in the fact that the "health sector" perspective also includes exports by Swiss companies to foreign healthcare systems.

### Direct and indirect effects

We distinguish between direct and indirect effects:

- › The **direct effects** are the direct value added and employment generated by the demand for health-related goods and services and the related production of these goods and services. Value added and employment generated in connection with an appendectomy in a hospital, for example, are taken into account here (services by medical and nursing staff).
- › **Indirect effects** comprise value added and employment in connection with demand for **intermediate products and services** induced by the production of health products and services. These intermediate goods and services can come from a wide range of sectors, with indirect effects including, for example, the production of food for the hospital kitchen.

In addition, there are also "**induced**" effects, which refer to value added and employment generated when employees (and companies) within the health system spend their income and correspondingly generate demand for goods and services that in turn generates value added and employment.

Note that, in causal terms, only the direct and indirect effects are linked closely to production in the health system. We will therefore focus on these two effects in our summary, while the report as a whole also contains results relating to induced effect.

### Gross value added and employment

Gross value added and employment are used as indicators of the economic significance of the health system:

- › **Gross value added** is gross production value (sales) minus intermediate goods and services, and corresponds to all goods and services provided by a sector/industry within an economic area, and as such shows their contribution to gross domestic product (GDP).

› **Employment** is measured in terms of the number of full-time equivalents (FTEs). This is calculated by dividing the total volume of work by the number of hours worked on average over the course of a year by a full-time employee in a given sector.

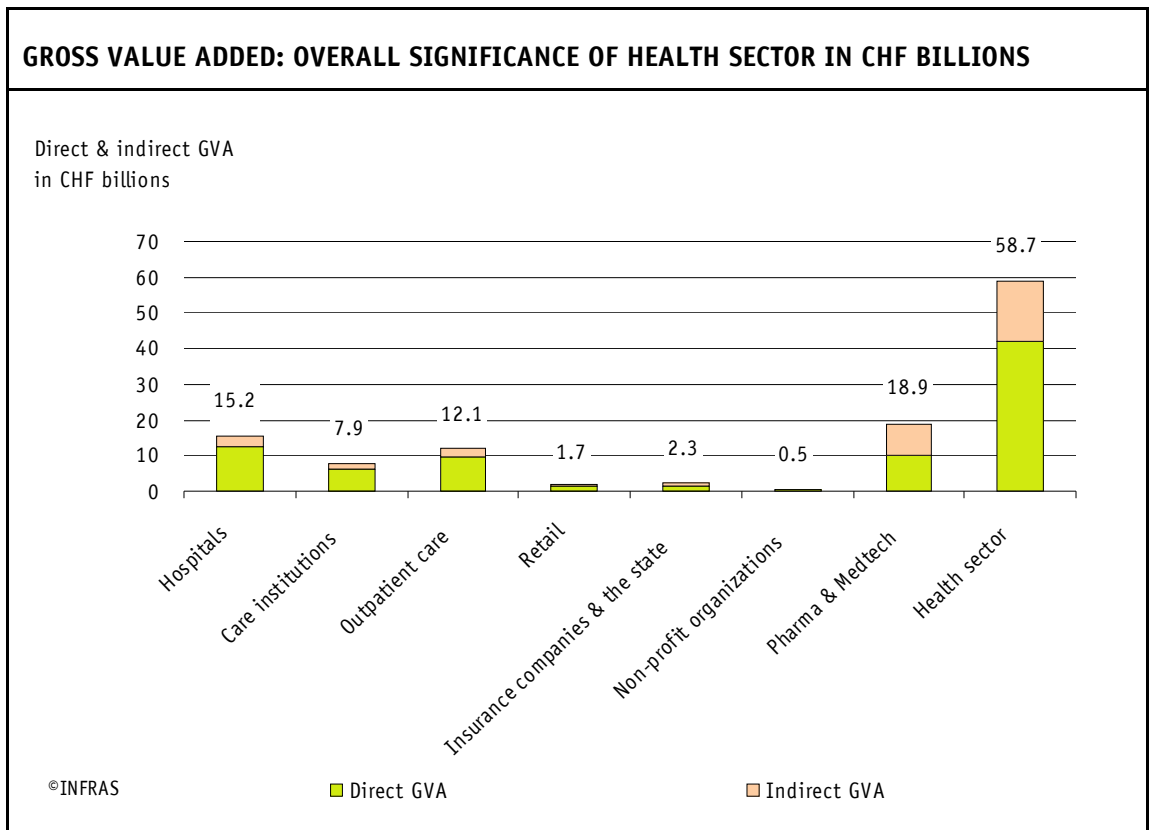
### **Procedure and basis of data**

We calculated the effects as follows:

1. In a first step, we evaluated existing statistics and studies concerning the individual sectors of the health system, and recorded data relating to gross production, production structure and employment. Wherever possible, we based our evaluation on primary data. The data was recorded for 2002, because there was no later data available for important sources of data.
2. At the same time, we carried out surveys among professional associations and individual companies in order to obtain information about their production structure.
3. We then analysed and carried out a plausibility check on the data we had collected. Because reliable sources were not available for all data, we carried out supplementary estimates on the basis of statistics and studies as well as discussions with specialists.
4. On the basis of the data recorded and plausibility-checked in this way, we then calculated the individual effects.

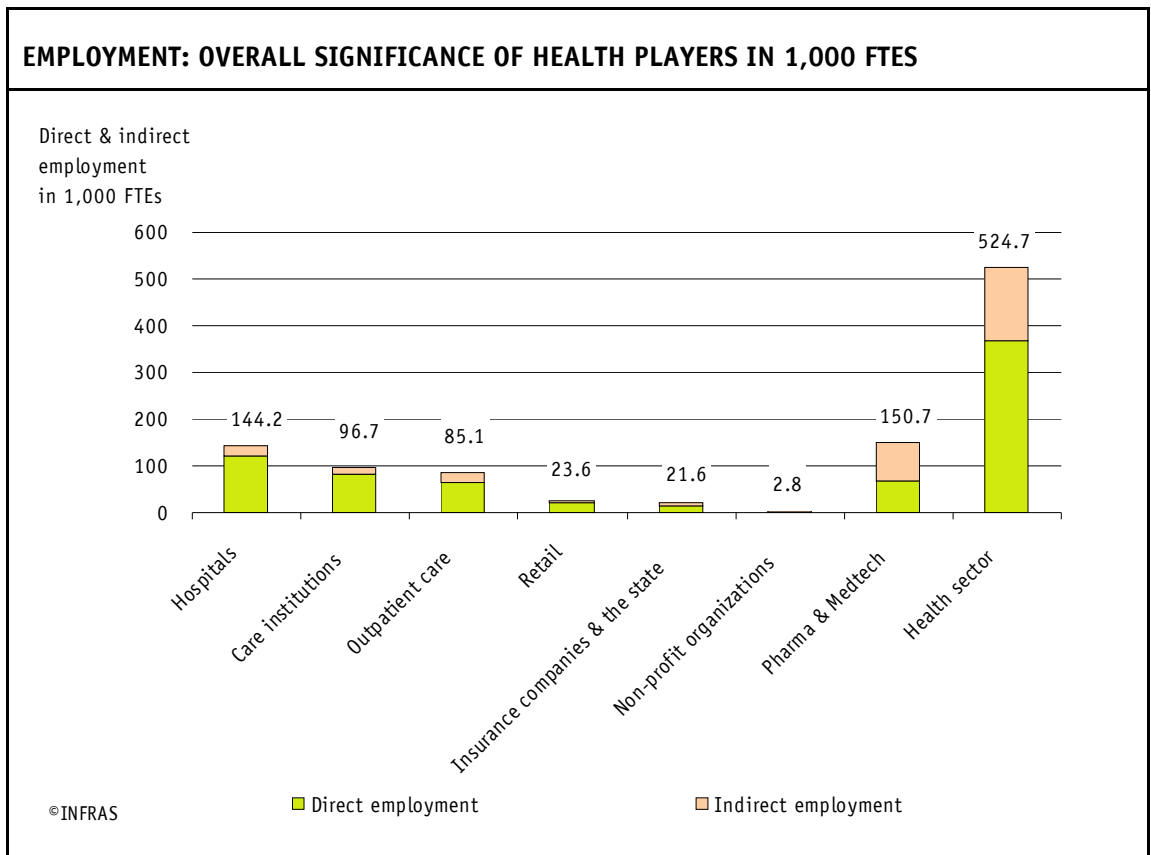
## **THE SIGNIFICANCE OF THE HEALTH SECTOR**

The total of direct and indirect value added and employment effects indicates the overall economic significance of the health sector. In 2002, the overall significance of the health sector amounted to value added of CHF 59 billion.



**Figure Z-1** GVA = Gross Value Added. In 2002, the overall significance of the health sector amounted to value added of CHF 59 billion.

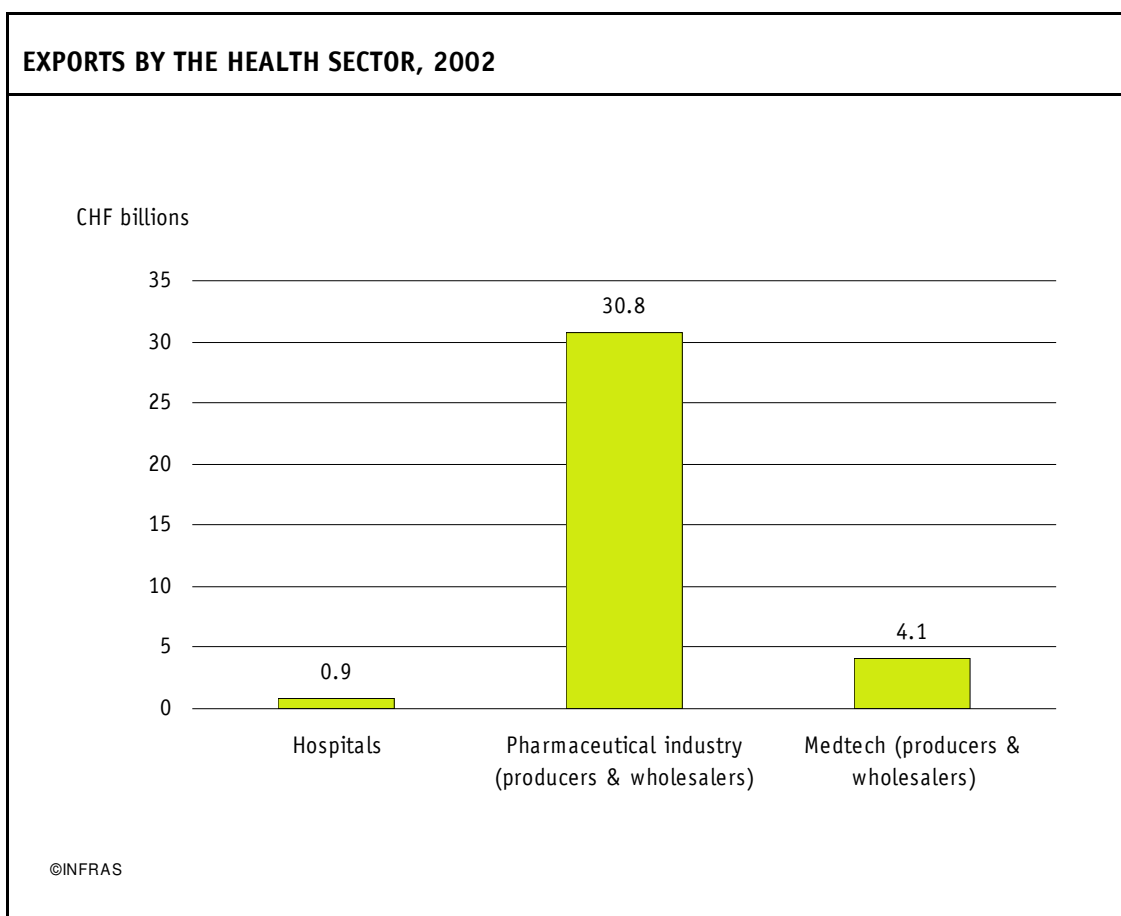
The employment related to this value added totalled 525,000 full-time equivalents (FTEs).



**Figure Z-2** FTEs = Full-time equivalents. In 2002, the overall significance of the health sector amounted to 525,000 FTEs.

This corresponds to around 14% of Swiss GDP and around 17% of total Swiss employment. Taking the individual groups of players separately, the pharmaceutical and medtech industries (incl. wholesale business with pharmaceutical and medtech products) make up the largest proportion within the health sector, with regard to both value added (CHF 19 billion, or 32%) and employment (151,000 FTEs, or 29%). This result can be explained by the relatively high indirect effects (value added and employment) connected to the pharmaceutical and medtech industries.

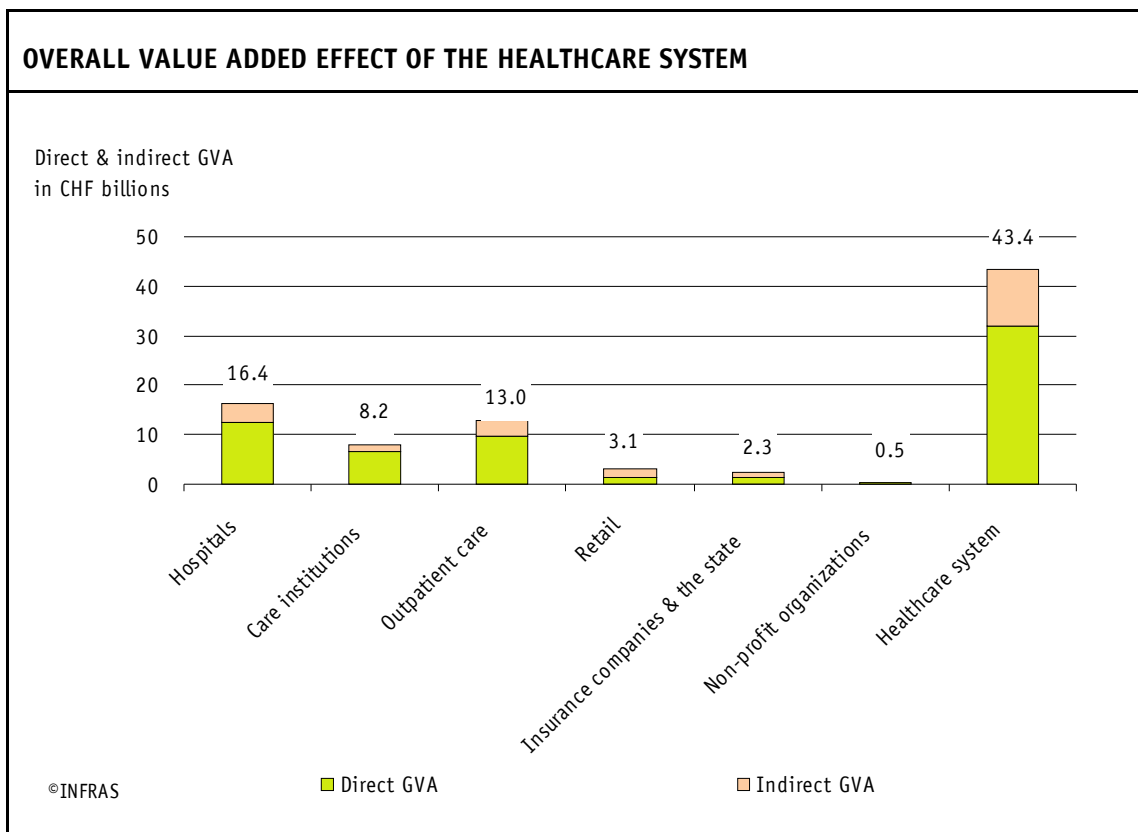
The value of exports is another important indicator of the economic significance of a sector. The health sector exports either goods (e.g. medicines) or services (e.g. dental treatment in Switzerland for a patient resident abroad). Figure Z-3 shows the exports of individual health players for 2002. The pharmaceutical industry (producers and wholesalers) exported a total volume of around CHF 31 billion, the medtech industry (also producers and wholesalers) around CHF 4 billion and hospitals just below CHF 1 billion.



**Figure Z-3** On the basis of the data available, it is only possible to determine the exports of individual health players. The pharmaceutical industry and the wholesale of pharmaceutical products made up the largest proportion of the exports with CHF 30.8 billion in 2002.

## THE SIGNIFICANCE OF THE HEALTHCARE SYSTEM

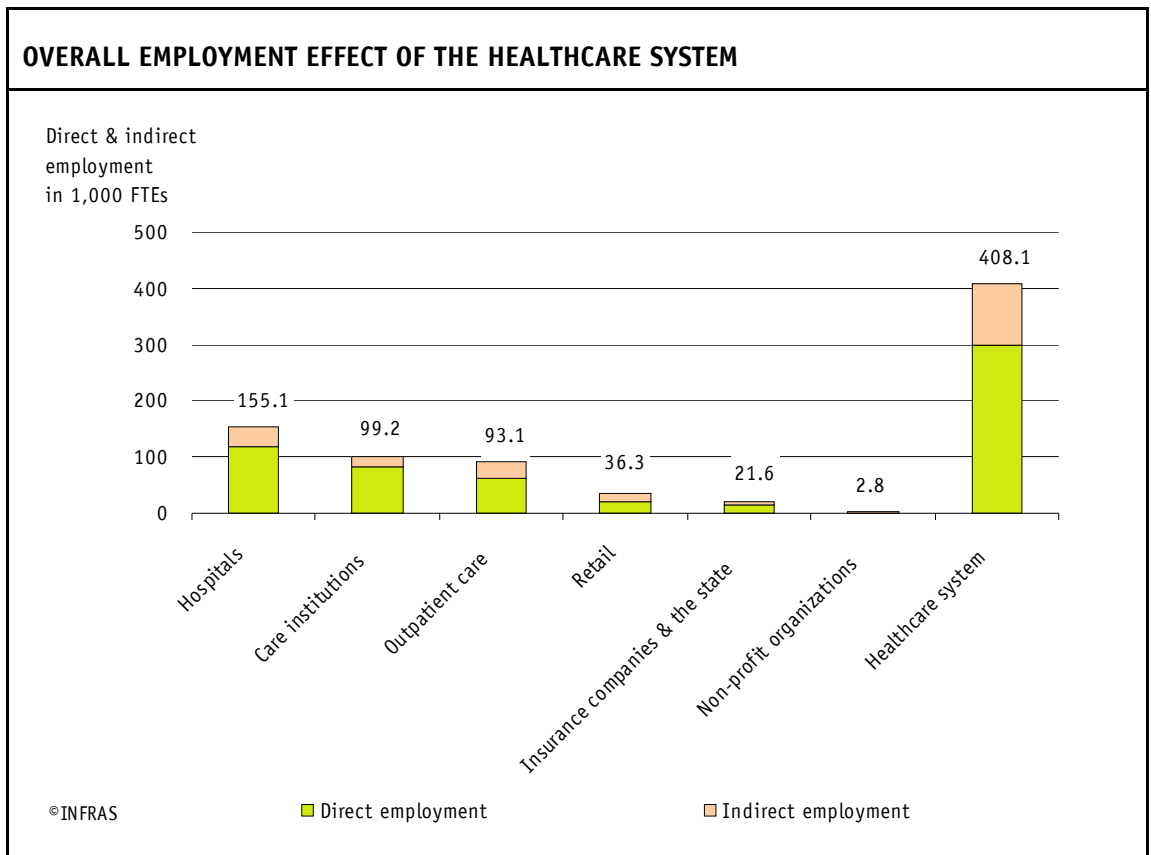
In the healthcare system, the total value added from direct and indirect effects was around CHF 43 billion in 2002:



**Figure Z-4** GVA = Gross Value Added. Based on value added, the overall significance of the healthcare system is CHF 43.4 billion. The value added of the medical intermediate service providers (e.g. pharmaceutical sector) is included within the indirect value added of the healthcare system.

Linked to this is an employment effect of 408,000 full-time equivalents (FTEs):





**Figure Z-5** FTEs = full-time equivalents. We estimate the direct and indirect employment effect of the healthcare system at 408,100 FTEs. The employment of the medical intermediate service providers (e.g. pharmaceutical sector) is included within the indirect employment of the healthcare system.

This corresponds to around 10% of Swiss GDP and around 13% of total Swiss employment. These values are lower than for the health sector, as the healthcare system forms a part of the health sector. Value added and employment linked to the export of medical goods (e.g. medicines) are not taken into account in the evaluation of the healthcare system.

## CONCLUSION

### First comprehensive study of the Swiss health system

The study provides an overall view of the specific structure and interdependencies of the health system, and as such is the first comprehensive investigation into the value added and employment of the Swiss health system.

### **Health sector generates high value added and employment**

The health sector generates a significant proportion of GDP, with the gross value added of the direct effect amounting to CHF 42 billion. This corresponds to around 10% of GDP. With the inclusion of intermediate goods and services (indirect effects), the health sector generates total gross value added of CHF 59 billion, and also plays a significant role with regard to employment. Directly and indirectly, employment effects of around 525,000 FTEs are linked to the health sector. This corresponds to around 17% of total employment.

### **Lower productivity in employment-intensive sectors**

With the exception of the pharmaceutical and medtech industries, all areas of the health sector show above-average ratio between value added and production value. This is the expression of their highly employment-intensive activities. As a result of their high workforce numbers, these sectors (with the exception of outpatient care) generate a below-average level of productivity. At the same time, the less personnel-intensive pharmaceutical and medtech industries, with higher (absolute) value added, generate above-average productivity.

### **Strong export focus of the pharmaceutical and medtech industries**

The study highlights the strong focus placed by the pharmaceutical and medtech industries on export. Of total gross production (sales) of CHF 42 billion, these two industries (incl. wholesale) export around CHF 35 billion. This means that around 80% of the people employed in the pharmaceutical and medtech industries work for the export trade.

### **Health sector as a potential future growth area**

Longitudinal analyses reveal that the pharmaceutical industry grew significantly between 2000 and 2004, gaining an average 12.7% per year. However, demand-related factors such as changing consumer needs due to demographic development, the expansion of basic healthcare services and increased demand based on individual preferences contribute to making the health sector an area of growth.

### **Health sector generates additional benefits**

While this study focuses on the economic significance of the health sector, the benefits of the health sector go beyond pure value added and employment within the sectors we analysed. The health sector generates additional effects that were excluded from this study,

including in particular improvements in quality of life and life expectancy, as well as increases in economic productivity.