VAT based monthly estimation of foreign trade of services in Hungary

Paper submission

Zsolt Kovalszky, HCSO
Attila Morva, HCSO

Introduction

In the Hungarian foreign trade statistics, the foreign trade turnover of services is measured on the basis of turnover data from quarterly data collection. In order to improve the timeliness of the statistical data, based on the monthly VAT data, we use a regression method to estimate the level of the monthly service-foreign trade turnover. With the help of the estimate given for the monthly frequency of foreign trade in services, a monthly flash indicator for foreign trade in services is produced, which significantly improves the timeliness of foreign trade statistics, which thus also provides great help in determining the monthly balance of payments data more precisely.

Historical background of trade of services statistics

The purpose of foreign trade product turnover statistics is to monitor product movements that physically cross the border as a result of transactions between resident and non-resident units. Any activity that represents a mutual obligation for services between a resident and a non-resident is classified as foreign trade in services. In the hungarian statistical system, between 1992 and 2002, the Ministry of Economy and Transport collected data from designated data providers.

However, due to the coverage problem (in terms of value, type of service and geographic units), this resulted in low-quality data. Between 1996 and 2008, the official statistics were supplemented with settlement data from the Hungarian National Bank, according to the Balance of Payments Manual (BOP Manual 1993). In parallel, in 2002, an agreement was reached between the two institutions regarding the production of service foreign trade statistics. The Hungarian Central Statistical Office set up a new system with the support of the Hungarian National Bank. 38000 companies were selected based on the following data sources:

• Foreign trade data collection service of the Ministry of Economy and Transport;

• ITRS data from the MNB;

• VAT export and import data;

• Customs data

After 2005, the Hungarian Central Statistical Office became responsible for the production of service foreign trade statistics. International trade players (directed sample) provided the majority of respondents. High-quality registers, appropriate sampling techniques, as well as the planning of questionnaires and data processing were also necessary for the production of statistics of adequate quality. After the establishment of the data collection and data production system, the Hungarian Central Statistical Office provides data related to foreign trade in services for both balance of payments statistics and national accounts.

Emergence of the need for a monthly estimate

In the current statistical system, the balance of payments statistics produced by the Hungarian National Bank publishes monthly data, which is prepared by continuing the quarterly data based on a model and then breaking it down into monthly frequencies. However, the statistics produced in this way have a high degree of inaccuracy, in the short term due to COVID, the forecast does not work and the estimate does not handle seasonality within a quarter.

Based on all of this, the professional demand was formulated that service foreign trade data should be broken down into roughly homogeneous components, which components can be estimated with monthly frequency data.

Model estimation and results

In order to improve the timeliness of the statistical data, based on the monthly VAT data, we use a regression method to estimate the level of the monthly service-foreign trade turnover.

Among the distinct main types of services, the greatest emphasis was placed on the VAT-based estimation of the service fees for contract work, transport services and business services. In the case of business services, the estimation is basically done with the help of monthly VAT data, based on the examination of the VAT data of the reporting companies and the correlation relationships. The partial estimate proved to be stable, with an explanatory power of around 80 percent.

In the case of transport services, we treat air transport services separately, because in the case of air transport, administrative data related to airport traffic is also available for estimation. In the case of road transport, we were able to use the camera data to supplement the VAT data, in order to be able to give a more accurate estimate. Regarding the foreign trade turnover of air transport and related ancillary services, the correlation studies showed that there is a close relationship both with the number of transported passengers and with the product turnover. The partial estimate proved to be stable, with an explanatory power of around 90 percent.

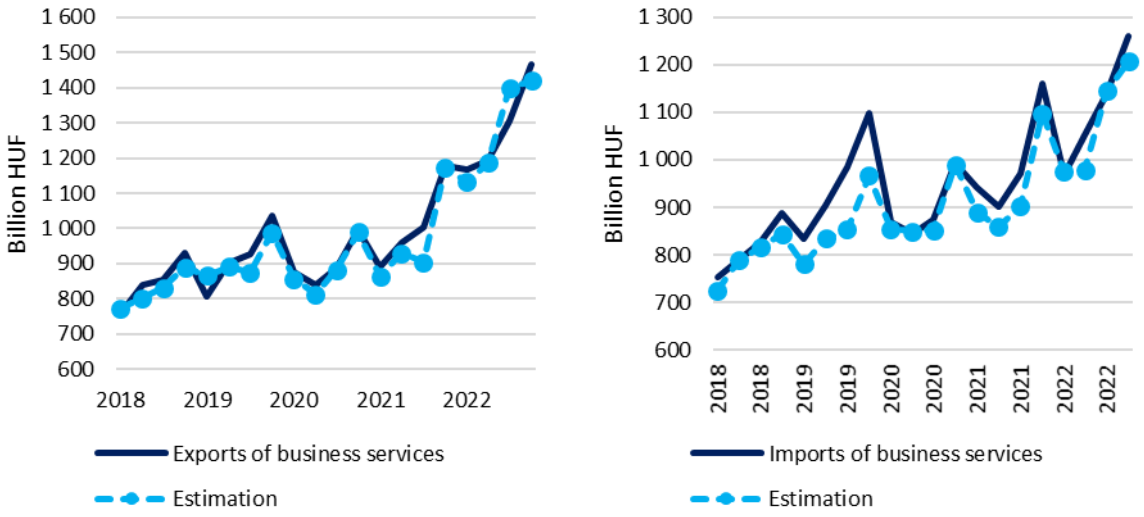
However, the available VAT data do not fully cover the information base of the quarterly data collection. Thus, an additional estimation is going to be added to the actual estimation, based on non-VAT data completes the estimation procedure approximating the total turnover. One of these additional elements is export and import turnover for tourism purposes, which is approximated with the data of the monthly tourism performance statistics, and on the basis of bank card data, with the help of the data of spending for tourism purposes. Supplementing the model with an estimate of tourist services can already make the estimate suitable for publication, as the foreign trade turnover of services is completely covered.

Summary

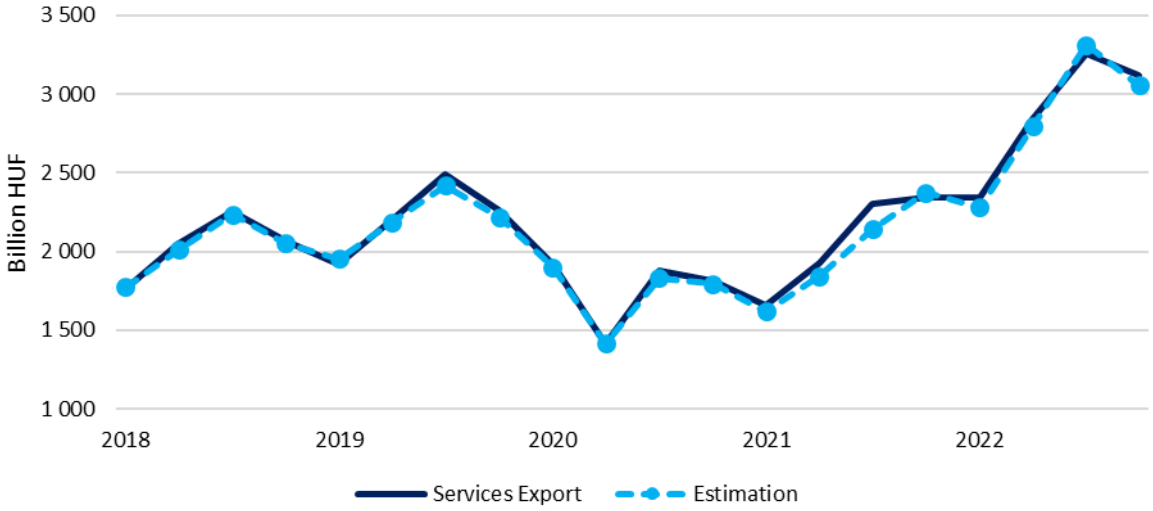
In order to improve the timeliness of the statistical data, we used a regression method to estimate the level of the monthly service-foreign trade turnover. With the help of the estimate given for the monthly frequency of foreign trade in services, a monthly flash indicator for foreign trade in services can be produced, which can significantly improve the timeliness of foreign trade statistics, which thus also can provide great help in determining the monthly balance of payments data more precisely.

Appendix

Annex 1: Exports and imports of business services



Annex 2: Export of services



Annex 3: Import of services