

# Micro-data based BoP data quality management

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## Introduction

Hungary joined the European Union in 2004. Simultaneously with EU-membership the Intrastat survey system was introduced to capture the foreign trade transactions with the European Union member countries. Just after these changes the trade balance of Hungary improved significantly: exports increased, while it was not accompanied by a similar imports growth, although Hungary is a very open country. At the same time in the balance of payments statistics net errors and omissions increased and turned to a negative trend. This phenomenon highlighted the importance of systematic data quality management and the macro and micro level checking of data consistencies between financial and non financial accounts. There are different practices in the European Union as regards tasks and legal possibilities of public institutions in data collecting and releasing, the most common way, however, seems to be that data for financial and non financial accounts are mainly collected by NCB's and NSI's, respectively. At the same time balance of payments statistics are mainly published by NCB's, so there are common fields in non financial accounts and balance of payments, mainly foreign trade in goods and services. As a result, NSI's collect and (partly) NCB's release their data. The overall need for harmonization of financial and non financial accounts, and particularly the consistency of balance of payments, requires strong cooperation between these institutions. This paper shows via an interesting example of VAT registrations how the different aspects of globalization affect this cooperation.

## Globalization: the case of VAT registrations

One of the main visible features of the globalization is the operation of multinational enterprises. They establish affiliates and branches in different countries throughout the world, using legal possibilities for their own purposes. National statistical authorities collect data on their operations only in the resident country although their transactions cannot be understood without knowledge of their overall activities.

This makes a challenge for statistical authorities, both at national and international level, as regards ensuring that the main goal of (economic) statistics, i.e. describing and showing (economic) processes in well-chosen numbers and indices, will continue to be carried out. At international level as regards our recent topic it mainly results in methodological harmonization between financial and non financial accounts. The work, of course, does not stop at this point: issues of

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globalization make it necessary to clear more exactly the important issues of application of the new statistical standards related to topics as global production and sale chains or off-shore activities (see e.g. the activity of Task Force on Global Production).

At national level these developments should drive to better use of available data and, as a consequence, the closer coordination between NCB's and NSI's. The requirement is that their data should be more reconciled in order to decrease inconsistencies between financial and non financial accounts at micro level and especially in balance of payments.

In the case of Hungary the important field of the cooperation was the compilation of goods and services data in the balance of payments upon data collected by the HCSO. Methodologically the difference between them and settlements based data on goods and services (collected by the MNB) should be mainly trade credits. After the Hungary's joining the EU this calculated trade credits moved in one way, became larger step by step and so unrealistic. To make balance of payments data more transparent, in 2005 the MNB moved the main part of these trade credits to net errors and omissions. Reclassifying turnover in trade credits into statistical errors and its size automatically led to a significant increase in the gap between net financing liabilities calculated from the bottom up and from the top down in the balance of payments. This discrepancy was observable continuously in the MNB's press releases and published balance of payments data.

At the same time a special cooperation has started with the HCSO for detecting the source of this phenomenon. It came to light soon that this issue concerns both the national accounts and the balance of payments. It was and still is a common interest to handle this problem adequately and to start micro level quality exercise.

An important source of company level discrepancy was found: the appearance of VAT registration in Hungary. After joining the EU, the community law made it easy for non resident firms to establish in Hungary registrations only for VAT purposes, without physical presence. The turnover through these registrations does not belong to Hungary but since the intra EU foreign trade is based on the Intrastat system and its register links to VAT register (at national level), these VAT registrations will be data providers for NSI's while there is no settlement transaction reported by them since they belong to non resident enterprises and physically they do not operate in the resident economy.

The practical problem is with them that the turnover of these registrations usually has (large) positive balance while it does not form a part of the resident GDP.

In Hungary in the first step the HCSO made a macro level estimation for this difference and it was released first in 2008 in the balance of payments and national accounts. This, however, raised the broader question of the accessibility of the MNB to foreign trade goods and services data collected by the HCSO at company level.

From 2008 onwards the data check at company level could be extended to the majority of financial accounts and related incomes. The main principle is that at least for the larger companies the balance of their turnover in the reported balance of payments data follow some kind of pattern, in an optimal case almost zero balance (if e.g. they have important activity in Hungary but their all assets and liabilities are held *vis-à-vis* non residents). In many cases, however, the goods and services data collected by the HCSO would be missing from this check if there were no legal accession for MNB to them.

In 2009 the MNB has received legal access to these individual data collected by the HCSO.

Specially in the case of VAT registrations it became clear that a macro level estimation is not enough to handle this issue since there are different relative balances throughout these registrations and at least some (in optimal case all) of them should be estimated at individual level. The relevance and importance of these issues altogether in Hungary is shown in the following table.

Trade balance revisions and its effect on NEO in Balance of Payments								Table 1
	2004	2005	2006	2007	2008	2009	2010	2011
% of GDP	-0.5	-1.3	-1.9	-2.1	-2.1	-2.7	-3.5	-4.7

The work is going on as regards further refinement of the estimation related to VAT registrations. The main result, however, along with the important reduction of statistical errors in balance of payments and national accounts, is that from 2012 onwards the experts of the MNB and the HCSO analyze together regularly the data for large enterprises or enterprise groups in order to make the quality of data in different macroeconomic statistics better.<sup>2</sup> It should, however, be told that the original problem is not totally solved, there are still errors and omissions remaining after this adjustment, although it was undoubtedly an important step forward.

At last, but not at least, this issue raises the question whether foreign trade data themselves, at least macro level, should be also adjusted in national publications because of VAT registrations in order to be more appropriate for users' needs. Since foreign trade data are used in addition to balance of payments and national accounts purposes among others for short term indicator for GDP, users other than official statisticians may address this issue to compilers of foreign trade data.

## Concluding remarks

The reduction of inconsistencies in macroeconomic statistics due to VAT registrations may help users of these statistics, for using micro data and switching different databases will be in the future a commonly applied method of statistical analysis serving monetary and fiscal policy. The need for more sophisticated use of statistical data highlights the responsibility of statisticians of producing and at the same time the use the comparable and well documented methodology of data.

<sup>2</sup> Moreover, experts of the MNB released the first statistical research based on comprehensive micro level dataset (see Mariann Endrész, Győző Gyöngyösi, Péter Harasztosi, Currency mismatch and the sub-prime crisis: firm level stylized facts from Hungary; MNB Working Papers 8, 2012). This paper investigates currency mismatch in the Hungarian corporate sector. The analysis is based on the use of both foreign trade statistics and balance of payments data at company level.

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