Linking ICP Regions with Double Participation Using the "Partially-multilateral" Approach (2014 CIS ICP Experience)

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Purchasing Power Parities (PPP) represent a unique tool for macroeconomic analysis. However, the scope of work needed to carry out PPPs calculation is very large: it is necessary to reconcile item lists (for consumer as well as for capital goods and services) equi-representative for all participating countries, to collect primary price data (including budget statistics and data on housing), to validate data, to get national annual average prices, to compile data using the detailed structure of GDP expenditures, to carry out computations of PPPs at several aggregation levels. These steps usually take at least three years and are called a cycle of comparison. Currently, in accordance with the decision of the UN Statistical Commission, the annual comparison procedure based on the rolling survey approach is being developed by the World Bank, the EU/OECD comparison providing an important experience in this context.

Global and regional comparisons

Global comparison based on purchasing power parities, where many countries from different regions participate, is undertaken under the auspices of the UN. This activity is called the "International Comparison Program" (ICP) (e.g. see [7]). Two recent large scale comparison cycles were carried out in accordance with the UN decision using data for 2005 and 2011.[1] The World Bank acted as the Global Coordinator of the Program. The Global ICP is organized by regions: there are six main regions of the world, of which five are composed following the geographical principle – Asia (except Western Asia), Africa, Western Asia, Latin America, and CIS; one region is composed following an institutional principle – this is the group of countries coordinated by the OECD and Eurostat. There are several reasons why ICP is organized by regions: these are organizational, administrative, and financial reasons. In theory, countries of the same region form a more homogeneous group with better accuracy of the comparison results.[2]

Following the decision taken by the UN Statistical Commission, the next round, after 2011, of global ICP was to be conducted using data for 2017. However, following the decision of the Economic Council of the CIS, in the CIS region the regional comparison cycle has been conducted on the basis of data from 2014 (the CIS ICP 2014). CIS-STAT acts a Regional Coordinator. In June 2017, CIS-STAT issued a statistical publication "2014 International Comparison of CIS Countries GDP Based on Purchasing Power Parities". This publication

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[1] ICP cycles based on 1985 and 1993 data strictly speaking were not global, as they did not cover all regions of the world.

[2] Although in practice this is not entirely true. For example, rather different countries participate in the comparisons coordinated by the OECD and Eurostat.

presents results of a three year-long effort of the national statistical offices of CIS countries and CIS-STAT on computing PPPs and conducting PPP based comparisons.

A separate important issue of global comparisons is linking regional comparisons to obtain a single set of global indicators.

To link regional results within the 2005 ICP, a special inter-regional comparison – "ring" comparison – was carried out: an additional comparison for a small sample of countries from each region (e.g. see [8]). Each "ring" country participated in two separate multilateral programs: the first program covered countries of the region which the "ring" country belonged to; the second one covered all the "ring" countries. These two programs were organized and conducted separately. The applied methodology was not to calculate direct global inter-country parities in one step, but calculating multilateral inter-regional parities within the Ring comparison followed by their further linking with regional parities. It was a totally new approach in the theory and practice of international comparisons. Following this approach, regions were seen as "super-countries" with several price observations (prices of ring countries) in each "super-country".

However, some conceptual and technical problems were detected in the "ring" comparison of 2005 ICP. First of all, the practice showed that despite careful selection of the ring countries, the ring comparison, based on a small sample of countries, could not fully justified neither the reliability nor equal representativity of the inter-regional item list and price data for all regions. Thus the ring comparison was substituted by the Global Core List (GCL) approach within the 2011 ICP (e.g. see [9]). All participating countries collected data for the GCL items. Multilateral inter-regional BH PPPs were computed on the basis of the global products basket and price data from all countries. Some alternative solutions for inter-regional linking were examined as well (e.g. see [5]).

How should one include CIS data into the 2017 Global ICP? To be able to answer this question we should consider attentively the experience of the 2005 ICP and the 2011 ICP, as well as linking the regional comparison 2014 CIS ICP CIS and the OECD/EU comparison based on 2014 data.

The results of true multilateral comparisons have to be invariant relative to base country and base/numéraire currency. However the transparent and understandable (for wide range of users) presentation of the results needs special efforts for the selection/definition of these terms. The concept of numéraire currency is very important for the presentation of the international comparisons based on PPPs. The numéraire currency is a currency towards which the purchasing power parities of the participating countries are being presented. National currency of one of participating countries may be the numéraire currency (e.g. Euro of one country in the euro area or U.S. dollar) or artificial conventional neutral "average" currency (e.g. OECD dollar in OECD comparison at OECD average price level or "Purchasing power standard, PPS = Euro at EU average price level"[3] – in Eurostat comparison).

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[3] Currently, 19 EU countries (euro area countries) use the Euro as a common national currency. However it does not mean that price levels are the same in all euro area countries. In this regard, to present PPPs Eurostat uses an artificial neutral numéraire currency "Purchasing power standard, PPS" = Euro at EU average price level.

In the 2005 CIS ICP and 2011 CIS ICP the Russian ruble was used as numéraire currency. As a result the purchasing power parities for the national currencies of the participating countries were published towards Russian ruble. Hence, the PPP based GDP estimates (total, per capita, by components, etc.) were also published in Russian rubles on the basis of PPPs. In order to expand the field for comparison, it was interesting to compute PPPs of the national currencies of CIS countries towards one of the most common world currencies, such as the U.S. dollar, or the Euro. PPPs of CIS countries' national currencies were obtained towards the Russian ruble within regional CIS comparisons and then they were computed towards the U.S. dollar using PPP of Russian ruble to U.S. dollar which had been obtained within the OECD comparison.

However a comprehensive and adequate – from the methodological point of view – computation of the PPPs of the national CIS currencies towards the U.S. dollar is possible only if the CIS countries participate in a comparison where the USA is also a participating country. Similarly, it is possible to obtain adequate PPP estimates for the CIS currencies towards Euro only if CIS countries participate in the Eurostat comparison.

Participation in a multilateral comparison assumes that national statistical offices collect price data in accordance with a unified approved item list and present data on GDP expenditures in accordance with harmonized classification, and then a calculation is done on the basis of the common array of data collected by all comparison participating countries.

The USA and euro area countries participate in the regional comparison for the joint group of 47 EU/OECD countries. This work is commonly called "Eurostat/OECD comparison" (or "EU/OECD comparison") and is coordinated jointly by the OECD Statistics Directorate and the Eurostat.

So far, out of the CIS countries only Russia has an opportunity to interact with OECD on a practical basis, to provide item price data and data on GDP structure, and, as a result, to obtain a direct transparent PPP estimate of the Russian ruble towards the U.S. dollar. Thanks to the parallel participation in two comparisons – the CIS ICP and OECD/EU – Russia may be used as a "bridge country" in order to link these comparisons. Therefore there is an opportunity to recalculate the CIS ICP results using U.S. dollars as a numéraire currency, which means obtaining PPP estimates of the national CIS currencies towards the U.S. dollar and computing the GDP estimates of CIS countries in U.S. dollars on the basis of purchasing power parities. This approach was also used in the global comparison cycles of 2005 and 2011, which allowed CIS countries to avoid the extra efforts to undertake the linking procedures used at that time. However such indirect estimating of PPPs of CIS currencies towards the U.S. dollar via a bridge country contradicts the key concept of a multilateral comparison, which is a direct comparison of each country with all the rest, and linking countries via a bridge country may raise questions both from the methodological and organizational points of view.

Fixity principle

Speaking of linking regional and global comparisons, it should be emphasized that one of the requirements is usually the adherence to the principle of fixity of regional results. This requirement is very important if regional comparisons are used for making official decisions.

For example, Eurostat uses PPP based GDP estimates for calculating the size of financial assistance from EU to less developed regions within EU. In this regard, the principle of fixity is applied to the EU countries comparison within EU/OECD (i.e. the PPPs of EU countries are impacted only by EU countries data). However, first of all this is a requirement of administrative and organizational nature and it is to a lesser extent related to statistical requirements (economic homogeneity of countries and accuracy of comparisons).

Computation of PPPs within a multilateral comparison is based on computing some averages for all countries participating in the comparison.[4] It is clear that it is impossible to achieve strict fixity (absolute fixing) of regional comparisons when the regions are combined in common multilateral comparison. When the number of countries whose data are used in computations is changed (expanded) averages are also changed to a certain extent. So the fixity principle is often interpreted non-strictly; it is assumed that, at least, country ranking by per capita GDP (PPP based) should be maintained. The ranking of countries by decreased (increased) per capita GDP (PPP based) resulted in each group (region) should be maintained between these countries within a broader set of countries after integrating this group of countries with others.

Some CIS ICP features important in the context of linking

PPP estimates for CIS currencies towards the U.S. dollar were obtained for all three CIS comparisons accomplished up to now – using data for 2005, 2011, and 2014. Different methodological approaches were used for this.

Within the 2005 and 2011 cycles, the simplest approach was applied to link the CIS ICP to the EU/OECD comparison using a direct recalculation via a bridge country ("linear recalculation" approach). From the methodological point of view this was not a multilateral comparison of CIS countries with EU/OECD countries, but obtaining an indirect estimate.

Within the 2014 comparison a much more sound methodological approach was used, which is a partially-multilateral comparison of CIS countries and EU/OECD countries. This approach was called a "partially-multilateral comparison" (PMC approach) due to: "multilateral" – because the multilateral methodology is applied for the PPP aggregation, "partially" – because the bridge country data were used still at the first stage of computations (BH-PPPs).

Below we will describe the both solutions (2005/2011 and 2014) from the CIS experience that enable linking regional comparisons.

Before describing this experience, the following CIC ICP features being important in the context of inter-regional linking should be mentioned:

- The CIS-STAT carries out the regional multilateral comparisons using the Russian ruble as the numéraire currency;

- Russia participates in both CIS ICP and OECD comparison and strictly needs to fix its results (PPPs towards USD, etc.) gotten from the OECD comparison;

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[4] The GEKS method (presently the official ICP method) uses averaging of bilateral Fisher PPPs and the Geary-Khamis method (the method used in the first rounds of the ICP) uses the averaging of national prices recalculated to a common currency at a common price level.

- CIS countries are highly interested in getting PPPs of their national currencies towards a broad set of other currencies (first of all, towards US dollar or/and euro), this ensures a much wider area for comparative analysis;

- CIS countries are interested in getting PPPs towards USD and other currencies based on a multilateral comparison approach;

- According to the EU/OECD rules, for confidentiality of primary data, there is no option to include CIS countries (except Russia) into the EU/OECD comparison at the items level.

While the 2005/2011 CIS ICP experience did meet not all of the requirements mentioned above, the PMC procedure used within the 2014 CIS ICP was aimed to provide a more sound solution.

Linear recalculation using a bridge country data

Linking CIS and OECD/EU comparisons using direct recalculation on the basis of Russia's results in the OECD/EU comparison is a simple procedure. The PPP estimate for each country's currency towards the Russian ruble obtained within the CIS comparison are recalculated towards the U.S. dollar using the respective PPPs of the Russian ruble to the U.S. dollar obtained within OECD/EU comparison. The role of Russia as a bridge country is quite clear here.

(1) $PPP(NC_{CIS\text{-}j}/USD) = PPP(NC_{CIS\text{-}j}/RUB) * PPP(RUB/USD)$

where:

$PPP(NC_{CIS\text{-}j}/USD)$ – purchasing power parity of the national currency of the country j from the CIS region towards US dollar

$PPP(NC_{CIS\text{-}j}/RUB)$ – purchasing power parity of the national currency of the country j from the CIS region towards the Russian ruble obtained within the CIS comparison

$PPP(RUB/USD)$ – purchasing power parity of the Russian ruble towards US dollar, obtained within the EU/OECD comparison

It is obvious, that a direct linear recalculation provides fixity of the CIS comparison results. For countries participating in the EU/OECD comparison (including Russia as a participant of the OECD comparison) results are not changed at all, and for other CIS countries they are just rescaled proportionally which maintains all relations between these countries results.

The main advantage of linking two regional comparisons using direct linear recalculation is the simplicity of the procedure while maintaining fixity for Russian results within the EU/OECD comparison. These reasons played the key role during the first two CIS ICP cycles (2005 and 2011), when there were many other problems to solve and restricted resources did not encourage additional work on linking on the basis of an adequate methodology of the multilateral approach.

The main drawback of direct linear recalculation is the violation of the concept of multilateral comparison, which is inevitable for such approach. Using a bridge country imposes all the

peculiarities of the statistics (and economics) of that bridge country to other countries' results. As a result one may not exclude that the PPP estimates for these countries could be biased.

The only way to avoid these disadvantages is to conduct multilateral comparisons, i.e. to carry out an integrated calculation on the basis of data collected in accordance with a single item list by national statistical offices of all the countries participating in the comparison. As it was mentioned, in order to obtain adequate – from the methodological point of view – multilateral PPP estimates of the CIS currencies towards the U.S. dollar (or towards the Euro) it is necessary to integrate data on prices and GDP structure of the CIS and EU/OECD countries within a single calculation. Item lists (product baskets) used in the CIS and EU/OECD comparisons are quite similar. Unfortunately, due to organizational matters a full scale participation of CIS countries (with the exception of Russia[5]) in the multilateral EU/OECD comparison has not been possible up to now. One of the key restrictions for the majority of the CIS countries to participate in OECD comparisons is the OECD and EU regulations that prohibit the disclosure of item price data to any non-member OECD/EU country.

In this regard, as there is no possibility to include CIS countries into the EU/OECD comparison on a comprehensive multilateral basis, in order to obtain more adequate multilateral PPPs of the CIS currencies towards the U.S. dollar, the CIS-STAT together the WB experts developed and used the partially-multilateral comparison approach within the 2014 CIS ICP. This allowed to substantially eliminate the shortcomings of direct linking via a bridge country (linear recalculation) and to obtain more adequate multilateral PPPs of the CIS currencies towards the U.S. dollar and other currencies.

Partially-multilateral comparison (PMC procedure)

In order to link the CIS ICP results to the EU/OECD comparison results by using the PMC approach, the CIS-STAT held negotiations with the OECD and the Eurostat. Following the agreement achieved, it was decided to link CIS and EU/OECD data starting from the basic headings level. This made it possible to avoid the issue of disclosing the OECD/EU item price data to CIS countries. This compromise solution appeared to be well-balanced and acceptable for all parties.

PMC is a three-stage procedure. At the *first stage* estimates of PPPs of the CIS currencies towards US dollar are obtained at the basic headings level:

(2) $PPP_{BH-k}(NC_{CIS-j}/USD) = PPP_{BH-k}(NC_{CIS-j}/RUB) * PPP_{BH-k}(RUB/USD)$

where:

$PPP_{BH-k}(NC_{CIS-j}/USD)$ – purchasing power parity of the national currency of the country j from the CIS region towards US dollar for the basic heading k

$PPP_{BH-k}(NC_{CIS-j}/RUB)$ – purchasing power parity of the national currency of the country j from the CIS region towards Russian ruble for the basic heading k

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[5] In 1996 Russia got the opportunity to participate in OECD comparison on an experimental basis; this was officially transformed later into a regular tri-annual participations (1999, 2002, 2005, …).

PPP_{BH-k} **(RUB/USD)** – purchasing power parity of the Russian ruble towards US dollar for the basic heading k

The first PMC step presented in (2) is a simple linear recalculation carried out at the BH level. However, next steps are performed in full compliance with the concept of multilateral comparisons.

At the *second stage*, on the basis of the combined BH data from CIS and EU/OECD countries, the GEKS method is used to compute intermediate aggregated PPPs of each CIS (and EU/OECD) country.

Actually, the results computed at this stage are already PPP estimates towards the US dollar and other currencies obtained on the basis of the multilateral comparison of CIS and EU/OECD countries. However these estimates cannot be considered as final ones because it is necessary to maintain a strict fixity for the results of countries participating in EU/OECD comparison (including Russia as participant of the OECD comparison).

This is done in the *third stage*. For this purpose, one part of these values (for countries participating in EU/OECD comparison including Russia) are brought back to the values obtained within the initial regional EU/OECD comparison (i.e. are strictly fixed), and another part of values (for CIS countries) are modified proportionally by a simple rescaling procedure.

Briefly speaking, one can say that PPPs from the EU/OECD comparison and also from the expanded EU/OECD/CIS comparison are scaled to the level of EU/OECD=1, and PPPs for EU/OECD countries obtained within the expanded EU/OECD/CIS comparison are replaced with the PPPs from the initial EU/OECD comparison, followed by corresponding modification of PPPs for CIS countries.

This is the standard procedure for maintaining the fixity used by the Eurostat and the OECD (e.g. see [2], para. 12.2.6 and 12.3.5.). Technically, this procedure may be described in the formulae (3) – (6) which are given below:

(3) $ScalingCoeff{\sim}_{EU/OECD} = GEOMEAN\ \{PPP{\sim}_{EU/OECD-i}\}$ $i = 1,2, 3, …, 47$

where:

$ScalingCoeff{\sim}_{EU/OECD}$ – the geometric mean of the interim PPP~ estimates for all 47 EU/OECD countries (i) obtained within the PMC initially

(4) $ScalingCoeff^{fixed}_{EU/OECD} = GEOMEAN\ \{PPP_{EU/OECD-i}\}$ $i = 1, 2, 3, …., 47$

where:

$ScalingCoeff^{fixed}_{EU/OECD}$ – the geometric mean of the respective PPP estimates for all 47 EU/OECD countries (i) obtained within official EU/OECD comparison

(5) $\textbf{\textit{FixCoeff = ScalingCoeff}}^{\textit{fixed}}_{\textit{EU/OECD}} \textbf{\textit{/ ScalingCoeff}}^{\sim}_{\textit{EU/OECD}}$

where:

$\textbf{\textit{FixCoeff}}$ – fixity coefficient to keep the results obtained within the official EU/OECD comparison staying intact within the set of PMC final results

(6) $\textbf{\textit{PPP(NC}}_{\textit{CIS-j}} \textbf{\textit{/\$}}_{\textit{EU/OECD}}\textbf{\textit{) = FixCoeff * PPP}}^{\sim}\textbf{\textit{(NC}}_{\textit{CIS-j}}\textbf{\textit{/\$}}_{\textit{EU/OECD}}\textbf{\textit{)}}$

where:

$\textbf{\textit{PPP(NC}}_{\textit{CIS-j}}\textbf{\textit{/\$}}_{\textit{EU/OECD}}\textbf{\textit{)}}$ – purchasing power parity estimate for the CIS country j, finally obtained within partially-multilateral comparison of the joint group of CIS and EU/OECD countries, <u>after</u> applying fixity principle to the official EU/OECD comparison results

$\textbf{\textit{PPP}}^{\sim}\textbf{\textit{(NC}}_{\textit{CIS-j}}\textbf{\textit{/\$}}_{\textit{EU/OECD}}\textbf{\textit{)}}$ – purchasing power parity estimate for the CIS country j, initially obtained within partially-multilateral comparison of the joint group of CIS and EU/OECD countries, <u>before</u> applying fixity principle to the official EU/OECD comparison results

As a result, the PPP estimates for the countries participating in the OECD/EU comparison (including Russia) remain unchanged.

Therefore **all crucial requirements** formulated above **are met:**

- CIS countries get PPPs of their national currencies towards USD and other EU/OECD countries, that ensures a much wider area for comparative analysis;
- these estimates are based on a multilateral (partially) approach, that ensures their much stronger methodological soundness;
- Russia's PPPs towards USD as well as all other EU/OECD PPPs, gotten from the OECD comparison, stay strictly fixed;
- all EU/OECD rules regarding the non-disclosure of items' price data are fully met.

There is a strong users' demand for getting the PPPs estimates towards the US dollar, not a conditional currency like e.g. "OECD dollar" (USD at the OECD average price level) or "Purchasing power standard, PPS" (euro at EU average price level). Therefore, CIS-STAT publishes results towards the US dollar as the numéraire currency.

The PPPs towards the $\$_{\text{EU/OECD}}$ are rescaled to the USD in a simple way. The PPPs with the neutral base "OECD Dollar = 1" and with the base "USD = 1" (USD as numéraire currency) are different presentations of the same results.

Numerical differences: "pure" (internal) CIS results vs. CIS results within the combined EU/OECD/CIS comparison

The nature of multilateral PPP calculations inevitably predetermines the likelihood of obtaining different numerical results depending on which range of countries are involved in the comparison. Respectively "pure" (internal) CIS results and CIS results within the combined EU/OECD/CIS comparison have differences.

The differences are not uniform.

In fact, the richer CIS countries (like Kazakhstan, Belarus, Azerbaijan) having more economic similarity with Russia kept their GDP p.c. level regarding the Russia's level almost intact while moving from "pure" CIS to EU/OECD/CIS comparison.

Conversely, the poorest CIS countries got perceptibly some higher real GDP per capita while moving from "pure" CIS to EU/OECD/CIS comparison. This can be explained by the fact that a bigger number of economies similar to these countries had been included into comparison.

Applying the PMC procedure to link 2014 CIS ICP to the EU/OECD comparison provided an important finding: the gotten results demonstrated that the ranking by real GDP per capita achieved in the "pure" CIS comparison didn't change in the aggregated final results for combined EU/OECD/CIS comparison. So, the fixity principle in a broad sense is maintained for all countries in the 2014 combined multilateral comparison: for the EU/OECD countries it is strictly ensured by the PMC procedure and for the CIS countries the ranking is kept. Basing on 2014 PMC experience, one can say that no radical differences occurred for the CIS countries, but the use of a wider range of countries made it possible to obtain more robust, reliable and transparent results.

Similarity issues

Several criteria might be used to assess the similarity of economies. One of key among them – the power of economy measured by GDP per capita. The well-known fact is that it does exist a strong correlation between the GDP p.c. and the PLI (Price Level Index – ratio "PPP to exchange rate") [6].
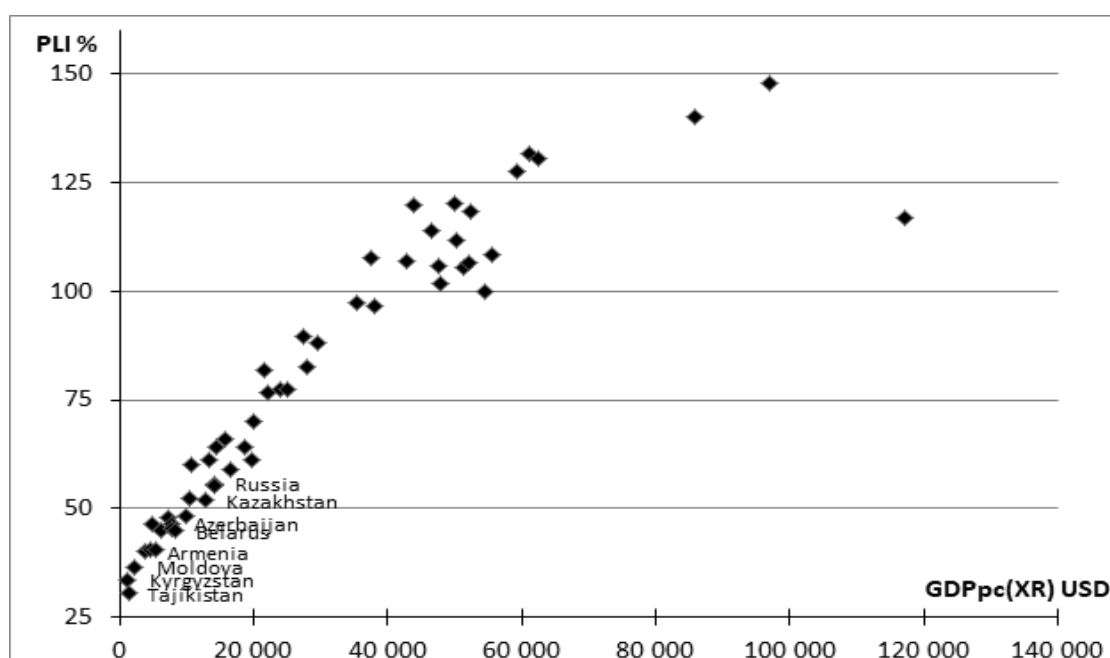
This correlation is commonly used in macroeconomic analysis and modelling (e.g. see [3], [4]).

It does reflect the fact that a stronger economy would have a higher price level than that a weaker one. The power of an economy is one of criteria to measure the similarity of

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[6] This is true for both GDP p.c. XR based and GDP p.c. PPP based.

economies. Combining the CIS ICP participating countries with the EU/OECD countries expands the number of economies similar to the CIS countries following this criterion, and therefore reinforces the comparison basis for the CIS countries.

In the context of the PPPs' computations general similarity of economies being compared is exposed through the similarity of economic structures – the GDP expenditure structure and the price structure. Effective criteria to measure these structure similarities were proposed in [6]: the values of the proposed similarity coefficient**s** lie between zero and 1, and one of important advantages is the simplicity for the interpretation and further use. Applying these similarity criteria to the 2014 EU/OECD/CIS combined data (at the level of analytical categories, see [1]) allows forming similarity groups for the CIS countries. Table 1 (similarity in price structure) and Table 2 (similarity in GDP structure) presented in the ANNEX indicate economies having similarity coefficients ≥ 70% for the CIS ICP economies.

In tables 1 and 2 countries having similarity coefficients ≥ 70% for at least a half of CIS ICP countries are marked in bold. In both tables these values are concentrated in the bottom, being more numerous at the left side and becoming less numerous at the right side. Therefore one can say that the level of structure similarity (both price and GDP) depends on the power of economies being compared: (i) less strong (GDPpc) economies have closer similar structures among them than they have regarding stronger economies; (ii) this is more important for weaker economies. Introducing additional weaker economies, which have closer structures (e.g. like Montenegro, Serbia, Macedonia, Albania, Bosnia and Herzegovina), into comparison would help to improve the quality of PPPs' computations for the CIS weakest economies (e.g. like Armenia, Moldova, Kyrgyzstan, Tajikistan).

Uniqueness of official results

The uniqueness of official results is an important condition for their correct use in the PPP based analysis. Comparison results are used in various macro-economic calculations, including very important ones where statistical ambiguities are unacceptable.

In order to exclude any ambiguity in comparison results: the PPP estimates of CIS currencies towards Russian ruble, gotten within the "pure" (internal) CIS comparison, are being considered interim only, and the CIS-STAT does not publish them. **The only official set of 2014 CIS ICP results is that one obtained via the partially-multilateral comparison EU/OECD/CIS**.

The mentioned argument is a political one. It is extremely important and it is absolutely sufficient for the decision taken. But there is also a strong methodological argument requiring focusing only on the final PMC results with ignoring the interim ones. Enlarging the number of countries with introducing more similar (by "per capita level", price structures, etc.) countries makes the multilateral comparison results being more robust and reliable. Thus the combined EU/OECD/CIS comparison results have to be considered as more sound than the results based on a smaller group of countries.

One might say that while looking for CIS currencies' PPPs towards Russian ruble the "pure" CIS comparison would be appropriate, but while looking for PPPs towards U.S. dollar the PMC procedure ensures a substantially better quality of results.

Based on 2014 CIS ICP experience, one can say that applying the PMC procedure does not provoke qualitative changes in the comparison results, and the use of a wider range of countries makes it possible to obtain more reliable results.

As regional coordinator of the CIS ICP, the CIS-STAT makes consistent efforts to develop computations allowing to link the CIS PPPs to global ones basing on a sounder multilateral approach. Within the 2014 CIS ICP, this was for the first time that CIS PPPs estimates towards USD were obtained using the partially-multilateral approach. The CIS-STAT highly appreciates the very constructive cooperation with the OECD and the Eurostat which allowed making this important step forward thanks to the support from the World Bank Global ICP Unit.

ANNEX

Table 1. EU/OECD/CIS and CIS ICP countries - similarity in price structure ≥ 70%

(countries are ranked in descending GDPpc order; similar to at least a half of CIS ICP countries are marked in bold)

	Russia	Kazakhstan	Belarus	Azerbaijan	Armenia	Moldova	Kyrgyzstan	Tajikistan
Luxembourg								
Norway								
Switzerland								
United States								
Ireland								
Netherlands	○							
Austria	○							
Denmark	○							
Germany	○							
Australia	○							
Sweden	○							
Belgium	○							
Canada	○							
Iceland	○							
Finland	○							
United Kingdom								
France	○							
Japan	○	○						
New Zealand	○							
Italy	○							
Israel	○							
Korea	○	○						
Spain	○							
Malta	○	○						
Czech Republic	●	●	●	●	●	●		
Slovenia	○	○						
Cyprus	○							
Slovak Republic	●	●	●	●	●	●		
Portugal	○	○						
Estonia	●	●	●	●	●	●		
Lithuania	●	●	●	●	●	●		
Greece	○	○						
Hungary	●	●	●	●	●	●		
Russia	●	●	●	●	●	●		
Poland	●	●	●	●	●	●		
Kazakhstan	●	●	●	●	●	●		
Latvia	●	●	●	●	●	●		
Chile	●	●	●	●	●	●		
Croatia	●	●	●	●	●	●		
Romania	●	●	●	●	●	●		
Turkey	●	●	●		●	●		
Belarus	●	●	●	●	●	●	●	●
Mexico	●	●	●		●	●		
Bulgaria	●	●	●	●	●	●	●	
Azerbaijan	●	●	●	●	●	●	●	●
Montenegro, Rep. of	●	●	●	●	●	●	●	●
Serbia, Rep. of	●	●	●	●	●	●	●	●
Macedonia, FYR	●	●	●	●	●	●		
Albania	●	●	●	●	●	●	●	
Bosnia and Herzegovina	●	●	●	●	●	●	●	
Armenia	●	●	●	●	●	●	●	●
Moldova	●	●	●	●	●	●	●	●
Kyrgyzstan			●	●	●	●	●	●
Tajikistan			●	●	●	●	●	●

Table 2. EU/OECD/CIS and CIS ICP countries – similarity in GDP structure ≥ 70%
(countries are ranked in descending GDPpc order; similar to at least a half of CIS ICP countries are marked in bold)

	Russia	Kazakhstan	Belarus	Azerbaijan	Armenia	Moldova	Kyrgyzstan	Tajikistan
Luxembourg		○				○	○	
Norway	○	○	○					
Switzerland	○	○				○		
United States	○							
Ireland	●	●		●		●		
Netherlands	○	○						
Austria	○	○						
Denmark	○	○						
Germany	○	○						
Australia	○	○	○					
Sweden	○	○						
Belgium	○	○	○					
Canada	○		○					
Iceland	○	○						
Finland	○	○						
United Kingdom	○							
France	○	○						
Japan	○	○	○					
New Zealand	○	○	○					
Italy	○	○						
Israel	○	○						
Korea	○	○	○					
Spain	○							
Malta	○							
Czech Republic	●	●	●	●				
Slovenia	●	●	●			●		
Cyprus	○							
Slovak Republic	○	○	○					
Portugal	○							
Estonia	●	●	●			●		
Lithuania	●	●	●			●		
Greece	○							
Hungary	●	●	●	●		●		
Russia	●	●	●	●	●	●	●	
Poland	○	○	○					
Kazakhstan	●	●	●	●	●	●	●	●
Latvia	○	○	○					
Chile	○	○	○					
Croatia	●							
Romania	●	●	●	●	●			
Turkey	●	●	●			●		
Belarus	●	●	●	●		●		
Mexico	●	●	●			●		
Bulgaria	○	○	○					
Azerbaijan	●	●	●	●	●	●	●	●
Montenegro, Rep. of	●	●		●	●	●	●	
Serbia, Rep. of	●	●	●		●	●		
Macedonia, FYR	●	●	●	●	●	●	●	●
Albania	●	●	●	●	●	●	●	●
Bosnia and Herzegovina	●	●	●	●	●	●	●	●
Armenia	●	●		●	●	●	●	●
Moldova	●	●	●	●	●	●	●	●
Kyrgyzstan	●	●		●	●	●	●	●
Tajikistan		●		●	●	●	●	●

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