

ICT services as a factor in financing the current account deficit of the Republic of Serbia

ICT usluge kao faktor finansiranja deficita tekućeg računa Republike Srbije

Božidar Čakajac^{a*}, Nenad Janković^a, Stevan Luković^a

^a University of Kragujevac, Faculty of Economics, Kragujevac, Serbia

Article info

Review paper/ Pregledni rad

Received/ Rukopis je primljen:
23 April, 2023
Revised/ Korigovan:
20 July, 2023
3 November, 2023
Accepted/ Prihvaćen:
21 November, 2023

DOI:
<https://doi.org/10.5937/bizinfo2302067C>

UDC/ UDK:
347.758:339.72.053.23(497.11)
004.7:336.143.231(497.11)

Abstract

The continuous current account deficit represents one of the most significant limitations of the economic development of the Republic of Serbia. The presence of a long-term current account deficit imposes the obligation to find the sources of its financing. During the last decade, the secondary income account played an important role in financing the current account deficit, primarily due to a stable inflow of remittances from abroad. Since 2011, the services trade surplus has been also contributing to offsetting the balance of payments deficit to an increasing extent mainly owing to the rising export of ICT services. Therefore, the goal of the paper is to identify the importance of ICT services in achieving the service trade surplus and, thereby, also in financing the current account deficit.

Keywords: current account, ICT services, Republic of Serbia

Sažetak

Kontinuirani deficit tekućeg računa predstavlja jedno od najznačajnijih razvojnih i makroekonomskih ograničenja privrede Srbije. Prisustvo visokih i dugotrajnijih deficita tekućeg računa nameće obavezu pronalaženja izvora njihovog finansiranja. Tokom proteklog perioda značajnu ulogu u finansiranju deficita tekućeg računa imao je račun sekundarnog dohotka prvenstveno baziran na visokom i stabilnom prilivu doznaka iz inostranstva. Od 2011. godine neutralisanju platnobilansne neravnoteže u sve značajnijoj meri doprinosi i račun usluga zahvaljujući ostvarenim rastućim suficitima, koji su u najvećoj meri bazirani na izvozu ICT usluga. U tom kontekstu cilj rada je da se identifikuje značaj računarskih i informaciono-telekomunikacionih usluga u ostvarenju suficita računa usluga, a posredstvom toga i u finansiranju deficita tekućeg računa.

Ključne reči: tekući račun, ICT usluge, Republika Srbija


1. Introduction

The balance of payments deficit may but also may not be a limitation to economic development. Some countries record high current account deficit (CAD) and at the same time high level of economic development (for example, the United States). On the other hand, there are countries that have lower CAD coupled with the lower level of economic development (for example, most of the developing economies). Except for the size of the CAD, its sustainability, as well as the availability of alternative mechanisms for deficit financing, are important factors that determine the success of economic reform movements in each country.

In the case of the Republic of Serbia, the CAD poses a significant development constraint. The presence of a deficit implies that the investments exceed accumulation of capital, that is, the national economy consumes more than it produces. In addition, the composition of the Serbian CAD has become a problem, given that it predominantly originates from the deficit recorded in the trade in goods and services. Another indication that further confirms the CAD as a development constraint in case of Serbia refers to the sources of its financing, since deficit is financed by external debt and the net inflow of foreign direct investments. Practically, this means that the sustainability of the current account deficit depends on the willingness of foreign creditors to lend capital.

* Corresponding author

E-mail address: bcakajac@gmail.com

This is an open access paper under the license 

The subject of the paper refers to the examination of the importance of ICT services in financing the CAD of the Republic of Serbia in 2007-2022 period. Given that it is one of the fastest growing sectors, the aim of the paper is to determine whether positive developments in the trade in ICT services have contributed to the reduction of the CAD in the observed period. Therefore, the research question is stated as follows:

Is the contribution of the ICT services trade in covering the current account deficit larger at the end of the observed period than at the beginning of the observed period?

The paper consists of three parts. In the second part, the dynamics, sustainability and key factors causing the CAD are analysed. The third part examines the contribution of ICT services in the continuously rising services account surpluses starting from 2011. In the fourth part, the role of ICT services in financing the Serbian CAD is analysed. In the final part of the paper, conclusions are given.

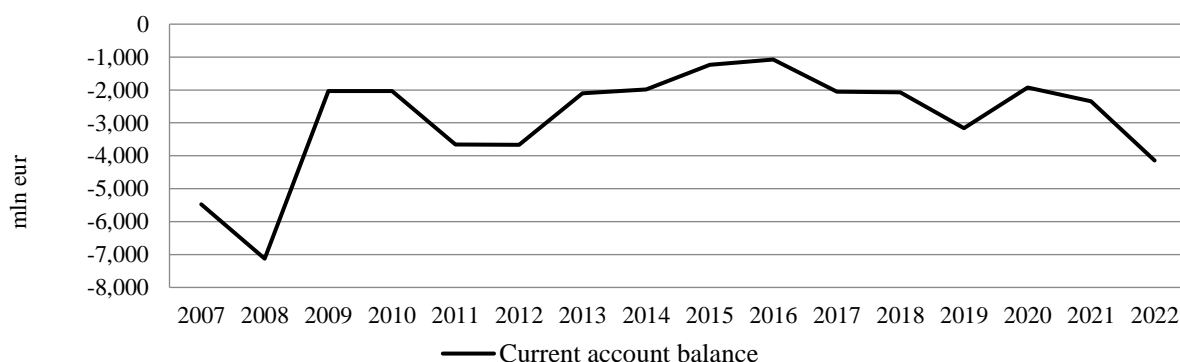
2. The analysis of the Serbian current account deficit

Changes in the current account represent an important source of information for economic policy-makers.

Broadly speaking, the existence of the CAD shows that the national economy spends more than it produces, that is, it invests more than it saves. However, the presence of a deficit must not necessarily be coupled with the inadequate economic performances (Despotović & Durkalić, 2017, 241). A large number of the most developed economies (primarily the United States) are currently recording high and growing levels of CAD (Blanchard, 2007, 3). Therefore, CAD does not pose development constraint in case adequate sources of its financing are accessible, i.e., if the borrowed funds are used in the adequate way.

One of the key macroeconomic characteristics of the Serbian economy is the existence of the persistent CAD (Grubišić&Marčetić, 2013, 22). In the period between 2007 and 2020, the size of the CAD has fluctuated considerably, but in the last two years of the observed period an upward trend is noticeable (Figure 1). The persistent CAD in case of Serbia is largely affected by the systemic problems and structural economic challenges (Kovačević, 2018, 89). In addition, global economic movements, such as the global financial crisis, Covid-19 pandemic or the Russian-Ukrainian conflict, have largely influenced the CAD dynamics.

Figure 1. The dynamics of the Serbian current account balance, 2007-2022



Source: National Bank of Serbia (2023). Balance of payments. Available at https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/platni_bilans/

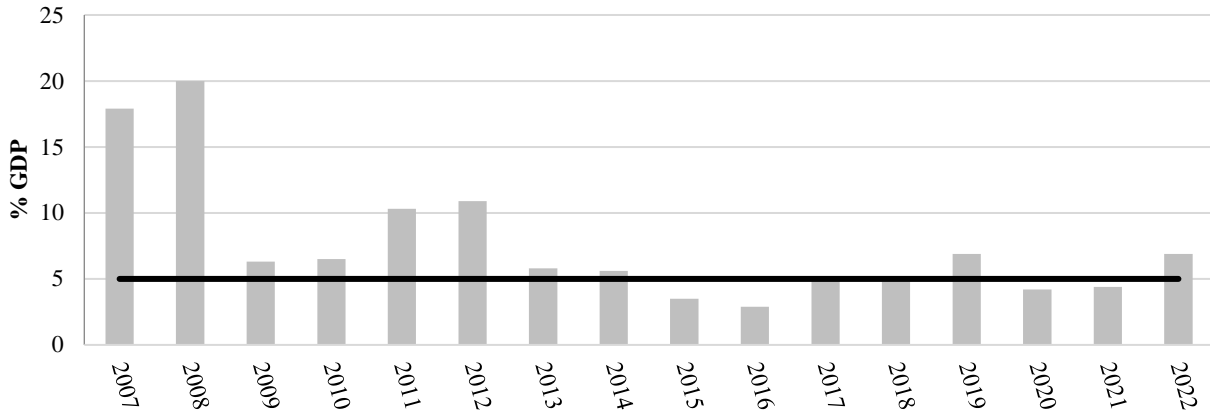
In addition to the size of the CAD, it is necessary to raise the question of its sustainability. In the economic literature, there is no generally accepted limit for the sustainable CAD. Theoretically speaking, the CAD is regarded sustainable as long as creditors are willing to finance it (Marčetić&Grubišić, 2013, 151). However, according to the guidelines of the International Monetary Fund and the World Bank, a deficit of up to 5% of the gross domestic product is considered sustainable (Aristovnik, 2006, 87; Janković, 2015, 117).

During the most of the observed period (more precisely, in two-thirds of the period), the CAD exceeded the level of the 5% GDP limit, which had a negative impact on its sustainability (Figure 2). The sustainability of the CAD was particularly impaired during the initial years of the observed period, when the largest share of the CAD in GDP was recorded (Boljanović, 2012, 141). However, since 2013, a declining trend in the ratio of the CAD and

GDP is reported due to a slightly faster growth of the GDP combined with the decrease in the CAD.

By decomposing the CAD, the key factors behind its long-term persistence can be determined. In this context, the most important issue affecting the Serbian CAD is the chronic deficit in trade in goods (Knežević&Penjišević, 2021, 99). As can be seen from Figure 3, throughout the entire observed period Serbia has been characterized by the goods trade deficit, which was at its highest level in 2022. On the other hand, the services trade has been recording continuous and growing surpluses since 2011 and is becoming an increasingly important factor in financing the CAD (Janković et al., 2022, 141). However, despite the fact that in 2022 the highest surplus in the services trade was recorded (over 2.3 billion euros), it was still insufficient to compensate the high goods trade deficit.

Figure 2. The sustainability of the Serbian CAD, 2007-2022



Source: National Bank of Serbia (2023). Balance of Payments

Figure 3. Trade in goods and services balances, 2007-2022

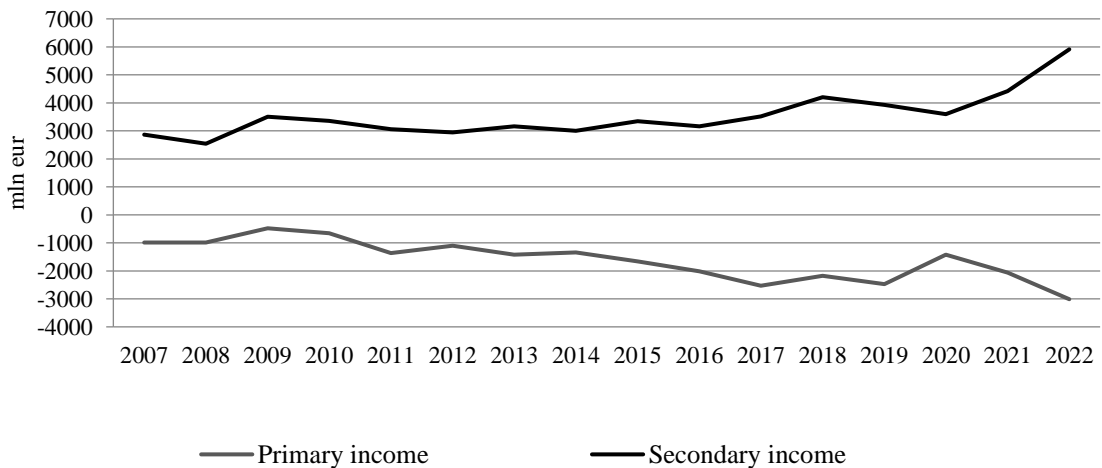


Source: National Bank of Serbia (2023). Balance of Payments

Except for the goods and services trade balance, the key element of the current account balance composition is the balance of primary and secondary income accounts. In addition to the persistent goods trade deficit, the CAD is additionally aggravated by the primary income deficit,

due to the outflow of income stemming from foreign direct investments –FDI (Kovačević, 2022, 106). As shown in Figure 4, the primary income account recorded a continuous deficit during the entire observed period, increasing by slightly more than 2 billion euros.

Figure 4. Primary and secondary income balances, 2007-2022



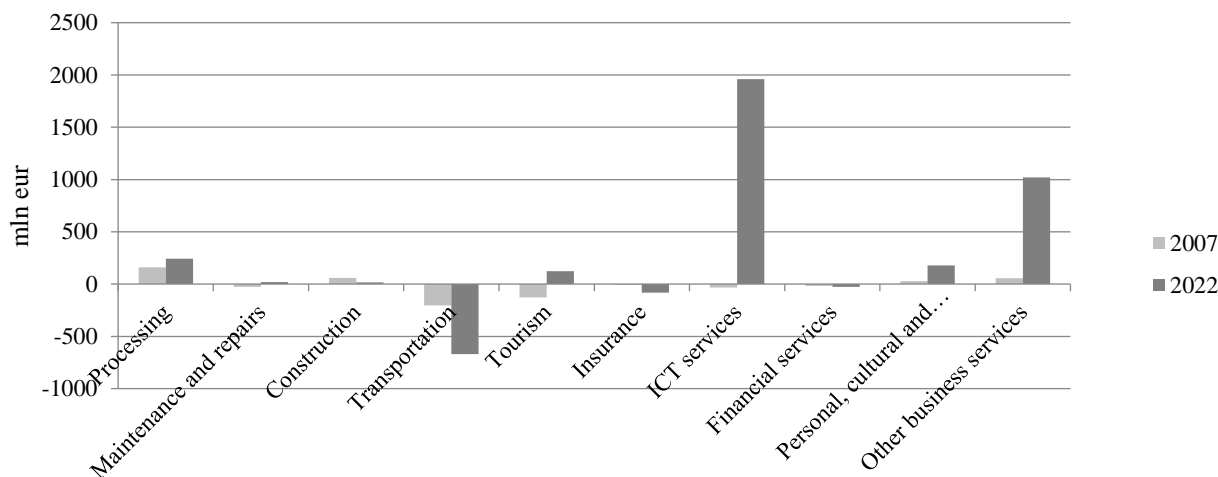
Source: National Bank of Serbia (2023). Balance of Payments

On the other hand, the secondary income account records the opposite tendencies. Due to high and growing surpluses, the secondary income represents the most important factor in financing the CAD. In the entire observed period, the secondary income account surplus was sufficient to entirely offset the primary income account deficit and partly the goods trade deficit. The most significant element of the secondary income account are remittances from abroad, whose inflow is marked by an increasing trend in the observed period.

3. The ICT services trends in Serbia

During the last two decades, the share of ICT services in global trade has been continuously rising (Nath&Liu, 2017, 82). Simultaneously, ICT services are becoming an increasingly important issue in the research concerning the balance of payments analysis (UNCTAD, 2015, 4). Regarding Serbian economy, the ICT sector has become an important factor in economic development, considering the fact that it is the fastest growing sector in the last two decades (European Commission, 2018, 7).

Figure 5. The composition of services trade balance in Serbia, 2007-2022

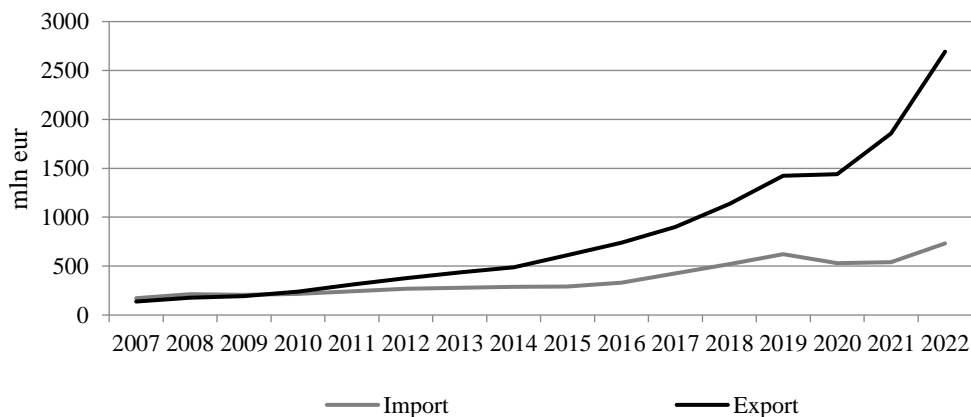


Source: National Bank of Serbia (2023). Balance of Payments

Apart from the fact that the ICT sector is gaining a growing importance for the Serbian economy, ICT services have become an important factor in offsetting the balance of payments deficit during the last decade (Kalinović et al., 2022, 197). Figure 5 shows the composition of the services trade balance by the most important categories of services in Serbia in 2007 and

2022, respectively. As can be seen, ICT services recorded by far the largest surplus increase in the period between 2007 and 2022 compared to other types of services. Therefore, it can be concluded that ICT services contributed to the greatest extent to achieving the increasing services trade surpluses in the observed period.

Figure 6. The import and export of ICT services, 2007-2022



Source: National Bank of Serbia (2023). Balance of Payments

High surpluses in ICT services trade are primarily the result of higher exports compared to their imports starting from 2014. By looking at Figure 6, it can be noted that in the initial years of the observed period, the import and

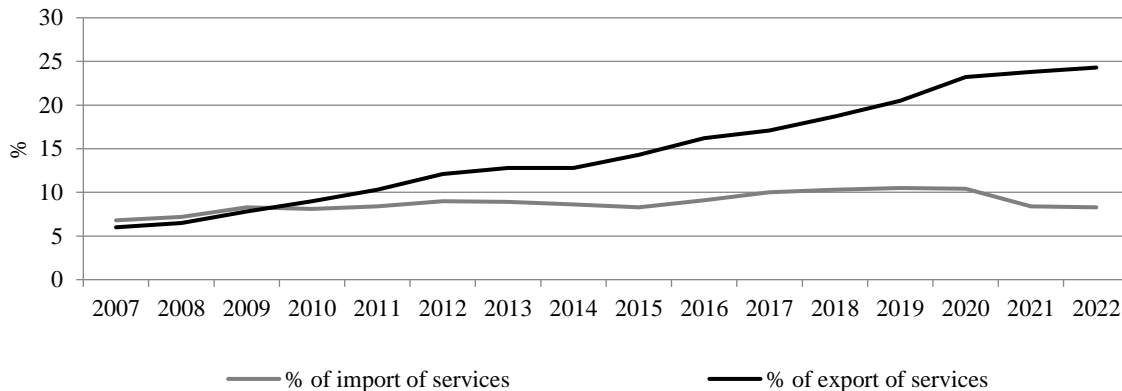
export of ICT services were approximately equal. Moreover, in the period between 2007 and 2009, the import of ICT services was slightly higher than the export. However, since 2014, the export of ICT services has been

continuously rising, while their import recorded an increase, but at a much slower pace.

Except for the fact that the surplus in ICT services trade has contributed to the highest extent to achieving the services trade surpluses, the share of export of ICT services in the total export of services has been continuously rising in the observed period. As can be seen from Figure 7, the export of ICT services in 2007

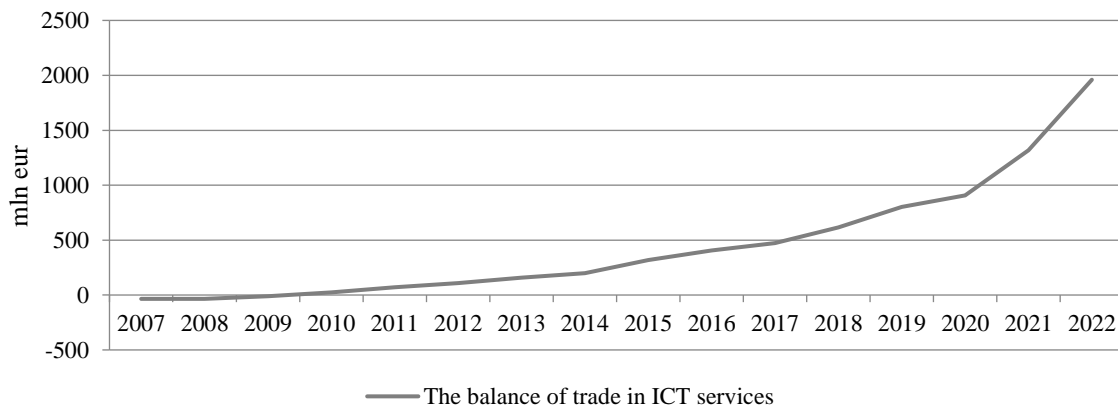
accounted for only 6% of the total export of services, and at the end of the observed period its share was almost four times higher. Compared to other categories of services, only other business services reported a higher share in the total export of services in 2022. On the other hand, when looking at the import of ICT services in 2022, only a slight increase of the share in the total import of services can be observed compared to 2007.

Figure 7. The share of ICT services in the import and export of services, 2007-2022



Source: National Bank of Serbia (2023). Balance of Payments

Figure 8. The ICT services trade balance, 2007-2022



Source: National Bank of Serbia (2023), Balance of Payments

Based on all of the above, it can be concluded that ICT services are becoming an increasingly important part of the services trade balance. Except for the fact that the ICT services trade surplus largely contributed to achieving the services trade surplus, it should point out their rising share in the total export of services. Seen from a broader perspective, growing surpluses in the ICT services trade create other positive effects, such as a positive impact on economic activity and building the reputation of Serbia in global economic and trade flows, but also solving certain unfavorable demographic trends such, as brain drain (Kalinović et al., 2022, 204).

4. The role of ICT services in financing the current account deficit

As it was pointed out at the beginning of the paper, the persistent CAD is one of the most significant

characteristics of the Serbian economy and, at the same time, one of its key development constraints. However, the problem is not only reflected in the presence of the deficit itself or its lower sustainability during the last few years, but also in the composition of the deficit and the sources of its financing. When it comes to the structure of the CAD, the main constraint lies in the fact that the deficit stems largely from the goods trade deficit. The sustainability of the CAD becomes a much bigger problem if it arises as a result of unfavorable trade trends than if it is the result of changes in the primary and secondary income account balances (Dugalić et al., 2023, 137).

Regarding the sources of financing the CAD, the key problem is the excessive reliance on FDI. More precisely, the sustainability of the CAD depends on the willingness of foreign creditors to finance this deficit instead of

domestic market participants. In the observed time period, CAD were financed primarily by borrowing abroad, i.e., by net inflow of FDI (Kovačević, 2021, 38). Starting from 2015, the net inflows of FDI have exceeded the levels of the CAD (National Bank of Serbia, 2023a, 43). However, when the income on FDI is taken into account, the situation becomes somewhat different. If the value of income on FDI, which is negative due to rising outlays from dividends and reinvested earnings, is subtracted from the net inflow of FDI, the modified net inflow is not sufficient to fully compensate the CAD (Janković&Čakajac, 2022, 391). The net inflow of FDI modified in this way covers approximately only 38% of the CAD.

Analogously, the secondary income account balance and the services trade balance play a key role in financing the CAD. Within the balance of secondary income, remittances are certainly the most important source of financing, while within the services trade balance, ICT services are the key source of financing. As can be seen from Figure 8 (see on the previous page), ICT services have recorded a continuous surplus rise since 2010, and the contribution of ICT services trade surplus in offsetting the

CAD has become evident, especially in the last three years of the observed period.

In the context of the analysis of the ICT services trade balance, it is important to note that not all its components contribute equally to growing surpluses. As can be seen from Table 1, the ICT services trade surplus can be largely attributed to computer services trade surplus, which in 2022 accounted for 98% of the overall ICT services trade surplus. The share of telecommunications and information services was significantly smaller. Also, based on the data presented in Table 1, it can be concluded that a significant change in the composition of ICT services occurred during the observed period. In the initial years of the observed period, telecommunication services reported surpluses, while computer services had a negative impact on the overall ICT services trade balance. However, at the end of the observed period, telecommunication services contributed the least to achieving the ICT services trade surplus. It should be noted that all three components of the ICT services trade balance reported surpluses in 2022 and thus positively influence the improvement of the Serbian balance of payments.

Table 1. The decomposition of trade in ICT services (mln eur)

Year	Telecommunication services	Computer services	Data and information services
2007	21	-55	0
2008	7	-42	0
2009	19	-30	0
2010	33	-8	0
2011	27	44	0
2012	36	72	0
2013	25	135	-1
2014	28	172	0
2015	33	288	-3
2016	14	396	-3
2017	11	463	-1
2018	1	610	4
2019	-11	808	6
2020	-15	917	6
2021	16	1287	14
2022	3	1918	39

Source: National Bank of Serbia (2023). Balance of Payments

Based on the data shown in Table 2 (see on the next page), an assessment of the importance of ICT services in CAD-reporting components (goods trade account and primary income in the entire period and the services trade account in 2007-2008 period and 2010) is carried out. By using the deficit-reporting components of the current account, instead of its overall balance, more relevant conclusions could be obtained regarding the role of ICT services in financing the aforementioned deficit.

In the first three years of the observed period, ICT services did not contribute in financing the CAD, since they recorded deficits. However, their share in the total CAD was negligible considering that the ICT services trade deficit made up less than half a percent of the sum of the deficits of the deficit-reporting current account

components. Thanks to the realized surpluses in ICT services trade since 2010, the mentioned sector has been increasingly contributing to the financing of the CAD, whereby its contribution was particularly pronounced in 2021. The ICT services trade surplus was equal to approximately 16.3% of the sum of the deficits of the deficit-reporting components of the CAD in 2021, slightly decreasing to 15.8% in 2022.

Based on the above, it can be concluded that in 2007-2022 period, ICT services have become a relatively significant factor in financing the CAD. Since it is expected that the rising trend in the ICT services trade surplus would continue in the future, it is likely that the ICT sector would become one of the most important factors in neutralizing the balance of payments imbalance in Serbia.

Table 2. The contribution of ICT services in financing the deficit-reporting components of the Serbian CAD, 2007-2022

Year	The ICT services trade balance (mln eur)	The sum of deficits of deficit-reporting current account components (mln eur)	The share of ICT services surplus in financing the sum of deficits of deficit-reporting current account components
2007	-35	8340	0.42%
2008	-35	9666	0.36%
2009	-12	5545	0.22%
2010	24	5387	0.45%
2011	71	6864	1.03%
2012	108	6732	1.60%
2013	159	5577	2.85%
2014	200	5453	3.67%
2015	317	5303	5.98%
2016	407	5141	7.92%
2017	473	6531	7.24%
2018	615	7268	8.46%
2019	802	8102	9.9%
2020	908	6625	13.7%
2021	1317	8078	16.3%
2022	1960	12366	15.8%

Source: The authors's calculation

5. Conclusion

Apart from the fact that ICT services account for a large share in global trade, they are becoming an increasingly important element of financing the balance of payments deficits, primarily in developing countries. The skilled human resources coupled with satisfactory quality and low costs of ICT services in developing countries are the main triggers of the rise of exporting ICT services. Hence, ICT services trade also contribute to reducing the balance of payments deficits in these countries. Such is the case with the Republic of Serbia, where the ICT sector is one of the fastest growing sectors of the economy and at the same time one of the most important service exporters.

When it comes to Serbian current account, the main issue stems from its composition and the sources of financing the deficit regarding its size and sustainability. High CAD do not necessarily pose a problem if the borrowed funds are invested wisely. In case of Serbia, the financing of the CAD rests predominantly on borrowed funds from abroad, which poses a serious threat for the future economic development. Namely, the sustainability of the CAD depends on the willingness of foreign creditors to finance it.

In addition to remittances that are the part of secondary income that has been reporting continuous surpluses in the entire observed period, the services trade account, primarily ICT services, has in recent years become a significant factor contributing to financing the CAD. Since 2016, at least a tenth of the overall deficit of goods trade and primary income has been financed in this way. Therefore, ICT services represent an increasingly important factor in reducing the balance of payments deficit. If the economic policy-makers in Serbia recognize the full extent of the potential of this sector, positive implications would be created for the improvement of the country's balance of payments position due to offsetting the persistent goods trade deficit and the CAD.

References

- Aristovnik, A. (2006). Current account deficit sustainability in selected transition economies. *Zbornik radova Ekonomskog fakulteta u Rijeci: Časopis za ekonomsku teoriju i praksu*, 24(1), 81-102.
- Blanchard, O. (2007). Current account deficits in rich countries. *IMF staff papers*, 54(2), 191-219. <https://doi.org/10.1057/palgrave.imfsp.9450013>
- Boljanović, S. (2012). A sustainability analysis of Serbia's current account deficit. *Economic Annals*, 57(195), 139-171. <https://doi.org/10.2298/EKA1295139B>
- Despotović, D., & Durkalić, D. (2017). Analysis of budget deficit in the candidate countries for EU membership. *Serbian Journal of Management*. 12(2), 237-253. <https://doi.org/10.5937/sjm12-14122>
- Dugalić, V., Kovačević, R., & Janković, N. (2023). *International Finance*. Faculty of Economics, University of Kragujevac, Serbia.
- European Commission (2018). The Potential of ICT in Serbia: An Emerging Industry in the European Context. <https://dx.doi.org/10.2760/994464>
- Grubišić, Z., & Marčetić, M. (2013). Influence of fiscal and monetary policy on external imbalance in Serbia. *Economic Themes*, 5(1), 21-35.
- Janković, N. (2015). A twin deficit: The issue of the Serbian economy. *Economic Horizons*, 17(2), 109-124. <https://doi.org/10.5937/ekonhor1502109j>
- Janković, N. & Čakajac, B. (2022a). The role of foreign direct investments in financing the current account deficit of the Republic of Serbia. in Veselinović, P. & Kostić, M. (Eds.), *Institutional changes as a determinant of the economic development of the Republic of Serbia* (pp. 371-394). Faculty of Economics, Kragujevac.
- Janković, N., Čakajac, B., Luković, S., & Mitrašević, M. (2022b). The tourism sector as a determinant of reducing the balance of payments deficit in the Republic of Serbia. *Hotel and Tourism Management*, 10(2), 137-151. <https://doi.org/10.5937/menhottur2202137j>
- Kalinović, M., Todorović, M., & Marković, I. (2022). The significance of ICT services for the balance of payments in the Republic of Serbia, *Economic Themes*, 60(2), 187-204. <https://doi.org/10.2478/ethemes-2022-0011>

- Knežević, M., & Penjišević, A. (2021). The influence of the exchange rate on the trade balance of Serbia. *Ekonomika*, 67(3), 93-105. <https://doi.org/10.5937/ekonomika2103093K>
- Kovačević, R. (2018). Structural and cyclical factors of Serbia's current account, *Economic annals*, 63(217), 75-97. <https://doi.org/10.2298/EKA1817075K>
- Kovačević, R. (2021). Serbia's foreign exchange reserve adequacy and the factors influencing their accumulation. *Economic Horizons*, 23(1), 33-53. <https://doi.org/10.5937/ekonhor2101033K>
- Kovačević, R. (2022). The effects of FDI net inflow on the current account of Southeast Europe countries – a panel causality analysis. *Economic Annals* 67(235), 95-122. <https://doi.org/10.2298/EKA2235095K>
- Marčetić, M., & Grubišić, Z. (2013). Održivost deficita tekućeg računa Srbije na dugi rok. *Anali Ekonomskog fakulteta u Subotici*, 29, 149-161.
- National Bank of Serbia. (2023). *Balance of Payments*. https://nbs.rs/sr_RS/drugi-nivo-navigacije/statistika/platni_bilans/
- National Bank of Serbia. (2023a). Inflation report - February 2023. https://www.nbs.rs/export/sites/NBS_site/documents/publikacije/ioi/izvestaji/ioi_02_2023.pdf
- Nath, H., & Liu, L. (2017). Information and communications technology (ICT) and services trade, *Information Economics and Policy*, 41, 81-87. <http://dx.doi.org/10.1016/j.infoecopol.2017.06.003>
- UNCTAD. (2015). International Trade in ICT Services and ICT-Enabled Services: Proposed Indicators from the Partnership on Measuring ICT for Development. *Technical Note on ICT for Development*, No. 3.