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## CONCEPTUAL APPROACH TO RECONCILIATION OF THE CONTROVERSIAL LINKS BETWEEN INTERNATIONAL ACCOUNTS

*Мета даної статті полягає в аналізі протиріч у взаємодії між такими компонентами міжнародних рахунків як рахунок поточних та рахунок фінансових операцій, що входять до складу платіжного балансу країни; розробці концептуального підходу щодо узгодження існуючих протиріч. Автор також висловлює деякі думки з приводу можливого використання запропонованого підходу на практиці.*

**Ключові слова:** рахунок поточних операцій платіжного балансу, рахунок фінансових операцій платіжного балансу, міжнародна інвестиційна позиція, гіпотеза боргового циклу, міжнародні потоки капіталу, тиск в області платіжного балансу.

*The purpose of this paper is to analyze the controversial interaction between such components of international accounts as current account and financial account balances; to develop conceptual approach to reconcile those controversial links; and to express some thoughts as to how this approach can be used in practice.*

**Keywords:** current account balance, financial account balance, international investment position, debt-cycle hypothesis, international capital flows, balance of payments pressures.

In today complex and rapidly changing global environment, pre- and post-crisis conditions, we have a rare possibility to witness a further development in the nature of interaction between principal macroeconomic fundamentals, dynamic and economic behavior of which in some cases differ enough from that the traditional economic theory suggests. From the point of view of International Economy the most controversial relations were probably demonstrated by the macroeconomic fundamentals in the context of interaction between, so called, international accounts.

International accounts of a given economy, as they determined in the IMF's Balance of Payments and International Investment Position Manual [1], represent accounts which summarize economic relations between the economy's residents and nonresidents, namely: balance of payments, including current account, capital account and financial account balances, and international investment position, including valuation effects and other changes in volume of foreign financial assets and liabilities.

We find that this topic is extremely important, since we believe that strong and balanced global recovery after the largest financial crisis since the Great Depression is highly depend on, from one side, analysis and reconciliation of those controversial links between economies' international accounts that can not be fully explained by the traditional theoretical approach, and,

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from another side, on clear understanding of how the acquired knowledge can be exploited to solve the most pressing problems of the modern Global Economy.

Our purpose, thus, is to analyze the controversial interaction between such components of international accounts as current account and financial account balances, to develop conceptual approach to reconcile those controversial links, and to express some thoughts as to how this approach can be used in practice.

A number of surveys and proposals have been already made by governments, international organizations and institutions, private researchers and academic circles from Ukraine and all over the world regarding the mentioned above questions. However, the main source for the exploited in this paper idea is the papers of Ghosh et al. [2], Cline W. [3] and Suranovic S. [4].

But we go further and approach the raised above questions by integrating and jointly analyzing, from one side, the debt-cycle hypothesis and, from another, the taxonomy of capital flows and balance of payments pressures.

Traditional theoretical balance of payments identity based on the principles of double-entry bookkeeping and the summing to zero of balance of payments components suggests that the sum of current account and capital account balances should be conceptually equal to the financial account balance including reserve assets (Equation 1):

$$\text{CAB} + \text{KAB} = \text{FAB} + \text{NRA}, \quad (1)$$

where CAB – current account balance, KAB – capital account balance, FAB – financial account balance (net lending/net borrowing), NRA – net reserve asset transactions.

Accordingly, the financial account in net terms (net lending/net borrowing) demonstrates potential and prospects for external financing of current account and capital account imbalance. Net provision of financial resources to or from the rest of the world measured by the current account and capital account balances must, by definition, be matched by the net inflows or net outflows of capital. A current account surplus, omitting capital account balance which is in many cases insignificant term, should correspond to the net lending to the rest of the world (net outflow of capital), whereas a current account deficit should reflect net borrowing from abroad (net inflow of capital).

However, the recent IMF's World Economic Outlook [5] and Global Financial Stability Report [6] statistics as well as recent papers clearly demonstrate that international capital flows more likely do not respond to the current account imbalances as it is suggested by the general balance of payments identity. Thus, in this case «The law of communicating vessels» does not work in practice properly. The most frequent explanation for this lies in the presence of statistical errors and omissions. But what if these statistical discrepancies become increasingly excessive? They are difficult to explain. «Dark Matter», «Black Holes», «Missing Links», «White Spots» in the theory? Which of the listed above possible explanations? Whatever, individual economies continue experiencing what in 1998 George Soros aptly defined as «the untenable discrepancy between the trade account and the capital account» [7].

Meanwhile in today globalized world of hot money and speculative capital, high mobility of capital flows and weakening budget constrains, there are a variety of different «pull» and «push» factors that perhaps are not aware that the international capital flows are aimed exactly in financing of the current account imbalances. For example, capital inflows, that recently have created significant new challenges for macroeconomic management and financial stability for the major Emerging market economies, can be attributed not only to the domestic developments

in the recipient countries alone, such as increasing extent of financial openness, strong growth prospects, growing productivity and so on. They also reflect the role of push factors originated in the source countries (stance of monetary and fiscal policies, state of financial markets, overall economic performance) and Global economy in general (the pace and trends in the integration processes, economic and financial globalization). As a result, direction and destination of international capital flows could change significantly.

The above discussion makes it necessary to define all theoretically possible combinations of the interaction between the current and financial account balances and thus circumstances which an individual economy might fit in. One way to solve this problem is to approach it from the perspective of differences in the nature and source of balance of payments pressures, usually defined as sum of net total flows of non-reserve capital and the current account balance.

Based on this approach Ghosh et al. [2] developed a flow-based conceptual taxonomy of capital flows and balance of payments pressures and presented five different circumstances (cases) according to all possible combinations of current account balance and net total non-reserve capital flows. For characteristics and description of the cases see Table 1. For visual representation of two-dimensional taxonomy and segmentation of cases see upper chart of Figure 1.

The foregoing discussion allows drawing two important observations. First, as it can be seen, both current account deficits and surpluses can be followed – with varying intensity – by both net inflows and outflows of capital, i.e. current account deficits are not necessarily accompanied by the net capital inflows, whereas the surpluses – by the net capital outflows.

**Table 1.**  
**Distinctive features of the Taxonomy's Cases**

CASE No	Characterized by	Balance of Payments Pressures	Description
CASE 1	CA Deficit $\geq$ Net Borrowing	<i>Negative</i> CA Deficit dominates	Capital Inflows to finance CA Deficit
CASE 2	CA Deficit $<$ Net Borrowing	<i>Positive</i> Dominating Capital Inflows	Speculative Capital Inflows in search of Higher Rate of Return
	CA Surplus $<$ Net Borrowing		
CASE 3	CA Surplus $\geq$ Net Borrowing	<i>Positive</i> CA Surplus dominates	Capital Inflows accompany CA Surplus
	CA Surplus $\geq$ Net Lending		CA Surplus is offset by Capital Outflows
CASE 4	CA Surplus $<$ Net Lending	<i>Negative</i> Dominating Capital Outflows	Capital Outflows exceed CA Surplus
CASE 5	CA Deficit $\geq$ Net Lending	<i>Negative</i> CA Deficit and Capital Outflows may dominate on equal	Capital Outflows and CA Deficit may be equally large

Source: Compiled from Ghosh et al., 2008

In support of their approach authors of the taxonomy presented descriptive statistics of observations over countries under particular cases (Table 2).

Although the number of countries that facing balance of payments pressures specific to Case 1 and Case 3 is substantial, the number of countries in Case 2 is equal to the sum of countries in the two previous cases. Cases 4 and 5 also include dozens of countries. Thus, other things being equal, conceptual taxonomy of capital flows and balance of payments pressures, which helped to define and visually present mentioned above circumstances, is proved to be evidently right and useful.

And the second, only two out of five cases are seem to be the most acceptable and justified from a theoretical point of view, namely Case 1 and partially Case 3. According to the Case 1, net capital flows, by and large, emerge in response to a need for current account deficit financing. This situation is mapped to the north-west quadrant below 45-degree line of taxonomy. And only one half of taxonomy's segment in Case 3 can also be theoretically proved. This triangular segment is located in south-east quadrant above 45-degree line and corresponds to the situation, where current account surplus is balanced by the net capital outflows. Both segments are shadowed in the presentation of taxonomy on Figure 1.

**Table 2.**  
Descriptive statistics of current account, capital flows and balance of payments pressures

	1989-2007			1999-2007		
	Current account balance	Total capital flows	BOP pressures	Current account balance	Total capital flows	BOP pressures
	Case 1			Case 1		
Number of observations	181	181	181	81	81	81
Mean	-6.8	3.9	-2.9	-5.5	3.8	-1.8
Standard deviation	7.5	4.1	6.4	4.0	3.1	2.2
	Case 2			Case 2		
Number of observations	447	447	447	223	223	223
Mean	-3.7	7.0	3.3	-4.1	7.7	3.5
Standard deviation	4.3	5.7	3.6	5.3	6.1	3.2
	Case 3			Case 3		
Number of observations	158	158	158	112	112	112
Mean	6.3	-1.8	4.5	7.0	-2.1	4.9
Standard deviation	5.3	4.2	3.4	5.7	4.6	3.5
	Case 4			Case 4		
Number of observations	38	38	38	20	20	20
Mean	3.6	-5.8	-2.1	5.1	-7.3	-2.2
Standard deviation	3.2	4.2	2.8	3.5	5.0	3.3
	Case 5			Case 5		
Number of observations	36	36	36	14	14	14
Mean	-3.1	-1.7	-4.8	-1.6	-1.8	-3.3
Standard deviation	3.4	1.4	3.4	1.5	1.7	1.7

Source: Ghosh et al. 2008

At the same time, authors also emphasize two caveats of the approach. They discuss that the two dimensional taxonomy does not left the room for so necessary under modern circumstances consideration of the net international investment position dynamics. And while authors analyze how net foreign asset position modify the appropriate for each of the cases policy responses when relevant, and include controls to take account of it in their empirical examination, we propose our solution to address this caveat and, at the same time, a conceptual approach aimed to understand modern pattern of current account and financial account balances reconciliation.

Our idea is to integrate the discussed above conceptual taxonomy of capital flows and balance of payments pressures and debt-cycle hypothesis (the lower chart of Figure 1 and Table 3), a conceptual framework that, from one side, relates current account balance to the dynamics of economy’s net international investment position, whereas, from another side, links all possible combinations of current account deficits/surpluses and net foreign asset/liability positions to the certain stages of a country’s development.

Following Suranovic S. [4] and Cline W. [3], it is possible to define four situations that any country can match in the corresponding period of its development: i) young debtor nation, ii) mature debtor nation, iii) young creditor nation, and iv) mature creditor nation. Table 3 demonstrates stages of the international debt cycle as well as their optimal theoretical characteristics in the context of balance of payments components.

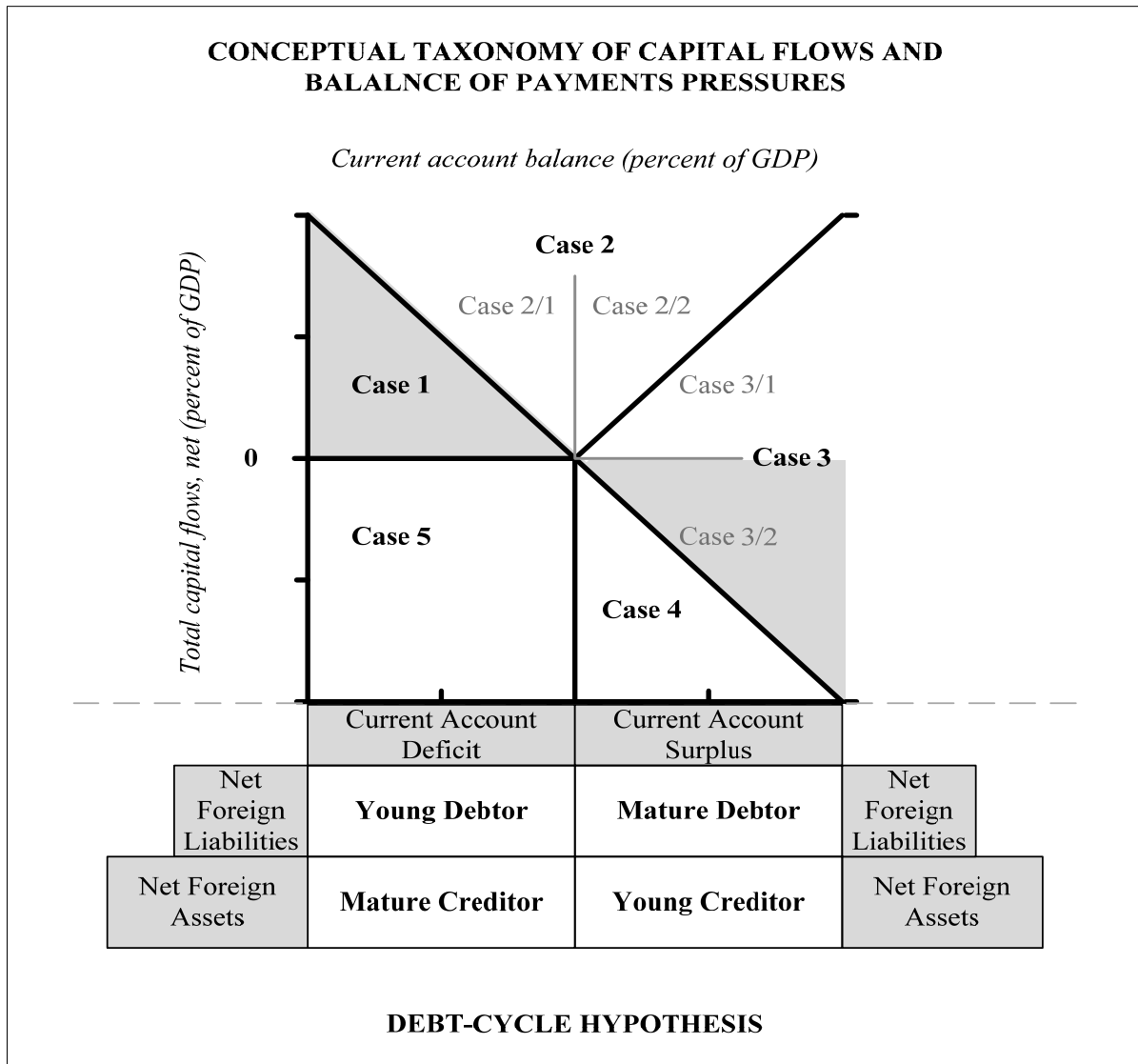
**Table 3.**  
**Debt-cycle stages and their characteristics**

	<b>Current Account Deficit</b>	<b>Current Account Surplus</b>
<b>Net Foreign Liabilities</b> (foreign assets < foreign liabilities)	<p><b>Young Debtor</b></p> <ul style="list-style-type: none"> <li>- consumes more than produces</li> <li>- experiences CA deficit</li> <li>- experiences net capital inflow</li> <li>- increases net foreign liabilities</li> <li>- experiences negative net investment income (net outflow)</li> </ul>	<p><b>Mature Debtor</b></p> <ul style="list-style-type: none"> <li>- spends less than produces</li> <li>- rises CA surplus</li> <li>- experiences net capital outflow</li> <li>- repays net foreign liabilities</li> <li>- diminishes net outflow of investment income</li> </ul>
<b>Net Foreign Assets</b> (foreign assets > foreign liabilities)	<p><b>Mature Creditor</b></p> <ul style="list-style-type: none"> <li>- consumes more than produces</li> <li>- rises CA deficit</li> <li>- rises net capital inflow</li> <li>- reduces net foreign assets</li> <li>- diminishes net inflow of investment income</li> </ul>	<p><b>Young Creditor</b></p> <ul style="list-style-type: none"> <li>- spends less than produces</li> <li>- decreases CA surplus</li> <li>- reduces net capital outflow</li> <li>- accumulates net foreign assets</li> <li>- experiences positive net investment income (net inflow)</li> </ul>

Source: Compiled from Cline (2005), Suranovic (2009)

From one side, debt-cycle hypothesis includes only traditional net capital flows which offset correspondent current account deficits or surpluses, and yet relates the latter to the dynamics of economy’s net international investment position. From another side, taxonomy demonstrates a greater variety of combinations for differed in nature and intensity net capital flows related to the current account deficits and surpluses. From this perspective, it seems to be

quite reasonable to integrate both approaches on the basis of their direct connection with the current account balance (Figure 1).



**Figure 1.** Taxonomy of capital flows and balance of payments pressures and Debt-cycle hypothesis – Presentation of integrated approaches (compiled by author)

Figure 1 gives a comprehensive overview of all possible combinations between such components of balance of payments international accounts as current account balance, financial account balance and net international investment position.

Analysis of the presented scheme took place in two steps. First, individual stages of the debt-cycle hypothesis through the corresponding current account balances were related with all possible according to taxonomy capital flows and balance of payments pressures directions and scales of net capital flows. Then, we estimated the effect of net capital flows on the dynamics of net international investment positions specific to one or another debt-cycle stages. Table 4 summarizes the results of undertaken analysis.

**Table 4.**  
**Results of the joint analysis of Debt-cycle hypothesis and Taxonomy of capital flows and balance of payments pressures**

Debt-Cycle Stages		Characterized by		Experience Capital Flows which according to Taxonomy correspond to			
I	Young Debtor	CA Deficit	Net Foreign Liabilities	Case 1 – Net Capital Inflows	Case 2/1 – Net Capital Inflows	Case 5 – Net Capital Outflows	
				<b>and lead to</b>			
Increase	Increase		Decrease				
IV	Mature Creditor		Net Foreign Assets	Case 1 – Net Capital Inflows	Case 2/1 – Net Capital Inflows	Case 5 – Net Capital Outflows	
		<b>and lead to</b>					
Decrease	Decrease	Increase					
II	Mature Debtor	CA Surplus	Net Foreign Liabilities	Case 2/2 – Net Capital Inflows	Case 3/1 – Net Capital Inflows	Case 3/2 – Net Capital Outflows	Case 4 – Net Capital Outflows
				<b>and lead to</b>			
Increase	Increase		Decrease	Decrease			
III	Young Creditor		Net Foreign Assets	Case 2/2 – Net Capital Inflows	Case 3/1 – Net Capital Inflows	Case 3/2 – Net Capital Outflows	Case 4 – Net Capital Outflows
		<b>and lead to</b>					
Decrease	Decrease	Increase	Increase				

Thus, by integrating taxonomy of capital flows and balance of payments pressures, from one hand, and debt-cycle hypothesis, from another, we developed conceptual approach that on the basis of triangular interconnections between main components of the international accounts allows (i) to reconcile controversial interaction between such components of balance of payments as current account and financial account balances, and (ii) to define different circumstances according to all possible in practice combinations of current account balance and net total non-reserve capital flows that can not be fully explained by the traditional theoretical approach.

Another extremely important outcome of the developed approach is that it emphasizes the crucial role of the net international investment position (net foreign assets/ net foreign liabilities) in reconciliation of the controversial links between current account and financial account balances. Otherwise, achievement of this goal, using only the balance of payments traditional theoretical identity, would be impossible.

Indeed, since balance of payments data reflect only the volume of transactions over a certain period of time, quarter or year, they represent the flows and, therefore, cannot be used as true ground for reconciliation. Together with data on flows for these purposes one should use the cumulative over time data on the volume of performed transactions, i.e. indicators of stocks. Thus, in determining of different circumstances according to all possible in practice combinations of current account imbalances and international capital flows, that traditional economic theory fails to explain, one should also take into account net international investment position.

In this connection, developed conceptual approach may definitely have at least one practical implication. By relating different in nature, scale and intensity net capital flows to the net international investment position, it enables to track the dynamics and direction of the latter more accurately, than it would be possible on the basis of the traditional theoretical approach. Indeed, traditional theoretical analysis supposes quite direct effect of current account deficits and surpluses on net international investment position through only two possible net capital flows – in-

flows and outflows, respectively. Whereas presented above concept provides much more diversified approach.

In addition, more accurate dynamics of the net international investment position can then be placed within the different combinations of factors negatively influencing sustainability of current account balance in each of the debt-cycle stages. And since the stabilized at a certain level ratio of net international investment position to GDP is considered by many researchers as one of the more operational measures of current account balance sustainability, our approach, through the more in-depth modeling of interaction between such components of international accounts as current account balance, financial account balance and net international investment position, allows a more precise interpretation of the external sustainability in different circumstances and conditions.

Moreover, since the international accounts may be considered as the concentrated reflection of all the existing problems of individual economies in general or their domestic sectors economic development, as evidenced by the System of National Accounts [8] and the Balance of Payments [1] general identities, the presented paper is supposed to have an important theoretical significance, as well as practical implications.

All conclusions drawn from the undertaken analysis are intuitive and narrative, and therefore require further verification and justification, based on extensive use of statistical material and conduct of econometric research.

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