

# International Equilibrium: the Stories We Tell

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## Abstract

Macroeconomic theory and macroeconomic aggregates are a sine qua non for the economic policy decision-making. It is of vital importance not only that macroeconomics aggregates are measured as correctly as possible but also that their content constitutes an appropriate input into the macroeconomic models, in line with the expectations and intentions of modellers. In this paper, we focus on the current methodological treatment of respective statistical indicators serving as an illustration of conditions under which external balance in the IS-LM-BP model is achieved and where pressures on foreign exchange rate ensue. We will investigate the consequences of the current content of external statistics indicators for their interpretation in the stories economists tell about the international equilibrium and its adjustments, whether in class or in policy-making.

## Keywords

*International equilibrium, BP curve, exchange rate*

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## INTRODUCTION

Macroeconomic theory and macroeconomic data are a sine qua non for the economic policy decision-making. The former provides a general framework for how large units, such as the entire economy or its constituents (sectors or industries), operate and how they are affected by changes in economic conditions or the policy setting. The latter supplies ways of quantifying the theoretical concepts used by the former, making testing and illustrating their validity, and hence the whole policy decision-making based on them, possible.

Now the implicit assumption here is that the metric, or the indicator, is designed and its data collected to capture the phenomenon, whose quantification it is assumed to provide, reasonably well. That is to say, that e.g. a price indicator embraces all prices policymakers are interested in, or that all value-creating activities are appropriately counted in GDP. In any case, the methodology of indicators dictates how a respective indicator can be read and what it actually constitutes. The way of quantification also affects the choice of a respective indicator to illustrate or to examine the validity of a theory.

It is of note that, especially after the World War II, the evolution of macroeconomic statistics gradually started to follow its own course without being fully constrained by the objective originally pursued

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by the economic theory.<sup>2</sup> Such deviation might have led to a situation where the content of macroeconomic aggregates provides the policymakers with information that is interpreted in a way divorced from its actual content.<sup>3</sup>

One of the fields of macroeconomic statistics that has experienced very substantial modifications over time is the methodology and the framework of external statistics. This paper aims to discuss one particular set of external statistics whose use spans both policy-making and education, namely the balance of payments and its role in, and relation to, the concept of international equilibrium.

In formulating the international or external equilibrium, we rely, in the classroom as in policy-making, on an intuitive story we like to tell. Analogous to the original price-specie-flow mechanism described early, e.g., by Hume in his treatise *On the Balance of Trade* published in 1752, adapted for a world of fiat currencies and based on the monetary approach (e.g., Mundell, 1968), is predicated on exchange rate adjustments as the equilibrating force. The macroeconomic statistics reflecting here the notion of international equilibrium is the balance of payments, whose deficits and surpluses result from imbalances in the supply of and demand for money (Bijan and Moshin, 1977). However, Obstfeld and Taylor (2002) pointed out that with the growing international capital market, relying on the balance of payments statistics, as a reflection of external balance was increasingly questionable.

Indeed, the methodology of external statistics does not follow the monetary approach, reflecting therefore an international flow of money in scope unknown to users. Instead, external statistics, as currently defined, is rather focused on the international flows of economic values. Against this backdrop in the methodological changes that have been gradually taking place over decades, we will investigate in this text the consequences of the current content of external statistics indicators for their interpretation in the stories we tell about the international equilibrium and its adjustments. On the theoretical as well as practical grounds, we will discuss and investigate the contention put already by Machlup (1950) that there is not necessarily a relationship between accounting balance of payments and market balance of payments.<sup>4</sup>

To that end, the paper is organized as follows. First, the current statistical method of external statistics will be examined in detail necessary for further discussion of the object of this paper. Then, we will proceed to the definition of external balance in the IS-LM-BP model, concretely the BP curve and statistical indicators serving as an illustration of conditions under which external balance is achieved or where pressures on foreign exchange rate ensue. In the last chapter, a presumed misalignment between theoretical and statistical approach is outlined.

However, before proceeding further, the content of the term “external balance” as used throughout the text is to be clarified. In its broader sense, the term “external balance” refers to the total balance of current and capital accounts of the balance of payments. In methodological terms, this corresponds to the item “net lending/borrowing” as defined in the statistical methodology. Besides, when examining the main topic of the paper and in line with the logic of the Mundell-Fleming model, the term “external balance” will also be identified with foreign trade balance only, i.e. a narrower sense of “external balance” routinely employed in macroeconomic theories and textbooks, is also utilized.

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<sup>2</sup> This is not least the case of GDP, which was originally designed to define taxable capacity of economy (Coyle, 2014).

<sup>3</sup> Consider the most prominent indicator, the GDP, which is routinely employed as an indicator of the level of economic welfare or the value of all goods and services created in an economy and its changes in time (economic growth). In fact, the GDP might tell us little about the flow of cash in the economy due to its accrual nature. It therefore might be the case that while the GDP figure is growing, insolvency is spreading across the economy as suppliers don't get paid as contractually agreed, which was indeed the case in the Czech economy in 2017.

<sup>4</sup> Accounting balance payments is defined as difference between credit and debit transactions as recorded in the balance of payments statistics, while market balance of payments reflects the amounts supplied and demanded on the currency markets (Machlup, 1950).

## 1 BALANCE OF PAYMENTS STATISTICS AND THE EXCHANGE RATE

Balance of payments (henceforth as “BoP”) statistics is an integral part of the general macroeconomic framework and an input into economic policy decision-making. The standard macroeconomic narrative told chiefly in economic textbooks, but assumed in academic papers as well, is that the imbalances of the respective BoP macroeconomic aggregates, such as the current account balance, primarily create pressure on foreign exchange rate (henceforth as “ER”) changes through the interactions between residents and non-residents<sup>5</sup>. For instance, a large foreign trade surplus is accompanied by an appreciating exchange rate, high volumes of dividends or interest paid abroad result in exchange rate depreciation, etc.

Empirically, however, such mutual interdependence does not appear to hold. A rather weak relation between prominent BoP aggregates and exchange rate<sup>6</sup> movements is increasingly getting the attention of economists.<sup>7</sup> Camacho and Lindström (2021), when analysing the Swedish economy, point to the fact that although the Swedish current account has experienced a surplus for the past 27 years, the krona’s exchange rate was on a weakening path. As the authors concluded, this trend can be explained, *inter alia*, by a higher level of domestic savings and lower domestic interest created an incentive to invest free capital abroad rather than in the domestic economy.

Müller-Plantenberg (2010) points out that the ER movements depend on whether financial flows recorded in the BoP only accommodate transactions in the current and capital accounts or whether financial flows move in a rather autonomous fashion, depending on the extent of capital flows restrictions. In formulating a simple model of economic adjustments, the author therefore employs the BoP flows recorded in both non-financial and financial accounts that might be ER-relevant. Apart from that, a time lag between a flow of value (accrual point) and a related movement of cash may defer the impact of given transaction in the external balance on the ER.

As pointed out by Drahozalova and Rybacek (2025), a deviating pattern between external balance, in its broader sense (current and capital accounts), and the ER adjustments has been clearly observable in the Czech economy as well. Indeed, as shown in the following chart, the Koruna’s (CZK) ER adjustments towards global currencies mostly did not follow the trend in the external balance. There are only few exceptions such as the year 2017 where 2.4% surplus in external balance was accompanied by the appreciation of the CZK towards both EUR and USD. In the most recent years, a deficit in 2022 was followed by a surplus in 2023 while the ER against EUR, which takes the major fraction in the external flow in and out of the Czech economy, developed quite contrarily, i.e. the CZK appreciated in 2022 and then depreciated in 2023.

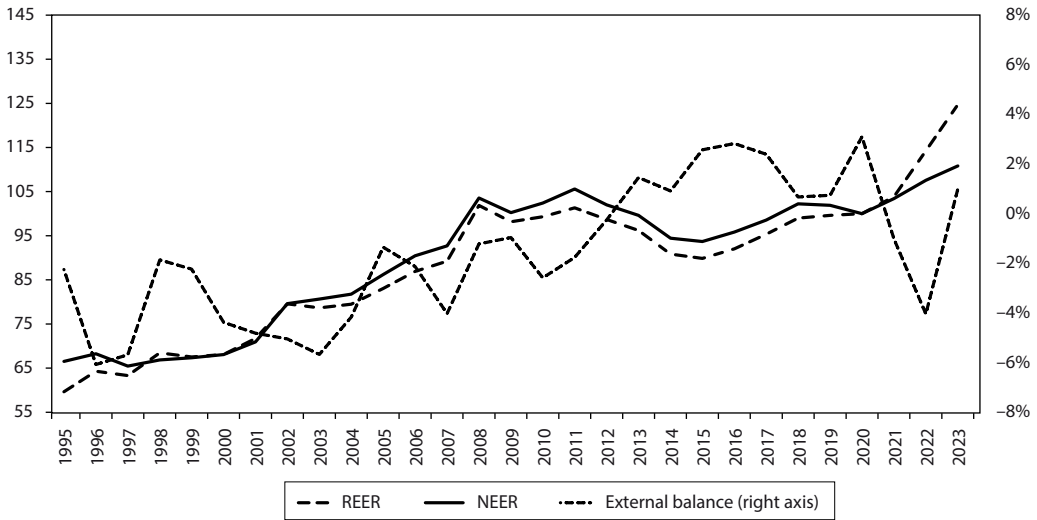
There is a number of explanations for this seemingly counterintuitive development. As pointed out in Drahozalova and Rybacek (2025), the transactions recorded in the BoP are not necessarily coupled with a transfer of cash and thus a conversion from one currency to another, as the BoP statistics applies the accrual principle. Even more importantly, the ER changes have been dominated by capital flows such as portfolio investments in the first place, which are, however, recorded outside of the external balance. Furthermore, Blanchard, Chamon, Gosh and Ostry (2015) and Gardberg (2018) further argued that also the form of capital (in terms of instruments) entering and leaving the economy matters, e.g. financing through equity exhibits lower sensitivity of the ER to international flows than debt financing.

<sup>5</sup> See e.g. Makin (2005), Dornbusch and Fischer (1994), Mach (2001), Johnson, Zuber and Gandar (2005), or Leightner (2024).

<sup>6</sup> The US dollar exchange rate can serve a textbook example when the US external balance only weakly affects the USD exchange rate, as the US dollar serves as global currency and is therefore routinely employed in the external transactions between non-US individuals and companies.

<sup>7</sup> See e.g. Cheung, Chinn and Fujii (2010), or Kincaid et al. (2001).

**Figure 1** The Czech external balance (current and capital accounts; % of GDP), changes in the exchange rates CZK/EUR and CZK/USD (index, 1999–2023)



Source: <www.cnb.cz>

Data compilers and users have also been increasingly aware of the weakening relation between the external balance and the ER, which also followed substantial methodology changes the BoP statistics has gone through over the last decades. To develop new statistical tools, the ECB staff proposed the “monetary presentation of the balance payments”, first suggested in 2008 (Buc, Mayerlen and Sola, 2008) and further updated in 2020 (Aguilar, Soares and Alidad, 2020). In principle, the monetary presentation separates the external transactions within the BoP statistics carried out through the banking industry. While still suffering from many weaknesses, such as missing information on the conversions between banks themselves, the creation of alternative tools clearly represents an aim to overcome the limited power of the BoP aggregates in explaining (and predicting) the ER adjustments.

Hence, there is a growing body of evidence that the relation between the external balance aggregates and the ER changes is rather weak. At a practical level, the compilers aim to create further statistical tools, and the users have discovered that the financial account, as an integral part of the BoP statistics, provides better insights into the development of ER. From another perspective, the issue we are dealing with in this paper is often referred to as “adequacy problem” (Kostakova, 2019). It arises when an aggregate employed in the analysis does not capture the respective phenomena adequately so that there is a gap between the development of the aggregate believed to be related to the phenomenon and the development in the phenomenon itself. Adequacy problem constitutes one of fundamental reasons why postulates of economic theory are not necessarily demonstrable by statistical data. The issue analysed in this paper can be thus also observed as a dimension of the adequacy problem, here as an ability of the core BoP aggregates to contribute to explanation of the exchange rate changes.<sup>8</sup>

<sup>8</sup> Yet, there is another important implication of this weak relationship that transcends mainstream policy-making, and that is the pedagogical use of these aggregates we make in classrooms. From simple stories about the international equilibrium to more formal macroeconomic models (such as the IS-LM-BP), we hate when our story is contrasted with actual data by an avid student, forcing us to engage in convoluted attempts to square the just presented theory with empirical data, at which point we typically lose the audience altogether.

## 2 BOP THEORY: MUNDELL-FLEMMING MODEL AND THE BP CURVE

BP curve is an indispensable part of the Mundell-Flemming model (or IS-LM-BP model), widely employed in macroeconomic modelling,<sup>9</sup> which portrays the relationship between the level of output, and the interest rate and the nominal ER for a small open economy in the short run. The BP curve constitutes an extension of the IS-LM model by displaying the points of overall balance of flows between domestic economy and the rest of the world. In the framework of the model, the BP curve describes the functional relationship between the interest rate and output which maintains the flows between residents and non-residents balanced.

Let's briefly describe the logic behind the BP curve. The BP curve is a set of points showing the combinations of the interest rate and the level of output that are compatible with international equilibrium. That implies that the balance of payments is in fact in perfect balance, meaning that the balance of capital accounts precisely compensates for the balance of the current account *ceteris paribus*.<sup>10</sup> In the current terminology, with the introduction of the manual BPM6, this corresponds to a situation where the sum of the balances recorded in the current and the capital account equals the balance in the financial accounts.

Further in the text, we will refer to the sum of current and capital accounts as “non-financial accounts balance (NFAB)”, while to the balance of financial flows as “financial account balance (FAB)”. Formally, following the methodology of BPM6 being currently in place, the BP curve can be written as follows:

$$\text{NFAB}(i, Y) = -\text{FAB}(i, Y), \quad (1)$$

where NFAB and FAB are both functions of interest rate ( $i$ ) and domestic output ( $Y$ ). The macroeconomic textbooks routinely employ a simplified view of the NFAB as foreign trade (NX) and FAB as portfolio investment. This then allows making a simplified presentation of the Formula (1) as the left-hand side being a function of output and the right-hand side being a function of the interest rate differential between the domestic economy and the rest of the world (Mach, 2001). This simplification, however, results in understanding of the adjustment process by means of ER changes that is generally not observable in the official macroeconomic statistics, as demonstrated below.

Let's look at the combinations of the interest rate and output level that lie off the BP curve. All of these combinations indicate an international disequilibrium: if the economy operates at a combination lying to the left of the curve, then its BoP must be in surplus. In that case, the level of output generates relatively low demand for imports, affecting the trade balance in a positive direction. On the other hand, comparatively higher interest rate gives rise to a net inflow of capital seeking higher-yield opportunities. The combined effect on both NFAB and FAB, resulting in a BoP surplus will then create pressure, as the story goes, on the ER to appreciate.

If the economy operates in the flexible ER regime, then the ER appreciation pressure will materialize, initiating the self-correcting mechanism to reduce the original BoP surplus.<sup>11</sup> For completeness,

<sup>9</sup> See e.g. Céspedes, Chang and Velasco (2008), Dvoskin, Feldman and Landau (2024), Huh (1999), Azar, Bolbol and Mouradian (2020).

<sup>10</sup> The curve is constructed for a given level of domestic prices, exchange rate and net foreign debt (Melvin and Norrbin, 2023). Any change in these variables results in a shift of the curve right- or leftwards. Our discussion is, however, focused on the reflection of the BP curve in the macroeconomic statistics, so the discussion on the determinants of the slope and the shape is beyond our topic.

<sup>11</sup> For the sake of completeness, if the central bank commits to the fixed exchange rate, the reserve assets held by the central bank are bound to increase as the central bank, through its direct purchases of foreign currencies on the FX market, attempts to prevent the appreciation from taking place. Whether increasing international reserves in the balance sheet of the central bank will be translated into growing money supply in the domestic economy is dependent on whether the central bank will resort to sterilization of these operations or not.

if the economy operates at a combination of out and interest rate differential lying to the right of the BP curve, then the BoP is in deficit, and an inverted set of consequences triggered by the pressure for the ER to depreciate ensues. Therefore, the model story heavily relies on the BoP aggregates to illustrate how imbalances of the domestic economy towards the rest of world are to be remedied by the ER adjustments (when left to float freely). Exchange rate adjustment are thus seen as balancing mechanism in the model.

In the following section, we will confront the logic of the model on the empirical, as well as theoretical grounds. We will make use of the actual data to find out whether the model conclusions about the current account balance and net portfolio investment flows can be upheld, considering the content of the concerned aggregates as currently defined.

### 3 BOP EMPIRICALLY: THE CZECH EXPERIENCE

The definitional inference from the BP curve is that if international payments are not in balance, i.e. the economy operates “off the curve”, there will be pressure on the ER to either appreciate or depreciate, thus tending to eliminate the initial imbalance. To demonstrate this development with respective statistics thus requires finding an aggregate, or a combination of aggregates, that would adequately reflect the pressure stemming from the conversion of domestic currency into foreign ones, or vice versa.

Unsurprisingly, there is vast historical evidence of situations in which non-financial accounts balance in surplus was accompanied by an ER depreciation and *vice versa*, which contradicts the theoretical logic. To provide an empirical argument, in the following paragraphs we will confront actual data with the construction of the BP curve. Besides, in seeking an aggregate presumably better fitting the logic behind the curve, we will also analyse an alternative indicator sourced from a newly developed statistical tool commonly referred to as “monetary presentation of balance of payments” (Aquilari, Soares and Alidad, 2020).

Let us look at recent empirical evidence of the Czech economy.<sup>12</sup> Lest this analysis be distorted by the FX intervention regime launched by the CNB in the fall of 2013, the examined time series starts in mid-2017 when the FX interventions with lower-bound were discontinued. The time series then extends until November 2024, which leaves us with 90 monthly observations. We will primarily focus on situations of aggregate imbalances in which the ER is supposed to be under pressure to adjust. To check the conformity of macroeconomic data with the model, several modalities are considered. First, the model is standardly presented in its simplified version so that the current account balance is associated with foreign trade and financial accounts balance with portfolio investment. Alternatively, however, we will also scrutinize the conformity by considering the actual scope of the respective aggregates as these are defined in the relevant manuals and quantified by statistics around the world.

Let’s start with the simplified version of current and financial accounts. The following table summarizes the number of cases where the ER adjustments were in line with the conclusion of the model, broken down by specific types of adjustment: that is a) when a surplus led to domestic currency appreciation, or b) when a deficit led to domestic currency depreciation.<sup>13</sup>

**Table 1** Simplified version of current and financial accounts, monthly data (7/2017–11/2024, Czechia)

Conformity with theory	Surplus	Deficit
Yes	44	5
No	46	85

Source: Own calculation, <[www.cnb.cz](http://www.cnb.cz)>

<sup>12</sup> Using the Czech data retrieved on December 15, 2024.

<sup>13</sup> For the sake analysis, the indicate nominal exchange rate (NEER) is employed.

For the situation of a surplus, the model prediction conforms to the empirical data in less than 50 percent of cases, while for deficits, it is less than 5 percent.<sup>14</sup> While a certain leeway in the interpretation of data for educational purposes might be understandable, such results hardly exhibit convincing support for the theory. These aggregates then do not appear to be a good fit for measuring the external equilibrium.

Let us then make the aggregate larger and proxy the international equilibrium by the BoP in its entirety as published by national statistical authorities. The results, as shown in the table below, are on average even more disappointing: while deficit situations conformed to the theory in 20 % of cases, less than 10 percent of the surplus situations did so.

**Table 2** Full version of current and financial accounts, monthly data (7/2017–11/2024, Czechia)

Conformity with theory	Surplus	Deficit
Yes	7	18
No	83	72

Source: Own calculation, <[www.cnb.cz](http://www.cnb.cz)>

For the sake of completeness, and perhaps more out of curiosity, the following table shows the results of the same analysis for a host of different components of the BoP, as if each of them represented a different metric of international equilibrium. Interestingly enough, the relations between values of indicators and simultaneous changes in the ER show results that are more conforming to the theory than when aggregated into larger wholes. All of them were correct in at least 50 percent of cases:

**Table 3** Balances of individual section of BoP vs ER changes, monthly data (7/2017–11/2024, Czechia)

Conformity with theory	Trade balance	Current account	Financial account	Portfolio investment
Yes	50	45	52	49
No	40	45	38	41

Source: Own calculation, <[www.cnb.cz](http://www.cnb.cz)>

The analysis suggests that the relation between BoP indicators and ER changes is more complex and cannot be simplified in any meaningful way. The range of transactions affecting ER and the complexity of the financial system is much broader than foreseen in the model, and there seems to be no single standard BoP indicator, or even a combination of indicators, that can be predictably associated with changes in the ER.

This weaker link between the external balance and the concomitant ER changes may have a number of explanations. The Mundell-Flemming framework assumes producers' mark-ups and marginal costs being responsive to ER movements, unlike the producers' prices themselves, which are sticky (Boz, Gopinath and Plagborg-Moller, 2018). On the other hand, the prices an importing country faces, when expressed in its domestic currency, do fluctuate in response to the bilateral exchange rate. In this respect, the model is consistent with the producer currency pricing where the pass-through to prices in the importer's

<sup>14</sup> Which broadly suggests an independency between the two variables.

currency is one, while the pass-through to the exporter's currency is zero. However, this assumption might be challenged in many ways, briefly elaborated below. Importantly, relaxing the assumption on the application of producer currency pricing weakens the exchange rate adjustment mechanism formulated in the model, as the terms of trade becomes less sensitive to the bilateral exchange rate movements.

As the IMF paper discusses (2019), there are several alternatives to producer currency pricing assumption commonly observable in economic reality. First alternative to be mentioned is the so-called local currency pricing (Deveraux and Engels, 2000) where prices are rigid in the currency of the importer. In this case, no pass-through in the importers currency stemming from the bilateral exchange rate movements is observable, while a complete pass-through in the exporter's currency ensue. As a result, a nominal depreciation in the bilateral exchange rate leads to a deterioration in the price competitiveness of the exporters which is in a sharp contrast to the Mundell-Flemming paradigm.

Another alternative is pricing at dominant currency, typically USD or EUR, where prices are set in a third currency and the mutual trade is therefore affected by exchange rates of both trading economies vis-à-vis the dominant currency. As the study of Boz (2018) finds, pass-through effect is from the dominant currency into export and import is high, while comparatively lower in the cases of producer and local currency pricing. These findings further weaken the external adjustment of the balance of payments by way of exchange rate movements as the flows with the trading partners by less affected by the bilateral exchange rate, or at all.

Another aspect making the foreign trade balance to a certain extent independent of exchange rate movements is the changing nature of the global trade and production chains getting increasingly spreading across several currency areas. Against this background, the country's marginal costs in producing semi-products might be affected not only by bilateral exchange rate changes with their trading partners but also by bilateral exchange rate movement between countries trading at earlier production stage (backward integration). Furthermore, if produced semi-products are consequently exported further down the production chain, these trade flows will also be affected by movements in the bilateral exchange rate between economies at later production stage (forward integration), representing a demand shock<sup>15</sup> (IMF, 2019).

Last but not least, the ER may be affected asymmetrically depending on the types of financial flows. The sensitivity of the ER in countries with large foreign debt financing tend to vary more if the debt consists of bonds and bank loans than in countries where the debts are financed via equity (Gardberg, 2018; Blanchard, Chamon, Gosh and Ostry, 2015). Gardberg (2018) – FDI flows being less influenced by the global financial cycle.

Overall, as it appears from the previous paragraphs, there has been a growing body of literature suggesting that the model might have been getting outdated and the operation of the ER mechanism might not be decisive in the readjustment process.

Considering all objections mentioned above, let us consider an alternative metric of international equilibrium based on the “net financial assets” (henceforth NFA) of banking institutions, which shows a change in the position of the domestic banking system toward the non-resident banking system. The following table shows the number of cases where a change in NFA<sup>16</sup> was associated with a change in ER in a way that conforms to the theory, i.e. an increase in NFA was accompanied by an appreciating ER, and *vice versa*.

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<sup>15</sup> For more details, please see IMF (2019).

<sup>16</sup> The respective indicator was retrieved from so-called monetary presentation of balance of payments, which is meant to separate from the BoP indicators actual flow of money in and outside of the economy.

**Table 4** NFA vs ER changes, monthly data (7/2017–11/2024, Czechia)

Conformity with theory	Change in NFA
Yes	35
No	55

Source: Own calculation, <[www.cnb.cz](http://www.cnb.cz)>

The results do not show much of an improvement over the orthodox BoP statistics, with less than 40 percent of cases conforming to the theory. There may be multiple reasons for this finding. First, not all ER-relevant transactions are necessarily channelled through the banking system. If they are not, then they are not tracked in the banking statistics and in NFA. Secondly, transactions captured in NFA can also be transactions in domestic currency. The reason is that this statistics is based on the sectoral and not on the currency approach. Thirdly, and apparently most importantly, the NFA indicator does not cover ER-relevant transactions carried out within the domestic banking system, as the indicator is quantified towards non-residents only.

To wrap up, none of the established indicators of international equilibrium seem to provide reasonably clear empirical evidence of the story we like to tell about that equilibrium. In other words, we not only have no statistical tool to illustrate the mechanism behind the international equilibrium, but we, therefore, also lack any statistical tool to incorporate the notion of international equilibrium (such as the BP curve in IS-LM-BP) into our analytical framework and econometric models.

## CONCLUSION

We can summarize that there is neither a single item nor a combination of items that can be sourced from the BoP system which would be empirically indicative or predictive of the pressures on the ER adjustments. The relation between ER adjustments and current account balance and financial account balance was found to be rather weak. The same holds true for the indicators incorporated in the IS-LM-BP model, i.e. foreign trade balance and net portfolio investment flows. The limiting factor as for the strength of this conclusion is the fact that the analysis was carried out on data for the Czech economy only, so the empirical evidence presented in the paper does not necessarily leads to a general conclusion valid for all economies.

Still, as discussed above, the clarity of inferences from the BoP statistics concerning ER changes are widely complicated by methodological aspects, to name the ones we find the most crucial:

- the BoP statistics is not based on currency but on sectoral approach, therefore the BoP transactions do not necessarily involve conversion between currencies as they can be settled in domestic currency,
- the accrual principle is applied in the compilation process, so similarly to the previous case, transactions in the system do not necessarily involve conversion between currencies as there is no flow of cash,
- ER-relevant transactions in the BoP statistics are to a large extent recorded off the current or capital account,
- ER-relevant transactions between residents having an effect on exchange rates are not addressed in the external statistics altogether.

To interpret the point off the BP curve by means of selected BoP aggregates is therefore misleading due to adequacy problem. While to do so may serve as an intellectual exercise to serve educational purposes for students to understand the operation of the economy and ER adjustment pressures ensuing from certain economic conditions, the observable changes in ER cannot be explained by the use of the BoP aggregates in question. Importantly, the fact that no single aggregate (or a combination

of aggregates) sufficiently reflects or covers ER adjustments makes any model involving international equilibrium empirically untestable, implying also its limited use in practice for analysing and determining the position of the economy in terms of external balance. To illustrate the point raised in the model, we shall rather turn to the currency markets itself where, at the points off the BP curve, the demand for foreign currencies is outstripping the supply, or *vice versa*.<sup>17</sup>

However, we in no way dispute the conclusions made by the authors of the Mundell-Flemming model such as impossible trinity.<sup>18</sup> We only intend to flag the fact that economic policy faces serious data constraints, consciously or not, when employing the model in the decision-making. And, not less serious inference we can draw, that the BP curve is practically impossible to test empirically, implying that there is no way of realizing whether the economy reached the general economic equilibrium in the IS-LM-BP model or not.

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<sup>17</sup> In this context, Machlup (1950) distinguishes between market and accounting balance of payments, pointing to the fact that both are not necessarily related. Country may very well experience accounting deficit, while its currency might be appreciating on the foreign exchange market if the receipt of the foreign funds exceeds the payments abroad.

<sup>18</sup> The term refers to the impossibility of maintaining fixed exchange rate, free capital movement and an independent monetary policy.

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