Revisiting the Balance of Payment and Macroeconomic Balance in the presence of the Shadow (or the Black) Economy

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Abstract
A variety of illegal activities take place across the India's international border. Holding Swiss bank accounts and the Panama Papers and Pandora box hit the Indian newspaper headline and created political storm. These illegal flows across the border affect the macroeconomic functioning of the economy by changing aggregate demand and money supply primarily. The balance of payments therefore fail to reflect the true picture because of the parallel channels. The saving-investment national and international are actually very different from what the data represent. This paper argues that the shadow or illegal activities are to be incorporated in a macro model for a macro economic analysis whjich is comprehensive and therefore more meaningful.

1. Introduction

The size of the black economy or the shadow economy in India is pretty large in terms of GDP as various indicates exemplify. As illegal transactions pervade the domestic economy. Some of these transactions spill over to the international economy, as there are illicit flows which pour in from the world economy. These activities affect the domestic economy in many ways. The macro data for a genuine and meaningful macroeconomic analysis loses its significance.

However, the black economy or the shadow economy is not considered as pertinent in theoretical and empirical research at the macro level and therefore largely ignored both in the theoretical formulation of the macro-economy as well as in empirical research barring very few attempts. It is true that we do not have a robust time series estimates of the size of the black economy. Focusing only on the recorded part of the economy would yield a partial and incomplete picture as the black economy remains intertwined with the white economy. It is not a parallel economy as it is commonly believed because black incomes are mostly generated in the sphere where white incomes are generated. There are many channels through which the black economy interacts with the white economy which renders the estimates of the macro variables unreliable. This paper seeks to explore and unravel the macro linkages of the growing black economy and in the process revisit the formulation of the three gaps for the Indian macro-economy.

Any macroeconomic policy should ideally be based on our understanding and analysis of the economy in a macro-framework based on the data. The underlying theoretical construct of the stabilization package, in particular, the national income accounting identity, in terms of the three gaps, the investment-saving gap of the private sector, the public sector and the current account deficit fails in this regard as it does not take into account all the aspects of the black economy in India.

While the white economy is the legal economy presumably captured in the data, the black economy emerges when tax is evaded on taxable income. The economic analysis based on the recorded data, which mostly but not only refers to the white economy, therefore, remains incomplete. The black economy is coupled with the economic system, changing thereby the circular flow of income, sectoral balances, and dynamics of the economy.

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Any macro analysis based on legal economic activities which are recorded and reported does not take into account that economic agents, in order to maximise their incomes, take recourse to a variety of unfair and illegal means giving rise to the black economy[i]. For instance, a part of the output may not be declared by the producers and the corresponding incomes are not reported to the tax authorities. This affects the reported rate of growth of the economy and its fiscal health. In international trade, there are illegal activities like, smuggling and drug trafficking, which again fall into the category of unrecorded output. The illegal generation of incomes from legal and illegal economic activities not only undermine the validity of the recorded data, but they affect the behaviour of the economic agents with regard to, say, their consumption and investment decisions with implications for the white economy. This in turn, affects the macro functioning of the economy as well.

A significant component of the Indian economy is black or illegal. Therefore, both the white and the black economy need to be incorporated into the analysis for an objective assessment of the economy as well as the formulation of policies. It is for this reason that in this paper an attempt has been made to incorporate the black economy in the analysis for a proper understanding and appraisal of the economy.

The topic bears on a theme of utmost importance in the study of the Indian economy in the context of the macro economic adjustment programme initiated in early nineties because the size of the black economy is too large to be ignored as indicated by several studies[ii]. The size of the black economy, in fact, is quite significant in many countries. Despite this, it has not spawned commensurate development of the literature to study the black economy as a macro phenomenon[iii]. The issue of tax evasion has been treated in the literature mostly in a micro theoretic framework. Therefore, economists' attention to capture its multifaceted economic manifestation in a macro framework has mostly remained limited. The economic significance of the black economy has never featured prominently in the debates on the Indian macro-economy, particularly with reference to its fiscal aspects. Attempts to analyse the black economy, in general, have been sporadic (NIPFP 1985; Kabra 1982; Gupta 1992; Rishi and Boyce 1990; Bhattacharya and Ghosh 1998; Trehan 2004). In the recent years, some of the estimates worth mentioning are Chaudhuri and Schneider (2011), Mitra and Sharma (2016), Kumar (2016a) and Mukherjee and Rao (2017). For a proper understanding of the black economy, its definition and generation of black incomes indicate that a holistic analysis of the black economy is feasible (Kumar 1993, 1999 and 2002). Therefore, the various aspects of the black economy need to be woven together rather than being viewed as the loose, unconnected ends of the black economy.

2. Sources of illicit financial flows

In order to understand how illicit flows could affect the economy and people's lives, particularly the extent of human deprivation and poverty, we need to discuss the different sources and mechanisms which facilitate such illicit outflows.

In this regard, the role of tax havens is crucial as these lucrative and secretive destinations open up new vistas for alternative deployment of capital which could otherwise be invested in the domestic economy and trigger income generation. Illicit funds are routed through the tax havens to evade taxes and ensure secrecy for them through multiple layering. Tax havens provide space for trusts, shell companies, and foster offshore banking (Palan *et al* 2005; Deneault 2011; Shaxson 2012; Tax Haven Team 2014). Once legitimised in the tax havens, a reverse flow of capital back to India takes place (Kumar 2013a). Thus, the net outflows are less than gross outflows of illicit funds.

Illicit capital flow through transfer pricing: notional

Individuals and companies rely on tax havens using almost similar techniques of tax avoidance by setting up offshore companies and trusts. The MNCs set up affiliates and subsidiaries in the tax havens primarily for the purpose of tax avoidance and tax evasion. The companies publish their consolidated accounts which do not show the activities related to the tax havens and hence separating the illegalities committed and facilitated by the tax havens which are not brought to the fore (Palan *et al* 2010).

The main instrument for tax avoidance and tax evasion and capital flight has been transfer pricing which is routinely resorted to by the MNCs. Baker (2005) believes that about 70% of all capital flight has been facilitated through transfer pricing. Transfer pricing are the prices transnational companies (TNCs) set in their intra-group cross-border sales of goods and services which are perceived to be facilitating internal accounting for monitoring efficiency and performance.

Money laundering and capital flight are not the same thing though capital flight may encompass laundered money. (Palan *et al* 2010). Capital flight takes place when the residents take recourse to deliberate and illicit expatriation of money by those residents or taxable within the country of origin. Money laundering essentially takes place when the financial institutions are engaged in currency transactions involving significant amount of proceeds from international narcotics trafficking.

In a globalised world, the economic activities have overlapping jurisdictions as the exchange takes place between two parties which are located across the border. Each and every activity is also associated with a financial transaction which is legalised by a country. Therefore, these activities generate overlapping tax claims, it becomes contestable as either income or profits that result from international activities can be taxed either in the country of origin or in the country of residence. When every transaction is marked by legal sphere, when the tax rates vary across the nations, a tendency would develop to shift profits from one country to the other so as to reduce the overall tax burden. Both the individuals and the capital are mobile across the border. Therefore, it is an imperative to locate each taxable event. The link between the physical form from its legal location is severed which makes it possible for a transaction to take place physically at one place and legally registered in another country. International tax planning has emerged as an extremely lucrative business. In a tax haven the legal instruments are created by which individuals and companies can reduce and completely severe their links with the country of origin which are in this case are high taxed countries as compared to the low tax or often nil tax countries.

It is also believed that 60% of all international trade is intra-company trade which raises the potential of transfer pricing substantially (Palan *et al* 2010: 68-69). If pricing is done in accordance with the "arm's length principle', which allows the companies to charge for their goods and services at prices which are similar to those which are charged by the unrelated entities in an open market, then there is no evidence for transfer pricing. Transfer pricing is, therefore, abuse of this principle as it is difficult to establish because of the complexity of the international production networks where the companies are increasingly using trademarks, patents, brands, and logos. Transfer pricing can be resorted to by the two companies which are not necessarily located in the tax havens. It is essentially done through mis-invoicing. The possible routes are explained below (Palan *et al*, 2010)

For under-invoicing of exports to a tax haven from the country from which cash has to be expatriated, the goods are sold at full value and the excess earned on this onward sale amounts to capital flight.

If imports are over-invoiced, the excess leaks out of the country as flight of capital and it is likely to be deposited in the importer's offshore bank account.

If the quality or the grade is falsely declared, the possibilities of either over invoicing and under invoicing open up. One can also report falsely invoiced quantities.

Creating fake transactions and payment is effected but no exchange of goods takes place.

Exports to low tax country are under-invoiced and imports from low to high tax countries are over-invoiced to show artificially high cost. Apparently, they are normal and legal and constitute a part of tax strategy at the global level (Palan *et al* 2005). However, transfer pricing has been subject of abuse and it has been used as an effective instrument of shifting profit from high tax jurisdiction to low or no-tax countries (Gravelle 2013). TNCs strategically own a large number of subsidiaries in the tax havens. Even unrelated firms collude and undertake similar price manipulations colluding to evade official restrictions or, to reduce tax burdens.

Palan et al (*ibid*.) quotes Murphy (2008) that in UK, gross annual avoidance amounted to 16.6% of expected tax receipts or 6% of GDP. The IRS estimates that the tax gap in the USA is about 16% of federal revenue and 2% of GDP. There has been a rise in the foreign manufacturing profits earned in the low tax countries.

In 2012, Government of India reported to have carried out transfer pricing adjustment of close to US $9 billion for the fiscal year 2007-08. In 2011-12, abusive transfer pricing led to a loss of tax revenue to the tune of $12.6 billion with around 3500 cases being entangled in litigations[2]. Since profits reported are lower, taxes paid on corporate profits are also correspondingly lower.

Raymond Baker (Kar and Cartwright-Smith 2008) that a channel of notional illicit financial flows which involves "mispriced asset swaps, where ownership of commodities, shares and properties are traded without a cash flow" which is, however, not taken into account in estimation of capital flight.

Criminal activities

The above discussion would lead to a conservative estimate because it does not consider criminal activities like, smuggling. There are illicit financial flows across the border which takes place through an illegal channel, a parallel informal banking system. Smuggling of gold and diamond, trafficking, bribes, cash, etc. which is unlikely to be reflected in the capital account data and also in the trade data because *havala* facilitates such illegal flows across the border. It can also be taken as a special case of mispricing where the declared price is zero. The entire value of the smuggled export accrues to the exporter abroad and the entire value of smuggled import is paid out of savings held abroad. For instance, narcotic drugs, human trafficking, prints of feature films, software, jewelry and so on may be smuggled out of the country. Electronic items, arms, gold, gems and so on are smuggled into the country. Both these kinds of activities results in inaccuracy in the official data on exports and imports and loss of precious foreign reserves. It takes place because there are people who are willing to send money abroad and hold in terms of foreign exchange and there are people who are willing to send money to India.

3. Shadow or illegal activities with implications for BoP in the Indian context

The first notable study on estimation of capital flight for India was done by Rishi and Boyce (1990). Their estimates show that total capital flight during the period 1971-86 was of the order of $21.1 billion in 1986 and the cumulative quantum of capital flight with imputed interest earning amounted to $28.6 billion, which was nearly 71 % of the external debt accumulated during the same period. Zdanowicz, Welch and Pak (1995) also arrived at some estimates of capital flight from India. Their estimates of India's capital flight to US during 1994 and 1995 range from a maximum of $5,893.5 million and $5,584.3 million respectively to a minimum of $411.5 million and $610.9 million respectively as their most conservative estimates.

But these estimates were narrow in terms of their coverage of various sources of illicit flows and the period under study. Major attempts have been made by Epstein (2005), Kar and

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[2] As quoted in Zansky and Prats (2013: 6).

Cartwright-Smith (2008), Kar and Curcio (2011) for the developing countries and Kar (2010, 2011) in the Indian context. Capital flight from India entails (a) conversion of Indian currency to foreign currency as there is no demand for INR in the rest of the world barring a few neighboring countries and (b) earnings or receipts in foreign currency either retained abroad or brought in after conversion to INR but not revealed to the central bank. We need to take note of for a comprehensive account of loss of foreign exchange due to capital flight. The central aspect of this notion of capital flight is illegality[3].

Kar (2011) has estimated India's gross illicit capital outflow during 1948-2008 to be $213.2 billion, with $ 462 billion being the opportunity cost of the capital that has flown out of India, using the World Bank residual approach and also partner country data using IMF-DOTS data.

The opportunity cost of capital outflow on the basis of LIBOR unlike Kar (2011), in which US Treasury Bill rate (short-term) was used was estimated by them. Compared to this, the estimate for illicit capital outflow from India at the end of 2008 is $662 billion with $852 billion being the opportunity cost of these funds over the same period.

Tax havens

There have been a series of disclosures about offshore accounts published in the Indian Express. On 4 April, 2013, the first International Consortium of Justice (ICJI)-The Indian Express investigation unearthed 612 Indians who had incorporated companies in the British Virgin Islands. An undisclosed tax amounting to over Rs 2000 crore in as many as 50 offshore leaks prosecution cases were being heard in the Courts of Delhi alone (The IE, 6th November, 2017). On February 9, 2015, the Indian Express-ICJI-Le Monde reported names and balances in 2006-07 at the HSBC Geneva Branch with account holders numbering 1195 with a total of Rs 25,420 crore. This contributed to the tax kitty till mid 2016 around Rs 5018 crore with 154 prosecution cases were under investigation.

Based on the revelations in the next year 2016, 4 April, The Indian Express with ICJI-Süddeutsche Zeitung, the government quickly responded by setting up a special team to probe the Panama papers. The number of Indians under monitoring had crossed 420. On 6 November 2017 the fourth revelation in the series came to be called as Paradise papers, offshore accounts of big corporate players and high value individuals were detected from the files with Appleby. The investigation showed how the shell companies have been put to a great variety uses as they were continued to be wholly controlled from India to serve a variety of purposes. Instances of assets of Indian companies being used to guarantee loans raised by offshore companies to actually change the ownership of shares held by them in the Indian companies without paying taxes in India turned out to be a common malpractice. It is not illegal to set up offshore companies as India has DTAA with several countries with lower tax rates than its own. But as the Indian Express averred that these series of leaks could help overcome the secrecy that the corporates maintain. Corporates routinely engage in strategising as to how to arrange its financial affairs to reduce its tax liability. A long as tax rules are not violated, the corporates under the corporate veil exploit loopholes in the tax system with much aggression and meticulous planning. Appleby provides proxy directors for companies set up in the tax havens, to facilitate the movement of money at the directive of their clients, the holding companies or intended beneficiaries. Offshore companies manipulate the market and help in money laundering. To overcome this practice of layering and fragmentation to business to keep their operations under a veil, the change in the tax rule would now treat the offshore companies to

[3] Illegal flows, illegal capital flight, illegal financial flows are often generally used synonymously in the literature. However, flight of capital refers to the net amount of capital which escapes the country. Gross illegal financial flows include both inflows and outflows. Illegal flows consider illegal flows of goods and services, a notion broader than illegal financial flows (Kumar 2013a).

be a part of resident in India if the place of effective management is in India. Tax avoidance is a major global problem. Google, Amazon, Starbucks have faced strong regulatory interventions for allegedly manipulating legal loopholes to avoid paying taxes.

4. Over and under invoicing of exports and imports

We will now see how the different components of the balance of payments (BoP) are likely to be affected by the illegalities. Accordingly, we will be able to figure out the flow of foreign exchange across the border to obtain a complete picture of the legal and illegal flows across the border and how are they financed and how are they related to the saving-investment balance of the economy.

The exporters and the importers often do not declare the 'true' value of exports and imports respectively as various studies indicate. The exporters opt for under-invoicing of exports and the foreign exchange earnings to the extent of under invoicing are not surrendered to the Central Bank, i.e., the Reserve Bank of India (RBI). Similarly, the earnings from export of drugs cannot be declared and therefore the earnings are not submitted to the RBI as it is an illegal activity. The foreign tourists visiting India often sell their currency in the local market to buy Indian currency instead of converting it into the domestic currency, the Indian rupee through the formal setup. The workers working abroad may also remit their earnings to India through the illegal channel depriving thereby, the RBI and the economy.

Taking recourse to fake invoicing involves cost as well as potential gains to the trader. In case of, over invoicing of the export bill, the gain involves accrual of export subsidy given by the government and the cost involves purchase of over invoiced amount of foreign exchange from the black market at a premium for submitting it to the concerned domestic authority. When the gain out of extra subsidy is more than the cost of buying the extra amount of foreign exchange, there will be a tendency to over invoice exports. In order to show the factors behind such a tendency, we can put it algebraically as follows.

In case of under invoicing of exports, the real or actual exports X^T is the sum of the reported or white export earnings (X^W) and the extent of under invoicing of exports or black exports ($X^b{}_U$).

$$X^T = X^W + X^B{}_U \tag{1}$$

$X^B{}_U$ indicates the extent of loss of foreign exchange to the country, as this is the amount not reported to the RBI. In case of over invoicing of exports ($X^B{}_O$) the above relation, (4) can be modified as,

$$X^T = X^W - X^B{}_O + X^B{}_U \tag{2}$$

Actual exports exceed white exports by the extent of under invoicing and lower than white exports by the amount of over invoicing.

Over and under invoicing of Imports

The net outcome of two conflicting factors determines the extent of over/under invoicing of imports as it was in the case of over and under invoicing of exports. Over invoicing of import bill entails a higher payment on account of tariff which is a cost to the importer and selling the over invoiced amount in the black market at a premium is the resultant profit from over invoicing. There was a tendency in the high import tariff regime to overwhelm the potential gain from selling the over invoiced amount of foreign exchange in the black market.

In case of under invoicing of imports,

$$IM^T = IM^W + IM^B{}_U \tag{3}$$

In this case, the importer has to procure the excess of foreign exchange over the real value from the *hawala* market to pay for the actual value for the imports.

Bhagwati (1974) has discussed in details the effect of over invoicing on (i) the real and official balance of payments, (ii) individual items in BoP and through them on other variables and (iii) on the time lag between exports and exports receipts.

The studies (e.g., Rishi and Boyce 1990) show a general tendency for over invoicing of imports. If IM^T is the true or actual value of imports, and IM^W is the declared one and IM^B is the illegal amount, then,

$$IM^W = IM^T + IM^B \quad (4)$$

$IM^B > 0$ indicates a case of over invoicing, otherwise it is a case of under invoicing ($IM^B < 0$).

$$IM^T = IM^W - IM^B{}_O + IM^B{}_U \quad (5)$$

In this case, the country loses foreign exchange as the importers demand more from the bank than what is warranted.

5. Macro-economic balance in presence of the black economy

We may note that outflows through the illegal channel (e,g., *hawala*) would depend largely on what could be the illegal sources of inflows. These illegal inflows which could have flowed in would be intercepted and would remain outside the country. A part of it would of course be held illegally within the country. But since foreign currency is not used in domestic circulation, those who intend to bring foreign currency into the country would get them converted into domestic currency and it would be matched by those who would like to take capital out of the country by converting domestic currency to foreign currency. This transaction would take place in the illegal market for foreign exchange. Basically, the illegal supply would end up meeting the illegal demand for foreign exchange emanating from those who want to send capital abroad. Partly, it would also finance illegal demand for foreign exchange being generated out of the black economy in India. *Hawala* ensures that they get what they want without there being any face to face meeting. Inflow of forex is short-circuited and remains outside the economy and satisfying the demand for the first group and INR remains in India albeit changing hands. Funds can be transferred out of India as well as brought back into the country. Only the net amount of funds needs to move from India or into India. The FII flows *via* tax havens and especially the use of the PN route has been an important source of reverse flows of capital back to India.

In many of these cases the expenses are borne out of the funds lying abroad or by borrowing from friends or relatives and equivalent payment are made in India in rupee terms.

6. Redefining exports and imports in presence of illegal or illicit economic activities

Illegal economic activities which are considered to produce social 'bad' for the economy like narcotics, drugs trafficking and human trafficking, smuggling of arms and so on are not included in the national income accounting but result in potential loss of foreign exchange reserves. More importantly, these activities damage the economy and people's lives, especially the poor. Gold and narcotic drugs are illegally imported and funds are transferred abroad through the *havala* channel[4].

Smuggling of gold hurts the economy's growth potential in at least two ways. The leakage of foreign exchange reserves and investment in gold remain trapped in unproductive investment as gold is not an income generating asset which can generate employment opportunities and trigger income multiplier.

[4] A parallel and illegal channel or a banking system for the transfer of foreign exchange across the border which is based on trust. Only the net amount, however, is settled.

Illegal supply of foreign exchange, like remittances flowing in through the *havala* facilitates capital flight as illegal demand for foreign exchange arising out of the need for smuggling, for example, are met. In the process this payment mechanism generates two flows of income, one in Indian Rupees within the economy from those who demand foreign exchange illegally to those who are the intended recipients of remittances sent illegally through the *havala* to be received in Indian Rupees and the other corresponding flow abroad in foreign currency.

As discussed in Kumar (1999, 2012), the components of export black and import black are as follows:

$\text{Exports}_{\text{Black}}$ (X^B) = under-invoiced exports + exports of drugs + under-invoicing of tourist expenditures + savings of Indian labour working abroad retained there through the *havala* route + returns on assets held abroad + Under-invoiced services ($X^W{}_S$) (6)

Only a part λ of black exports as shown above will constitute illegal supply for foreign exchange in the illegal market for foreign exchange, i.e., havala.

Illegal supply of foreign exchange in the havala = Under-invoiced exports of goods and services ($X^{\mathbf{B}}{}_G$ and $X^B{}_S$) + illegal sale of foreign exchange by the tourists + labour working abroad retained there through the *havala* route ($Rem^{\mathbf{B}}$) + returns on assets held abroad (r^B) = $\lambda.(X^B{}_S + X^B{}_G + X^B{}_T + Rem^B + r^B)$ (7)

and (1- λ) will remain abroad in the form of investments, deposits in the tax havens and off-shore banks.

$\text{Imports}_{\text{Black}}$ (IM^B) = under-invoiced imports – over-invoiced imports + smuggling + Indians undeclared expenditure abroad on education, health and tourism. In case of under invoicing of imports, the importers have to buy foreign exchange in the *havala* market. (8)

Illegal demand for foreign exchange = ($IM^B{}_{Sm}$) + Indians undeclared expenditure abroad on education, health and tourism ($IM^B{}_{To}$) + illegal investment abroad ($I^B{}_{Dep}$) (9)

Exports and imports of services are also subjected to mis-invoicing. Expenditure on health, education and tourism abroad are often over-stated. Foreign tourists often prefer to buy domestic currencies in exchange of foreign currencies from the authorised agents[5]. Therefore, in the *havala* transactions, the demand for illegal foreign exchange is met by supply of illegal foreign exchange.

Supply of illegal forex equals demand for illegal forex. This has to be so as it is an illegal market with no backing from the RBI.

A part of under-invoiced exports + illegal sale of foreign exchange by the tourists + Remittances sent from abroad + Interest earned abroad from illegal deposits + (funding for terrorism and trafficking) = Demand due to smuggling + Travel abroad for health, education and tourism + demand for opening up bank accounts in the tax havens and Swiss Banks + terrorism, illegal arms, human trafficking related.

7. Reformulation of the BoP

A complete account of all the international transactions across the border in reality, which can be called the true balance of payments (BoP_{True}) consists of what is recorded by the Central Bank, i.e., Reserve Bank of India (RBI) and what is not reported to the RBI and therefore not recorded. The former, which is the one reported may be called the official balance of payments

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[5] There could be other ways of transferring capital out of the country through the trade route. These are misreporting of quality, misreporting of quantities and creation of fictitious transactions for which payment is made (Palan *et al* 2005: 68-69). In addition kickbacks or bribery and theft by government officials add another source of illegal transfer of funds.

($BoP_{Official}$) and what is not recorded because of the illegalities associated with the flows may be called illegal (BoP_{Black}) (Kumar 2013). Therefore, there could be two channels of flows across the border. One is through the officially permitted channel using up the officially held foreign reserves with the RBI which gets recorded and the other is through illegal channels not officially permitted and hence not reported and remains unaccounted for. So, an account of all the flows across the border consisting of both the flows is actually the true BoP (Chattopadhyay 2018).

$$BoP_{True} = BoP_{Official} + BoP_{Black} \quad (10)$$

However, even if the transactions (e.g., trade) are reported to the central bank and recorded as a part of 'Official', some of the transactions could be illegal in the sense that the intention is to take resources out (or otherwise) of the nation surreptitiously by taking resort to unfair means like mis-invoicing of exports and imports, i.e., reporting the export and import figures to the RBI which contain illegal amounts of exports and imports. Hence the officially recorded BoP figures may contain illegal or black transactions ($BoP_{Official, Black}$) and BoP which is legal ($BoP_{Official\ White}$).

$$BoP_{Official} = BoP_{Official\ White} + BoP_{Official, Black} \quad (11)$$

We adopt a disaggregated approach to know the sources of foreign exchange which contribute to the flight of capital and different channels of transfer. The illegal channel which facilitates the illegal flows corresponding to the current account transactions of the BoP is called *havala* in the Indian context. Since the channel is illegal, the transactions are not reported and therefore remain unrecorded. These illegal flows are in addition to the BoP which is officially reported. Corresponding to this, we can therefore add BoP_{Black} to the $BoP_{Official}$.

The true balance of payments (BoP) may be written as the sum of official BoP which is the aggregate of legal as well as illegal ($BoP_{Official, Black}$) plus the BoP which is illegal and unrecorded (BoP_{Black}).

$$BoP_{True} = BoP_{Official\ White} + BoP_{Official, Black} + BoP_{Black} \quad (12)$$

8. The reformulation of the three-gaps

The National Income Accounting Identity (NIAI) in terms of the three gaps, the investment-saving gap of the private sector as well as the public sector and the external account balance form the basis of the economic rationale of the stabilisation package. The investment-saving gap of the public sector reflects the net borrowing of the public sector comprising all the three tiers of the government and the public sector enterprises. It is therefore much broader than the fiscal deficit of the Centre which is the kingpin of the stabilisation package.

As per the NIAI, the sum of the investment-saving gaps of the private sector and the public sector[iv] {(I_p - S_p) and (I_G - S_G) respectively} is identically equal to the current account deficit (CAD)[v] which can be expressed as follows,

$$CAD \equiv (I_P - S_P) + (I_G - S_G) \quad (13)$$

This provides the rationale behind the stabilization package, which targets the investment-saving gap of the public sector[vi] to restore balance in the external account as they are assumed to be related under the assumption of a stable private sector investment-saving gap[vii]. It is argued that a high investment-saving gap of the public sector (or fiscal deficit) generates excess demand and inflationary tendencies in the economy. There is also a spill over of excess demand from the economy to the external sector can lead to adverse current account imbalance given the degree of openness of the economy and composition of the government expenditure[viii]. This is often referred to as the twin deficit problem where the investment-saving gap of the public sector and the current account imbalance are closely associated. A flow of funds matrix depicting the inter-relationship among the sectors in terms of saving-investment balance is used for quantifying the adjustment programme.

The white (or legitimate) current account needs to be reformulated as follows, if we ignore the invisibles or exports and imports are suitably defined,

CAS^W (= Trade surplus for goods and services) $= X^W - IM^W$,

If we denote what is reported as white (W), then the true values (T) differ from the recorded ones by the extent illegalities, that is black (B).

Therefore, $IM^W = (IM^T + IM^B)$ due to the general tendency of the over-invoicing of imports and $X^W = (X^T - X^B)$ due to the under-invoicing of exports. Actually, the exchange rate and the tariff determine whether the traders would resort to over-invoicing or under-invoicing as pointed out earlier.

$$CAS^W = (X^T - X^B) - (IM^T + IM^B) = (X^T - IM^T) - (IM^B + X^B) \quad (14)$$

The true current account surplus if positive indicates an accretion of foreign exchange reserves. In presence of under-invoicing of exports and over-invoicing of imports what is reported and recorded is therefore less than the true CAS by the extent of under-invoicing of exports and over-invoicing of imports.

The saving-investment balance of the domestic economy consisting of private household sector (P) and the firm (f) can therefore be written as (Chattopadhyay 2018),

$$(S^W{}_P - I^W{}_P) + (S^B{}_P - I^B{}_P) + (S^B{}_f - I^B{}_f) + (S^W{}_f - I^W{}_f) + (S_g - I_g) + (S - I)^B{}_{ext} = (X^W - IM^W) + (IM^B + X^B) \quad (15)$$

9. Conclusions

Since the black economy constitutes a significant portion of our economy and it is deeply interwoven with the white economy, any macroeconomic analysis would not be meaningful unless we incorporate the black economy into an integrated framework. Moreover, the major macro variables are all affected by the presence of the black economy. Incorporating the black economy, this paper reformulates the three-gap model to depict how the balance of payments and the saving-investment balance of the economy would consist of both the white and the black part. This paper argues that this analysis of the magnitudes (and even the signs) of the gaps based on the white economy may not be the true ones. Since the gaps are based on the partial picture of the economy, the magnitudes of the three gaps would change with the incorporation of the black economy (or the shadow economy). The fiscal deficit and the current account deficit would be substantially lower in the absence of tax evasion. Since the black economy remains outside the purview of the economic analysis, the basis of policy making remains weak. The shadow economy reduces the autonomous expenditure multiplier in an open economy due to an increase in the import propensity. The leakage of resources leads to a fall in the investible resources in the economy which lowers growth potential in the economy. Since the stock of foreign exchange reserves is affected, the control over money supply is likely to be affected too.

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[i] Unambiguous characterisation of the white or recorded economy as the legal economy and black economy as the illegal economy is difficult. As, not only there is a close interaction between the two, the recorded economy to an extent captures the vestiges of black economy and a part of legal activities

may not be recorded at all, like e.g., unorganised sector activities.

[ii] The first notable study was done by the National Institute of Public Finance and Policy (NIPFP 1985), followed by Gupta (1992) and Kumar (1993, 1999a and b). The NIPFP Report estimated the size of the black economy to be 20 percent of the white economy in 1980-81 (exclusive of smuggling and illegal activities). Gupta (1992) corrected the estimates to be 42 percent of GDP for 1980-81 and 51 percent of GDP for 1987-88. Kumar corrected the estimates to eliminate double and multiple counting and transfer income (such as bribe) and arrived at 30 percent and 40 percent of GDP for 1990-91 and 1995-96 respectively.

[iii] See Schneider (2000). The survey article only marginally refers to the macro analysis of the black economy.

[iv] The public sector refers to all the three tiers of government, Centre, state and local. The investment-saving gap as in (1) corresponds to the public sector investment-saving gap given in the National Account Statistics (NAS).

[v] The link between internal balance and external balance is established through the Keynesian NIAI for an open economy as discussed above. Following a simple Keynesian analysis we can show, how an expansionary fiscal policy can lead to a deterioration in the external imbalance.

From the NIAI, $GDP = C + I + G + X - Z$, (2)

Since, $GNP = GDP \pm F$

$$GNP = C + I + G + CAS \qquad (3)$$

Where FI = net factor income from abroad and CAS = current account. From the income-expenditure identity, we can rewrite the NIAI in the following way,

$$(Z - X) \pm F = I - S \qquad (4)$$

Where I = Gross national investment and S = gross national saving, X = exports of goods and non-factor services. Z = Imports of goods and non-factor services. The right hand side as well as the left hand side of equation (4) can be split into the private and the government sector components as in (1).

[vi] The fiscal deficit or the investment saving gap expressed as a percentage of GDP of the Centre and not of the public sector as whole, was, in fact, considered as the target of the stabilisation programme. However, it is understood that stabilization requires fiscal consolidation of all the tiers government combined together.

[vii] Otherwise the private sector gap would absorb the rise in the fiscal deficit and weaken the link between fiscal deficit and the external account gap. This is often called ‘twin deficit’ in the literature.

[viii] Given the inflow of foreign capital, the balance of payments would deteriorate. Greater the degree of openness of the economy, greater would be the effect on current account. The saving-investment balance would also be affected depending on the composition of the public sector expenditure and this would negate the spill-over effect and weaken the impact of fiscal deficit on current account imbalance.